6/24/2014

Western Refining

GALLUP

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

NMED Hazardous Waste Bureau

RE: DISAPPROVAL
INVESTIGATION REPORT
SOLID WASTE MANAGEMENT UNIT (SWMU) No. 1 AERATION BASIN AND SWMU No.14
OLD API SEPARATOR
WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY
EPA ID # NMD000333211
HWB-WRG-13-001

Dear Mr. Kieling:

The following responses have been prepared pursuant to your letter, which provided comments prepared by your staff on the *Investigation Report Solid Waste Management Unit (SWMU) No.1 Aeration Basin and SWMU No. 14 Old API Separator*, dated February 2013 for the Western Refining Company Southwest Inc. ("Western"), Gallup Refinery. Your comments are repeated below followed by Western's response.

I would first like to offer a general comment regarding Western's preparation of site investigation reports prepared for submittal to the New Mexico Environment Department (MNED). As you are aware, Western is conducting site investigations at its former Bloomfield refinery (Bloomfield Terminal), as well as, at the Gallup refinery. The requirements for conducting these site investigations and preparation of site investigation reports are set forth in the Bloomfield Order and the Gallup RCRA Post-Closure Care Permit ("Permit"). The requirements in both of these legal instruments are very similar and it is Western's understanding that NMED has intentionally provided essentially the same requirements in each to ensure the agency receives investigation reports that are very similar in format and content. However, it has been Western's experience in attempting to comply with the Bloomfield Order and Gallup Permit that NMED has provided some inconsistent comments and direction on the preparation of site investigation reports. Western recognizes individual project managers may provide slightly different comments, but Western would like to work with NMED to achieve a consistent format/presentation in all of our investigation reports prepared for NMED under either the Bloomfield Order or the Gallup Permit.

To further this goal, we have included some of NMED's recent comments on other site investigation reports that are related to the same topics addressed below. Hopefully through this discourse we can reach agreement on a consistent approach for preparation of site investigation reports prepared under the Bloomfield Order and Gallup Permit.

NMED Comment 1

In Section 4.4 (Monitoring Well Construction and Groundwater Sampling), the Permittee repeats the soil descriptions from Section 4.3.1 (Aeration Basin Soil Investigation) and Section 4.3.2 (Old API Separator). Instead of repeating the soil descriptions, describe the well development and groundwater sampling conducted during this phase of work. Include descriptions of the

volume of water purged, field parameters measured and the results, identify the unit from which water was sampled, and discuss any other details which may aid in understanding the groundwater at the site. In the revised Report, remove the repetitive soil descriptions and include the additional groundwater-related information.

Response: Western has revised the report to minimize the redundancy between sections 4.3 and 4.4. Some of the "soil" information included (e.g., field evidence of contamination and associated depths and sample depths) was included based on earlier NMED comments to include this information in this section of site investigation reports. Comment No. 10 from NMED's Dec. 6, 2009 comments on the Bloomfield Group 2 Investigation Report is shown below for reference. Based on NMED's most recent comment, Western will eliminate the redundant soil information from Section 4.4 in this and all subsequent site investigation reports.

> *NMED Comment No. 10: In Section 4.4 (Monitoring Well Construction, Boring, or Excavation Abandonment), SWMU No. 9 (landfill pond), page 17, Western briefly discusses the installation of one soil boring and the conversion to a temporary well. Western must revise the Report to further describe the investigation of this SWMU (e.g., field screening evidence of contamination and associated depths, sample depths, depths of saturation, screen interval of the temporary well). The information provided for each SWMU must be consistent (e.g., the level of detail provided for SWMU No. 9 must be comparable to the detail provide for SWMU No. 2 and SWMU No. 8).*

Regarding the discussion on well development and groundwater sampling, Western also received comments on the presentation of this data from NMED on January 24, 2011 in the comments on the Bloomfield Group 3 Site Investigation Report. Comments No. 2 and 5, and Western's response is shown below for reference. Including the groundwater discussion in one section (e.g., Section 4.4 Monitoring Well Construction and Groundwater Sampling) with a referenced appendix, as previously accepted by NMED, is a preferred method of presentation and hopefully acceptable to NMED to maintain consistency between Western's various site investigation reports.

> *NMED Comment No. 2: The Respondents discuss monitoring well development and groundwater sampling in various sections throughout the Report, including Section 3.4 (Monitoring Well Installation, Completion, and Development), Section 3.6 (Ground Water Sampling and Vadose Zone Vapor Sampling), Section 4.5 (Monitor Well Development), Section 6.4 (Ground Water Sampling) and Appendix F (Field Methods). Each Section must be referenced to know what monitoring well development and groundwater sampling activities occurred during the investigation. Revise the Report to include one section, and subsections as appropriate, that addresses all monitoring well development and groundwater sampling activities (e.g. sampling methods and procedures), or include all details in an Appendix (e.g., Appendix F) and reference the Section or Appendix throughout the Report, where appropriate.*

> *Western Response: Western agrees that the report format, as prepared pursuant to the NMED July 27, 2007 Order and previous guidance, is redundant and that combining*

information into one section with reference to Appendices, as necessary, will result in a better deliverable. The report format has been revised, as directed.

NMED Comment 5: In Section 3.6 (Ground Water Sampling and Vadose Zone Vapor Sampling), page 15, the Respondents state, "[t]he depth to groundwater and depth-to-SPH were measured to the nearest 0.01 ft and recorded relative to the surveyed well casing rim." The Respondents do not identify the instrument used to collect the depth to water and depth to separate phase hydrocarbon (SPH) measurements. Revise the Report to provide the instrument(s) used to collect these measurements, and revise this section to address how the monitoring wells were purged and the amount purged. Alternatively, reference Appendix F (see also Comment 2).

Western Response: The type of instrument used for fluid level measurements and the discussion on well purging is included in Appendix E.

NMED Comment 2

The Permittee calculated a site-specific dilution attenuation factor (DAF) for soil screening purposes. In Section 5 (Regulatory Criteria) the Permittee states that "[a] review of site conditions indicates that a DAF of 1.0 is overly conservative, thus a site-specific DAF value was calculated). The site-specific DAF was calculated as 461." In the same section the Permittee goes on to state, "[t]he screening levels included in Table 7 and 8 are based on residential and non-residential land use and include a screening level to evaluate the potential for constituents to migrate to groundwater using a site-specific DAF." The purpose of calculating DAF is to determine whether or not soil screening levels (SSLs) are protective of groundwater. Because groundwater in the area is affected by contamination, it is inappropriate to calculate a DAF for the site. Revise the Report to remove the calculation of site-specific DAF and all associated soil screening assessments (text, tables, and figures). A more appropriate screening level for soil are the NM SSLs (or EPA Regional Screening Levels as appropriate) as outlined in NMED's Risk Assessment Guidance.

Response: NMED provided a general reference to the NM SSLs (or EPA Regional Screening Levels as appropriate) as outlined in NMED's Risk Assessment Guidance and states, "Because groundwater in the area is affected by contamination, it is inappropriate to calculate a DAF for the site." Western requests clarification on this statement. Is it NMED's position/policy that for any SWMU and/or AOC that has groundwater in the area affected by contamination that no site-specific DAF may be calculated to determine appropriate soil remediation levels? Is NMED requiring all sites in New Mexico to use a DAF equal to 1.0 if there is groundwater contamination on the site, which is "in the area" of the subject soils?

As quoted from Section 4.4 of NMED's Risk Assessment Guidance, "Development of New Mexico SSLs considers only the dilution of contaminant concentration through mixing with groundwater in the aquifer directly beneath the source. This is consistent with the conservative assumptions used in the SSL methodology including an infinite source, <u>soil contamination extending from surface to groundwater</u> and the point of exposure occurring at the downgradient edge of the source." As noted in NMED's guidance, these are conservative assumptions and it is clearly stated in these assumptions that soil contamination extends from "surface to groundwater". Therefore, the DAF calculation as presented in NMED's guidance assumes that groundwater is already contaminated. Western does not understand NMED's refusal to allow calculation of a site-specific DAF based on the following statement, "Because groundwater in

the area is affected by contamination, it is inappropriate to calculate a DAF for the site", when in fact this condition is entirely consistent with the assumptions stated in NMED's Risk Assessment Guidance.

NMED Comment 3
In Section 2.1 (SWMU No.1 Aeration Basin) include references to the historical reports (title, date, section or page number) when discussing prior site investigations. Include similar references in Section 2.2 regarding the Old API Separator (OAPIS) as well.

Response: The requested references have been added to Section 2.1 and Section 8 References. It is noted that the only historical reports discussed in Section 2.2 are also referenced in Section 2.1.

NMED Comment 4
In Section 2.1 (SWMU No.1 Aeration Basin) the Permittee must note that groundwater monitoring wells GWM-2 and GWM-3 were installed as dry wells to detect leakage from the Aeration Basin. Revise the Report as necessary.

Response: Additional discussion has been added in Section 2.1.3 to explain that wells GWM-2 and GWM-3 were installed for the explicit purpose to determine if water was migrating from the Aeration Basin and were intentionally installed in the vadose zone as "dry wells."

NMED Comment 5
The soil descriptions in Section 4.3 (Exploratory Drilling Investigations, Soil Sampling and Boring Abandonment) and descriptions of hand auger refusal in gravel at about 0.5 feet below ground level (ft bgl) in borings around the aeration basin indicates that the berms surrounding the aeration basin contain a significant percentage of gravel which may have facilitated seepage into the surrounding soils. Revise the Report to provide a description of the design and composition of the berms, if available.

Response: The lithology of the berms is described in Section 4.3 and is presented in numerous soil borings and two cross sections (Figures 7 and 8). As clearly shown in this information, the berms are predominantly silty clay with gravel occurring mostly near the top of the berms where it was placed to facilitate driving and moving equipment in the area. Where gravel is present beneath the upper 0.5' to 1.0', it occurs in a silty clay matrix and the percentage of gravel is not sufficient to facilitate seepage through the dikes. As the gravel predominantly occurs on the top of the berms and above the operating water level of the Aeration Basin, it would not have facilitated seepage into the surrounding soils.

The design of the Aeration Basin, including the berms, has previously been submitted to the NMED and Western does not believe it would be beneficial to incorporate this design document into the site investigation report.

NMED Comment 6
In Section 4.3.1 (Exploratory Drilling Investigations, Soil Sampling and Boring Abandonment), the Permittee describes "odor" and "discoloration" as part of the soil boring descriptions. In the revised Report, include additional details regarding the odors and colors observed (organic odor or petroleum odor, organic discoloration or petroleum discoloration).

Response: The report text has been revised to provide additional information on the odors and colors observed.

NMED Comment 7

In Section 5 (Regulatory Criteria), the Permittee states, "[t]here are no soil screening levels for gasoline range organics and the individual compounds listed for groundwater (gasoline range criteria) are included in the list of analytes used for site samples. As there could have been a variety of petroleum types (e.g., crude oil or various refined products) going to the OAPIS and Aeration Basin, the screening level for "unknown oil" was selected for comparison to the diesel range soil and groundwater analytical results. The laboratory analyses for motor oil range organics only report results for >C28 to C35. Since the motor oil range results only include hydrocarbons greater than C28, it is not appropriate to compare the results against screening levels for product types that have lower hydrocarbon 50 ranges (e.g., diesel fuel - 60% C11-C22 aromatics and 40% C9-C18 aliphatics). The only product type in Table 6-2 that contains the >C28-C35 carbon range is "waste oil", which includes C19-C36. Therefore, the motor oil range organic soil analytical results are compared to the "waste oil" soil screening levels. The NMED guidance specifies the inclusion of "petroleum-related contaminants" as the groundwater criteria for waste oil instead of a motor oil range screening level and these constituents are included in the list of reported analytes in Tables 9 and 10." Because the refinery has handled the full range of petroleum products and all of those products have more than likely passed through the OAPIS and potentially leached into the soils are the aeration basin, the Permittee must use "unknown oil" from Table 6-2 for all comparisons. Unknown oil covers the full hydrocarbon range and is the most conservative standard. Revise the Report to use unknown oil as the screening level.

Response:

In its evaluation of the presence of non-specific (i.e., total) petroleum hydrocarbons in environmental samples, Western has three separate analyses conducted by the analytical laboratory. An analysis of the "gasoline range organics" is conducted to determine the presence of hydrocarbons in the C6 to C10 hydrocarbon range. The second analysis for "diesel range organics" is completed to evaluate the presence of hydrocarbons in the >C10 to C28 hydrocarbon range. The final analysis for "motor oil range organics" detects the presence of hydrocarbons in the >C28 to C35 hydrocarbon range. In this manner, the three analyses determine total concentration of petroleum hydrocarbons from C6 to C35 and also provide mixture specific information to determine the individual concentrations within these three ranges. It is valuable to perform the three separate analyses because individual petroleum hydrocarbons (e.g., hydrocarbons with six carbon atoms vs. hydrocarbons with 35 carbon atoms) have been demonstrated to have different impacts on human health and the environment. This fact is recognized by NMED's determination of different screening levels for different petroleum products due to varying compositional assumptions (see Section 6 of NMED's 2012 *Risk Assessment Guidance for Investigations and Remediation*.

In the situation where Western identifies petroleum hydrocarbons in environmental samples that cannot be associated with a known product type, then Western uses the screening level for "unknown oil", as directed by NMED. The screening level for unknown oil is used for comparison to the diesel range organics analytical result. As explained in Table 6-1 of NMED's 2012 *Risk Assessment Guidance for Site Investigations and Remediation*, the assumption is that the "unknown oil" petroleum product is composed of 100% C11-C22 aromatic hydrocarbons. The diesel range analysis reports the presence of hydrocarbons in the >C10 – C28 range, thus there is overlap between the petroleum constituents reported by the diesel

range analysis and those assumed to be present in the unknown oil product type. In other words, it is possible that the hydrocarbons detected by the diesel range analysis could in fact include the C11-C22 aromatics used as the basis for the unknown oil product type.

The analysis for motor oil range organics only analyses for >C-28 – C35 hydrocarbons. There is no overlap between this range of petroleum constituents and those used to represent unknown oil (i.e., C11-C22). In other words, the petroleum hydrocarbons reported by the motor oil range analysis cannot and does not include the C11-C22 hydrocarbons used to represent unknown oil. Therefore, an analysis for motor oil range organics should not be evaluated for environmental impacts by using toxicity for a totally unrelated carbon range. This would be similar to comparing an analytical result for toluene to the risk-based screening level for benzene. Both toluene and benzene are hydrocarbons and in fact have many similarities in their composition, but they pose different risks to human health and the environment and should be evaluated using toxicity data that is specific to each.

A review of NMED's Table 6-1 reveals there is only one product type that does not include significant percentages of carbon ranges that cannot be present in the motor oil range analysis and this is "waste oil." The motor oil range analysis covers >C28 to C35 and the waste oil composition is based on C19-C36 aliphatics, therefore, it is possible for the motor oil range analysis to detect the presence of hydrocarbons represented by the waste oil product type. Based on these facts, Western compares the analytical results from the motor oil range analyses to the screening levels for waste oil. Western requests that NMED reconsider their comment; no changes have been made to the data tables.

NMED Comment 8

In Section 7.1 (Conclusions), the Permittee states, "[a] cumulative risk evaluation for soils is presented in Table 13. Because the Aeration Basin and OAPIS are located adjacent to each other, the cumulative risk evaluation combines the data for both SWMUs. The evaluation was conducted by taking the maximum reported soil concentration of each detected constituent and dividing by the residential screening level and non-residential screening levels as shown in the equations below. These calculations are separated for carcinogenic and non-carcinogenic constituents. The cumulative carcinogenic risk is 1.4×10^{-3} assuming residential land use and 9.3×10^{-5} for non-residential land use. The hazard index for residential land use is 1.5 and for nonresidential land use is 0.41." The Permittee may find that it makes more sense to separate the Aeration Basin and the OAPIS for cumulative risk calculations. Separate cumulative risk calculations may be of use for future corrective action at both sites. Either SWMU may positively or negatively affect the outcome of the calculation. Additionally, see Comment 9 regarding "non-residential" land use.

Response: Western included both SWMUs in the same cumulative risk evaluation based on previous NMED comments, which Western understood to request that cumulative evaluations should, at least in some situations, include more than only a single SWMU or area of concern. A specific example of such a comment was received from NMED on January 24, 2011 in the comments on the Bloomfield Group 3 Site Investigation Report. An excerpt from Comment No. 17 is shown below for reference. Western agrees with NMED's comment that "it makes more sense to separate the Aeration Basin and the OAPIS for cumulative risk calculations." As the final remedy and cleanup levels may be determined on a SWMU by SWMU basis, it makes sense not to include cumulative risks across SWMUs for which remedy selection may occur separately. Table 13 has been revised to provide separate calculations for each SWMU, which now appear in separate tables – Table 13 for SWMU 1 and Table 14 for SWMU 14. Western notes that the same approach also makes sense for the Bloomfield Refinery Order.

NMED Comment No. 17: "The Respondents must evaluate the data using a conservative approach by applying the maximum concentrations across the entire data set."

NMED Comment 9

In Section 7.1 (Conclusions) the Permittee states for soils that, "[t]he cumulative carcinogenic risk is 1.4 x 10^{-3} assuming residential land use and 9.3 x 10^{-5} for non-residential land use. The hazard index for residential land use is 1.5 and for non-residential land use is 0.41." For groundwater the Permittee states, "[t]he cumulative carcinogenic risk level is calculated to be 2.2x 10^{-3} and the hazard index is 909.53." Typically, a hazard index (HI) is calculated for soil and not for groundwater. Draft RCRA Permit Section IV.D and the Bloomfield Order Section VII both describe the groundwater cleanup policy used by the Hazardous Waste Bureau. In the revised Report, remove the calculation and discussion of a HI for groundwater. For the calculation of the soil HI, the "non-residential soil screening level" is based on several different standards: NMED Industrial Occupational Screening Level, NMED Construction Worker Screening Level, EPA Industrial Screening Level, and EPA Industrial Screening Level x 10. Based on current and future land use NMED assumes that the most appropriate screening level is the Construction Worker Screening Level (SSL); however, the Permittee may develop a site specific conceptual model and determine which SSL is most protective of human and environmental health. Revise the Report to use the Construction Worker SSL or the SSL of the Permittee's choice, but do not use multiple SSLs. In the revised Report, discuss the calculation of site risk and the HI for soil based on the selected SSL.

Response: The calculation and discussion of a HI for groundwater has been removed from the report as directed. Regarding the use of multiple SSLs, Western agrees that the use of a single SSL based on one type of non-residential receptor is a much simpler approach and that use of NMED's construction worker SSLs should be protective based on the very conservative assumptions used for development of the construction worker SSLs. As stated in Section 2.3.3 of MNED's 2012 *Risk Assessment Guidance for Site Investigations and Remediation*, "chronic toxicity information was used when developing screening levels for a construction worker receptor. This approach is significantly more conservative than using sub-chronic toxicity data because it combines the higher soil exposures for construction workers with chronic toxicity criteria." Tables 5, 7, 8, 12, and 13 have been revised to reflect a single non-residential receptor (i.e., construction worker) under the NMED criteria. Table 12, which did contain water level data, has been combined with Table 2, which also contained water level data and now what was Table 13 has been renumbered as Table 12. The new Table 12 presents the cumulative risk and hazard index evaluation for only SWMU No. 1. New Table 13 (SWMU No. 14 Soil Cumulative Risk and Hazard Index Evaluation) also uses a single non-residential receptor. As EPA only has industrial screening levels, these are retained for constituents for which NMED construction worker SSLs are not available.

Western notes that in preparation of similar site investigation reports at its Bloomfield Terminal (former Bloomfield Refinery), it was directed to use the most conservative of the two NMED non-residential (i.e., industrial worker and construction worker) SSLs. See the excerpt from comment no. 32 below (from NMED's January 24, 2011 comments on the Bloomfield Group 3 Site Investigation Report) for reference. Western believes that a consistent approach should be used at both facilities since the same guidance applies at both and the applicable requirements under the Bloomfield Order and Gallup Permit are essentially the same.

NMED Comment No. 32: "To alleviate confusion and apply a more systematic approach, revise the tables and text of the Report to apply the data to the most conservative non-residential scenario (e.g., construction worker or industrial) and the residential scenario.

NMED Comment 10

In the Executive Summary, and throughout the Report, the Permittee refers to "screening levels." For example in Section 7.1.1 (Aeration Basin) the Permittee states, "[f]our organic constituents (1,2,4-trimethylbenzene, 1-methylnaphthalene, benzene, and naphthalene), and DRO were detected in three soil samples at concentrations exceeding their respective screening levels." At the end of the soil discussion section, the Permittee writes, "[o]verall, there were few exceedences of the screening levels in the soil samples collected around the Aeration Basin. Only 3 out of 103 soil samples collected around the Aeration Basin exceeded screening levels." Revise the Report to state specifically which screening levels analytes are being referenced.

Response: The discussion in Section 7 has been revised to include additional discussion on which screening levels are exceeded in the individual samples. It is noted; however, that the referenced section (7.1.1) is part of the conclusions and recommendations and intentionally does not attempt to repeat all of the detailed information provided in Section 6. There is a detailed discussion in Section 6 where each constituent that exceeds a screening level is discussed in detail, including the screening levels vs. reported concentrations and a list of each sample that contains concentrations exceeding the individual constituent's screening level.

NMED Comment 11

In Section 7.1.1 (Aeration Basin) under the groundwater discussion the Permittee states, "[w]hile there are detections of seven organic constituents and DRO in groundwater samples collected immediately surrounding the Aeration Basin, the concentrations are not significantly above the screening levels (i.e., generally less than one order of magnitude above the screening level). The saturated intervals in most locations consist of clayey sand, which was found to not be very productive during sample collection activities. The clayey sand intervals do not appear to be laterally continuous at most locations based the inability to correlate zones between most of the soil borings completed around the perimeter of the Aeration Basin. It also appears that the source of recharge to the saturated intervals found in the borings around the Aeration Basin is the wastewater, which has been maintained in the Aeration Basin. As the Aeration Basin is removed from service and the liquids are removed, it is probable that the saturation observed in borings SWMU 1-2, SWMU 1-3, SWMU 1-4, SWMU 1-5, SWMU 1-6, SWMU 1-7, SWMU 1-8, SWMU 1-24, and SWMU 1-37 will dissipate." Revise the Report to discuss the specific constituents and soil screening levels being discussed. The clayey sand interval is likely a component of sand-stringers. While not continuous, the sand stringers are potential migration pathways for contamination throughout the site, aiding in the movement of the wastewater from the aeration basin to the surrounding area. Once the aeration basin is dry, groundwater levels must be checked and reported to NMED.

Response: The referenced section of the report is a final summary of the groundwater conditions near the Aeration Basin. If you look at the second paragraph of this same discussion on groundwater, you will see the following sentence. "Seven organic constituents (1-methylnaphthalene, 2-methylnaphthalene, 1,2,4-trimethlybenzene, benzene, MTBE, naphthalene, and 2,4-dimethylphenol), and DRO were detected in groundwater samples collected from soil borings at concentrations above screening levels." As the requested information is already presented in this section of the report, no change has been made other

than to reference the "residential / tap water" screening levels at the beginning of the discussion on groundwater. It is noted that NMED's comment references the "soil screening levels" and changes have been made to other sections of the report to provide clarification of which soil screening levels are being referenced.

Recent water level readings have been added to Table 2 and the one water level measurement (OAPIS-1), which was included in Table 12, has been moved to Table 2. Table 2 originally included only "historic" water levels, but now contains all water level measurements from nearby wells.

NMED Comment 12

In Table 6 (Groundwater Screening Levels), the Permittee lists analytes and NMED (WQCC Standards, NMED Tap Water) and EPA (EPA Screening Levels Tap Water, MCL) standards. Revise the table to follow the NMED Guidelines and list only the standards which are applicable, not all of the standards. Also, ensure that all of the footnotes are defined.

Response: Footnotes 1, 2, 3, and 4 were inadvertently shown in Table 6 and they have been removed. The format of Table 6 was developed with NMED during the recent submittal of numerous similar investigations reports prepared for the Bloomfield Terminal (former Bloomfield Refinery). Western believes the current format is the most useful and informative to those reading the investigation report. The Gallup Refinery Permit is very prescriptive in the method used to determine the groundwater screening level. There is an explanation included in Section 5 of the investigation report, which references and explains the content of Table 6. Western believes the presentation in Table 6 is important for the reader to understand the selection of the "applicable" screening level for an individual constituent. For example, the current format allows the reader to understand the selection of a particular MCL value where the MCL is lower than the WQCC standard. Similarly, the reader can readily see where an EPA screening level was selected because there is no available WQCC standard or NMED screening level. Without the inclusion of all potentially applicable standards, as currently presented in Table 6, the reader will need to refer to each of the individual sources of potential screening levels to gain the same level of understanding. Western notes that the same full list of all screening levels was inadvertently included in Table 9. Table 9 has been revised to include only the final "applicable" screening level and the associated analytical results.

NMED Comment 13

In Table 7 (Aeration Basin Soil Analytical Results Summary) the Permittee lists "non-residential soil screening level" which encompasses several soil screening standards (industrial, construction worker, etc.). Revise the table to show one non-residential screening level based on the site conceptual model. In addition include units for all standards. See also Comment 9.

Response: The table has been revised based on selection of the construction worker receptor for the non-residential SSL for constituents with NMED soil screening levels. The table has also been revised to include the column showing units on all pages.

NMED Comment 14

Figure 30 (SWMU No. 1 & No. 14 - Metals October 2012 Groundwater Results) depicts metals concentrations in soil borings around the aeration basin and the OAPIS; however, the results are not labeled; only numbers are shown. Figure 31 (SWMU No. 1 & No. 14 - Organics October 2012 Groundwater Results) also does not list the types of organics in the callout box, only results are listed. In the revised Report, provide the analytes and the corresponding results in

the callout boxes in the figures. For all figures, ensure that figures clearly display the analytes and laboratory results.

Response: The order of the analytes is shown in the legend. To avoid any potential confusion, the analyte names (symbols for metals) have been added to the actual posted values on Figures 30 and 31.

NMED Comment 15
In the revised Report, there is no need to provide a hard copy of the laboratory results, submitting laboratory results as electronic files on disc is adequate.

Response: In the revised report, laboratory reports are provided on a disc.

NMED Comment 16
In the Executive Summary and in Section 7.2 (Recommendations), the Permittee discusses potential further investigation to delineate the horizontal extent of contamination at the site. In Section 7.2 (Recommendations), the Permittee states, "[a]n additional soil boring to the north of the Aeration Basin near soil boring SWMU 1-6 could be completed to provide full delineation of both soil and groundwater impacts to the north of the Aeration Basin. Also an additional boring to the southwest of location SWMU 1-37 could provide additional control in this area for potential groundwater impacts. The area between the OAPIS and the Aeration Basin is relatively small and does not warrant additional investigation to determine if there is possible separation of impacts sourced from the two different SWMUs. An additional soil boring could be installed east of the OAPIS near SWMU 1-23 to provide full delineation of soil impacts observed in this area. Additional soil data to the southwest of SWMU 14-6 could be used to better define soil impacts observed in this area of the site." The Permittee must delineate the contamination around the aeration basin in order to complete the site investigation. This information will be used to support the Corrective Measures Evaluation for corrective action at the Aeration Basin.

In order to complete the delineation of potential contamination, the Permittee must submit a work plan proposing to conduct further soil and groundwater investigation in the vicinity of the Aeration Basin. The work plan must be submitted on or before **August 4, 2014.**

Response: A work plan for the additional investigation in the vicinity of the Aeration Basin will be submitted on or before August 4, 2014.

If there are any questions regarding the revised 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 property 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, DR McDaniel for Billy McClain

Mr. Billy McClain
Refinery Manager
Western Refining Southwest, Inc. – Gallup Refinery

cc D. Cobrain NMED HWB without enclosure
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INVESTIGATION REPORT

Solid Waste Management Unit (SWMU) No. 1 Aeration Basin and SWMU No. 14 Old API Separator

Gallup Refinery
Western Refining Southwest, Inc.
Gallup, New Mexico

EPA ID# NMD000333211

Volume 1 of 2
(Report, Tables and Figures)

February 2013
(Revised June 2014)

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List of Acronyms

API	American Petroleum Institute
AOCs	areas of concern
BTEX	benzene, toluene, ethylbenzene, and xylene
bgl	below ground level (bgl)
CFR	Code of Federal Regulations
DRO	diesel range organics
DAF	dilution/attenuation factor
EPA	Environmental Protection Agency
gpm	gallons per minute
HI	hazard index
HSA	hollow-stem auger
IDW	investigation derived waste
LPG	liquefied petroleum gas
LTU	Land Treatment Unit
MADEP	Massachusetts Department of Environmental Protection
MCL	maximum contaminant level
msl	mean sea level
MW	monitoring well
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
RCRA	Resource Conservation and Recovery Act
PID	photoionization detector
PVC	polyvinyl chloride
SPH	separate phase hydrocarbon
SWMUs	Solid Waste Management Units
TPH	total petroleum hydrocarbon
TVOC	total volatile organic content
TCLP	toxicity characteristic leaching procedure
USCS	unified soil classification system
VOC	volatile organic constituent
WQCC	Water Quality Control Commission

Executive Summary

The Gallup Refinery, which is located 17 miles east of Gallup, New Mexico, has been in operation since the 1950s. Past inspections by State and federal environmental inspectors have identified locations where releases to the environment may have occurred. These locations are generally referred to as Solid Waste Management Units (SWMUs) or Areas of Concern (AOCs). Pursuant to the terms and conditions of the refinery's Resource Conservation and Recovery Act (RCRA) Post-Closure Care Permit and 20.4.1.500 New Mexico Administrative Code, this environmental site investigation was completed for SWMU No. 1 (Aeration Basin) and SWMU No. 14 (Old API Separator).

The activities completed include sampling and analysis of soils and groundwater surrounding the Aeration Basin and Old API Separator to determine if there has been a release to the environment and to delineate any such release. In addition, information was collected to help determine the source of groundwater that has been observed in monitoring wells GWM-2 and GWM-3. The investigation began on July 16, 2012 and continued through October 16, 2012. This included the completion of 63 soil borings with 171 soil samples (excluding additional quality assurance samples) collected for analysis of potential site-related constituents (e.g., volatile and semi-volatile organics, total petroleum hydrocarbons, and metals). One of the soil borings (SWMU 14-2) near the Old API Separator was completed as a permanent monitoring well (OAPIS-1) and temporary well completions were installed in 10 additional borings to allow collection of groundwater samples. Twelve groundwater samples (excluding additional quality assurance samples) were collected for analysis of potential site-related constituents (e.g., volatile and semi-volatile organics, total petroleum hydrocarbons, metals, and inorganic/general water quality parameters).

At the Aeration Basin, four organic constituents (1,2,4-trimethylbenzene, 1-methylnaphthalene, benzene, and naphthalene) and diesel range organics (DRO) were detected in three soil samples at concentrations exceeding their respective screening levels developed to ensure protection of potable groundwater. The three impacted soil samples were located at the north and south ends of the Aeration Basin.

There were numerous metals detected at concentrations above residential / tap water screening levels in groundwater samples collected from the soil borings that surround the Aeration Basin. The metal residential / tap water screening levels were exceeded in every soil boring from which

a groundwater sample was collected. It is possible that these results are affected by high turbidity levels in the water samples collected from the temporary well completions installed in the soil borings. Seven organic constituents (1-methylnaphthalene, 2-methylnaphthalene, 1,2,4-trimethlybenzene, benzene, methyl tert-butyl ether (MTBE), naphthalene, and 2,4-dimethylphenol), and DRO were detected in groundwater samples collected from soil borings at concentrations above residential / tap water screening levels. At least one organic constituent was found at concentrations above the residential / tap water screening levels in groundwater at five borings immediately surrounding the Aeration Basin and one boring a short distance to the southwest. Some of the deep soil borings completed near the Aeration Basin were either dry or would not produce enough water to allow completion of all scheduled analyses.

At the Old API Separator (OAPIS), twelve organic constituents [1,1,2-Trichloroethane, 1,2,4-trimethylbenzene, 1,2-dibromo-3-chloropropane, 1,2-dibromoethane (EDB), 1,2-dichloropropane, 1-methylnaphthalene, 2-methylnaphthalene, benzene, ethylbenzene, naphthalene, xylenes, and bis(2-chloroethyl)ether] and DRO were detected in soils at concentrations above their screening levels developed to ensure protection of potable groundwater. 1,2-Dibromo-3-chloropropane was detected in one soil sample and 1,2-dibromoethane (EDB) was detected in four soil samples at concentrations above their residential direct contact soil screening levels. The highest concentrations were found in soil samples collected directly beneath the former location of the OAPIS and at borings immediately adjacent to the OAPIS. In addition, there is an area of elevated concentrations at depths of 8 to 12 feet below ground level (bgl) located near the west end of the former OAPIS extending north towards the location of the former benzene strippers.

Groundwater samples were collected from two soil borings near the OAPIS, one of which was completed as a permanent monitoring well. Similarly as observed above for the temporary well completions around the Aeration Basin, many metals were detected above residential / tap water screening levels in the groundwater samples collected at these locations. The number of metals detected at concentrations above their residential / tap water screening levels in the groundwater sample collected from the permanent well completion (OAPIS-1) was significantly less than the number detected in the groundwater sample collected from the initial temporary well completion in this same soil boring. It is possible that these results are affected by high turbidity levels in the water samples collected from the temporary well completions. Seven organic constituents (benzene, 1-methlynaphthalene, 2-methylnaphthalene, 1,2,4-

trimethlybenzene, methylene chloride, MTBE, and naphthalene) and DRO were detected at concentrations above their residential / tap water screening levels in groundwater samples.

Potential future actions include an additional soil boring to the north of the Aeration Basin to provide full delineation of both soil and groundwater impacts to the north of the Aeration Basin. Also an additional boring to the southwest of the Aeration Basin could provide additional control in this area for potential groundwater impacts. The area between the OAPIS and the Aeration Basin is relatively small and does not warrant additional investigation to determine if there is possible separation of impacts sourced from the two different SWMUs. An additional soil boring could be installed east of the OAPIS to provide full delineation of soil impacts observed in this area. Additional soil data to the southwest of the OAPIS could be used to better define soil impacts observed in this area of the site.

Section 1
Introduction

The Gallup Refinery is located approximately 17 miles east of Gallup, New Mexico along the north side of Interstate Highway I-40 in McKinley County. The physical address is I-40, Exit #39 Jamestown, New Mexico 87347. The Gallup Refinery is located on 810 acres. Figure 1 presents the refinery location.

The Gallup Refinery is a crude oil refinery currently owned and operated by Western Refining Southwest, Inc., formerly known as Giant Industries Arizona, Inc. and formerly doing business as Giant Refining Company Ciniza Refinery, an Arizona corporation. The Gallup Refinery generally processes crude oil from the Four Corners area transported to the facility by pipeline or tanker truck.

Various process units are operated at the facility, including crude distillation, reforming, fluidized catalytic cracking, alkylation, isomerization, sulfur recovery, merox treater, and hydrotreating. Current and past operations have produced gasoline, diesel fuels, jet fuels, kerosene, propane, butane, and residual fuel.

The area of investigation that is the subject of this report is shown on Figure 2 for the Aeration Basin (SWMU No. 1) and Figure 3 for the Old API Separator (SWMU No. 14). The purpose of the site investigation is to determine and evaluate the presence, nature, and extent of releases of contaminants in accordance with 20.4.1.500 New Mexico Administrative Code (NMAC) incorporating 40 Code of Federal Regulations (CFR) Section 264.101. The investigation was completed pursuant to the SWMU No. 1 Investigation Work Plan dated February 2012 (revised June 2012) and the SWMU No. 14 Investigation Work Plan dated January 2010 (revised October 2010), with a few deviations (e.g., installation of additional soil borings), which are discussed in Section 3.1.

Section 2 presents background information for SWMU No. 1 and No. 14, including a review of historical waste management activities to help identity the types of waste handled, sources of releases, and previously known impacts to the environment. Section 3 describes the scope of work completed during the site investigation, including completion of soil borings, installation of a monitoring well, and sample collection. The fourth section of the report explains the results of the field investigation, including the general surface and subsurface conditions and detailed site-

specific information acquired during subsurface investigations. Section 5 explains the regulatory standards that are used for comparison to the analytical results and Section 6 presents the analytical results of soil and groundwater samples analyzed for volatile and semi-volatile organic constituents, total petroleum hydrocarbons (TPH), metals, and inorganic general chemistry constituents. The results of these analyses are compared to applicable State or federal cleanup and screening levels. Section 7 summarizes and provides an evaluation of the potential impacts and provides recommendations for any future actions.

Section 2
Background

This section presents background information for SWMU No. 1 and No. 14, including a review of historical waste management activities for each SWMU to identity the following:

- Type and characteristics of waste and contaminants handled;
- Known and possible sources of impacts;
- History of releases; and
- Known extent of impacts prior to the current investigation.

2.1 SWMU No. 1 Aeration Basin

The Aeration Basin, which is designated as SWMU No. 1 in the facility's RCRA Post-Closure Care Permit, was constructed within original Pond No. 1 in 1987. The location and extent of the Aeration Basin is documented in the Post-Closure Care Permit, Attachments – Post-Closure Permit Application Volume III. The Aeration Basin includes three cells, which were created within original Pond No.1 to facilitate the addition of aeration units to the facility's wastewater treatment. These three cells are identified in the RCRA Permit as Inlet Aeration Basin, Second Aeration Basin and Holding Pond. Subsequently, the first two cells (Inlet Aeration Basin and Second Aeration Basin) have become known as the aeration lagoons or more specifically, AL-1 and AL-2. The third cell (Holding Pond) is now commonly referred to as EP-1, although it is not an evaporation pond and is not part of the area covered by SWMU No. 2 - Evaporation Ponds. Hereafter, the currently used designations of AL-1, AL-2 and EP-1 are used to refer to the three cells of SWMU No. 1 – Aeration Basin (Figure 2).

The aeration lagoons (AL-1 and AL-2) cover an area approximately 275 feet by 150 feet and have an estimated holding capacity of 1 million gallons. EP-1 is approximately 225 feet by 250 feet and has an estimated holding capacity of 3 million gallons. Three benzene air strippers were located between the refinery's API separator and the aeration lagoons to prevent characteristically hazardous waste from being discharged to the aeration lagoons. Monitoring data of the effluent from the two original benzene air strippers, which discharges into the inlet aeration lagoon, and flows into AL-2 has indicated that concentrations of benzene above the toxicity characteristic (TC) regulatory threshold of 0.5 milligrams per liter (mg/l) have entered these impoundments.

2.1.1 Operational History

Prior to construction of the new wastewater treatment plant, the refinery process wastewater generated (approximately 178 gallons per minute (gpm) average flows for calendar year 2011) at the Gallup Refinery was managed first by physical treatment in an API separator, and then the volatile components were removed via benzene air strippers. The final treatment (biological) occurred in two aeration lagoons operated in series (AL-1 and AL-2). Water then flowed to EP-1, before being discharged to the evaporation ponds. The lagoons and EP-1 are earthen surface impoundments with natural clay functioning as a bottom liner. AL-1 and AL-2 are equipped with surface aerators to oxygenate the water and stimulate biological activity.

Wastewater from AL-1, subject to aggressive biological treatment, is routed to AL-2 through an overflow pipe. Flows to the aeration lagoons measured as totalized flow from the API Separator averaged 178 gallons per minute (gpm) for calendar year 2011. Totalizer readings were recorded weekly. Daily average flows were calculated based on elapsed time between readings. Western has installed a real time electronic data system that captures minute by minute flow data.

Western recently completed the construction of a new wastewater treatment plant that replaces the Aeration Basin. In April 2012, wastewater flows from the refinery were redirected to the new wastewater treatment plant. The Aeration Basin continued to receive wastewater from the nearby Pilot Travel Center until June 2013, when all wastewater flows were directed to the new wastewater treatment plant.

2.1.2 Prior Maintenance Activities

Western has experienced intermittent discharges of oil and oily water into the lagoons as documented in previous correspondence to NMED. Most of these occurrences were the result of unit upset/large storm events affecting the old API Separator. Some recent examples are described below:

- A release of oily water from the old API separator and its inlet box occurred on August 3, 2005 with approximately 17 cubic yards of impacted soils excavated from AL-1 and AL-2;
- Approximately 13 cubic yards of impacted soils were excavated from AL-1 and AL-2 after a release of oily water from the old API separator occurred on August 15, 2005;

- On June 15, 2006, Western submitted a letter to NMED requesting a "contained-in" determination regarding soil excavated from AL-1, AL-2 and EP-1 to remediate releases of oily water containing F037/F038, which occurred in the fall of 2005;

- A release of approximately 700-800 gallons of oil from the new API separator (NAPIS) occurred on March 3, 2007 to AL-1, AL-2, and EP-1, which resulted in the collection additional effluent samples at AL-1, AL-2 and EP-1. In July 2007, the impacted bank soils were removed from the aeration lagoons (AL-1 and AL-2), EP-1 and evaporation pond EP-2. NMED stated in their letter of August 15, 2007, that the oily wastewater contained benzene (D018) and F037/F038-listed waste; however, the excavated soils were determined to meet the contained-in criteria and the excavated materials were appropriately disposed off-site pursuant to NMED's direction;

- On June 23, 2007 and July 19, 2007, oily wastewater reported to contain benzene (D018) and F037/F038-listed waste was released from the weir box at the NAPIS. The impacted soils were removed and subsequent analyses demonstrated the soils met the contained-in criteria for management as non-hazardous waste; and

- On August 3, 2008, 756 gallons of oily wastewater was discharged from the NAPIS to the Aeration Basin. The impacted soils were removed and disposed off-site pursuant to NMED's approval.

2.1.3 Historical Site Investigations

Soil sampling was conducted near the aeration lagoons and EP-1 during the RFI in the early 1990s (Giant Refining Company, 1991). Based on the analytical results from the samples, the EPA concurred on January 7, 1994 with Giant's determination that no significant impact had occurred and thus no further action was required for SWMU #1. EPA requested that on-going soil sampling be conducted at the lagoons every two years, which was later reduced to a frequency of five years. The first "monitoring" event was completed in October, 1996 (Giant Refining Company, 1996). Soil samples were collected from depths of four feet to 20 feet below ground surface with some borings angled to allow collection of samples beneath the lagoons. Neither volatile nor semi-volatile organics were detected in 25 of the samples. Two samples collected near the side wall of the inlet aeration lagoon at a depth of four feet had very low concentrations of benzene, toluene, ethylbenzene, and xylenes (BTEX). The highest concentration was 2.2 mg/kg of xylenes.

A visual assessment of the lagoons was conducted in 1998, which concluded that the lagoons were in active service, functioning normally, oxygenating wastewater, and stimulating biological activity (Practical Environmental Services, Inc., 1998). The lagoons were found to have been placed in an appropriate geologic setting in which the underlying bentonitic soils exhibited a very

low hydraulic conductivity of 10^{-7} cm/sec, effectively serving as an aquitard. The noted concentrations of BTEX near the inlet were considered common and predictable for the service.

Two groundwater monitoring wells (GWM-1 and GWM-2) were installed immediately down-gradient of the aeration lagoons in 2004 and 2005, respectively. Analyses of groundwater samples collected at GWM-1 and GWM-2 have indicated only very low concentrations of constituents such as BTEX and MTBE that would indicate a potential for historical releases from the lagoons. GWM-3 is also located nearby, adjacent to EP-1. Both GWM-2 and GWM-3, which were intentionally installed in the vadose zone as dry wells to detect potential leakage from SWMU No. 1, were dry during the 2007 annual sampling event.

In 2008 GWM-1 was sampled on July 10 and results are submitted to NMED annually (Western Refining Annual Ground Water Monitoring Reports). Detections at concentrations greater than established comparison criteria included benzene (0.011 mg/L), MTBE (0.12 mg/L), arsenic (0.070 mg/L), manganese (3.6 mg/L) and iron (14 mg/L). Iron and manganese detections may be indicative of reducing groundwater conditions that could alter inorganic valence states leading to elevated concentrations of iron and manganese in groundwater.

GWM-2 and GWM-3 were checked quarterly in 2008 to determine if any water was present in the wells. Water was first encountered in GWM-2 on February 18, 2008 and a sample was subsequently collected on February 28, 2008 and analyzed for petroleum hydrocarbons and volatile organic compounds (VOCs). The only constituent detected was MTBE at a concentration of 0.028 milligrams per liter. GWM-2 was checked again on March 17, 2008, May 21, 2008, September 10, 2008, and November 3, 2008, but it was found to be dry each time. GWM-3 was also checked on these same dates and found to be dry. Both wells were checked quarterly during 2009 and found to be dry on each occasion.

Water levels continue to be checked quarterly in GWM-2 and GWM-3 and during the second quarterly inspection in 2010 both wells indicated the presence of water. An estimated water column thickness of 1.5 feet and 0.88 feet was measured at GWM-2 and GWM-3, respectively. Water was present in both wells and samples were collected for analysis on a quarterly basis through November 2012. During the first quarterly sampling event in 2013 (March 18, 2013), GWM-3 was found to be dry and water has not been present in the well during subsequent quarterly monitoring events through March 11, 2014. Water was found in GWM-2 until the first quarterly sampling event in 2014. The results of the historical chemical analyses are

summarized in the Table 1 through March 2012. As indicated in the tables, there have been a number of constituents detected in water samples collected from GWM-1, GWM-2, and GWM-3 that are at concentrations above potentially applicable action levels. Water level measurements are also included in Table 2.

An investigation of the aeration lagoons and EP-1 was conducted in April 2008 to characterize the volume and nature of sediments in each lagoon. A copy of the report of the investigation prepared by Trihydro Corporation is included as Appendix A. Based on this investigation, there appears to be two layers of sludge/sediment in the aeration lagoons. The upper layer ("soft sediment") is described as a soft, loose, and unconsolidated, as opposed to the lower layer ("hard pack sediment") that is more compact and dense. In some areas, the distinction between the two layers is indiscernible.

The investigation of EP-1 did not yield a similar distinction of sediment layers. The sediment in EP-1 exhibits similar physical characteristics to the soft sediment found in AL-1 and AL-2. Sixteen sediment depth measurements were made in EP-1, however only 5 measurements resulted in sediment depths greater than 2 feet. The sediment appearance was described as a black sludge with fluid in the upper portion and an increasing silt content moving deeper through the sample

Trihydro used the software program SurvCAD to produce calculations estimating the volumes of sediment in each lagoon and EP-1. Appendix E of the Trihydro Report provides the input parameters used in the program. The SurvCAD program produced the following estimates for sediment in the two lagoons and EP-1.

Estimated Volumes of Sludge in AL-1 and AL-2

Unit	Soft Sediment Thickness Min/Max (ft)	Soft Sediment Avg Thickness (ft)	Estimated Soft Sediment Volume (cy)	Hardpack Sediment Thickness Min/Max (ft)	Hardpack Sediment Avg Thickness (ft)	Estimated Hardpack Sediment Volume (cy)	Total Estimated Sediment Volume (cy)
AL-1	3.2-5.9	4.4	1,464	0-2.5	0.52	229	1,693
AL-2	5.8-8.5	7.47	3,404	0-2.2	0.96	430	3,834

Estimated Volumes of Sludge in EP-1

Unit	Average Sediment Depth (ft)	Maximum Sediment Depth (ft)	Estimated Sediment Volume (cy)
EP-1	1.59	5.04	3,178

Trihydro notes that the observed distinction between the two types of sediment in the aeration lagoons was not as evident as expected and therefore, it is suggested that sediment in the lagoons be considered and treated as a single sediment layer. Additionally, since the measurements and calculations are in-situ calculations, the SurvCAD program applied no allowances for expansion or compaction to the calculated estimates. Removal of the material from the lagoons or exposure to ambient air reducing the percent moisture of the sediment may impact the volume of material. Sample log sheets for each location can be found in the Trihydro Report (Trihydro Corporation, 2008).

2.2 SWMU No. 14 Old API Separator

The Old API Separator was not originally included as a SWMU in the 1988 Hazardous and Solid Waste Act (HSWA) permit or the subsequent 1990 RFI Work Plan. The "API Separator" was first added as a SWMU in the August 2000 Post-Closure Care Permit. There were two API Separators at the refinery as shown in Figure 2.

2.2.1 Operational History

The original separator, now referred to as the Old API Separator (OAPIS) was put into service in 1957. The OAPIS initially only received process wastewater and in 1996 a stormwater sewer system was installed that also flowed to the OAPIS. A new API Separator was put into service in October 2004 and the process wastewater was redirected to the New API Separator. The intention was that only the stormwater sewer system would continue to be directed to the OAPIS.

The API Separator is the first step in the treatment process of the refinery's wastewater. Its purpose is to remove free oil and suspended solids from the wastewater prior to subsequent downstream treatment. An API Separator functions as a gravitational separation unit and is designed based on the difference in specific gravity of the oil to be separated and the wastewater. Three phases result in the separator, with oil at the top, wastewater in the middle and accumulated sediment in the bottom. The oil is constantly removed from the upper layer, wastewater flows through continuously, and the bottom sediment layer is periodically removed to

ensure proper function of the separator. The material accumulating in the bottom of the OAPIS has been routinely removed once a year or more frequently, as necessary.

The OAPIS was approximately 135 feet long, 22 feet wide and six feet high. The unit was mostly below ground level with the southern side being mostly at grade. The land surface slopes away to the north and up to approximately two feet of the separator was above grade in some locations. The unit was constructed on compact clay soils.

2.2.2 Prior Maintenance Activities

After the wastewater flows were diverted to the New API Separator, all residual materials were removed from the OAPIS in October 2004. The material was removed using vacuum trucks and sent off-site for recycling at the NORCO refinery. The OAPIS was steam cleaned and sand blasted in preparation for inspection and repairs. The concrete was patched in numerous locations in both bays and the weir wall down-stream of the pipe skimmer was rebuilt on both bays. Stained soil (approx. 4,500 lbs) identified around the perimeter of the separator was removed and sent off-site for disposal as hazardous waste (K051).

In 2006, Western identified potential "dry weather" flows into the OAPIS and undertook an investigation of the sewer systems to determine if process wastewater was continuing to flow to the OAPIS. Flows from the OAPIS were directed to the New API Separator to ensure any potential process wastewaters entering the OAPIS were appropriately managed. A dye tracer study did not identify any cross-connections between the process wastewater and stormwater sewers. To help reduce the potential for process wastewater to flow to the OAPIS, numerous changes were made to both the stormwater drains and the process sewer drains in the summer of 2006.

The OAPIS was in service until recently to handle stormwater flows but in spite of extensive efforts to eliminate dry weather flows, it appears that some dry weather flow continued to enter the unit until it was taken out of service in February 2011. The discharge from the OAPIS was directed to the New API Separator to ensure appropriate treatment of any dry weather flow that may have entered the OAPIS. A new wastewater treatment plant was recently constructed at the Gallup Refinery and the OAPIS is no longer required, thus its removal from service.

The OAPIS was cleaned out in December 2011 to remove any potentially listed hazardous waste and all non-hazardous waste materials. Demolition of the OAPIS, which was conducted from

June 11, 2012 through June 20, 2012, included removal of the metal components and the concrete containment with the exception of a portion of the southern wall, which was required to remain in-place to maintain the physical integrity of the structures (e.g., the flare knockout tank) located immediately south of the OAPIS.

The nearby benzene strippers were removed from service on November 9, 2012. After they were disconnected from the wastewater treatment plant piping, Strippers #1, #2, and #3 were decontaminated by first removing the packing and then rinsing with water in-place. After decontamination was completed, the strippers were taken to the Bone Yard where they were cut up for disposal. The packing material was placed into supersacks and taken to the 90-day storage area for off-site disposal as a hazardous waste.

2.2.3 Historical Site Investigations

The material handled in the OAPIS has primarily been petroleum hydrocarbons, with a lesser potential for refinery catalyst and gasoline additives to enter the sewer systems. As the solids that accumulate in the bottom of the separator are routinely removed, the greatest potential for a release from the unit would be the liquid phase containing dissolved petroleum hydrocarbons. Liquids could leak from the unit along cracks in the below ground concrete structure or from piping that transfers liquids into and from the unit.

There have not been any documented historical releases from the OAPIS with the aforementioned noted exception of the identification of some surface soils with hydrocarbon stains around the sides of the unit. These stained soils were removed and this limited volume of material did not indicate an obvious significant release.

There had not been an investigation of soils or groundwater in the immediate vicinity of the OAPIS prior to this investigation. There are existing monitoring wells in the general area, with two wells (GMW-1 and GWM-2) located along the down-gradient side of the Aeration Basin and also possibly down-gradient of the OAPIS and four monitoring wells near the New API Separator (NAPIS 1, NAPIS 2, NAPIS 3, and KA-3), which are cross-gradient to the OAPIS (Figure 2). Analyses of groundwater samples collected from these wells are discussed above in Section 2.1.3.

The soil and groundwater samples obtained for this investigation were collected from July 16, 2012 through October 17, 2012. On January 15, 2013, a spill of 70 barrels oily wastewater

occurred onto the ground in the area where OAPIS was located. Western began immediate spill response actions and recovered 69.5 barrels of the spilled wastewater. The spill was limited to a small area within the original footprint of the OAPIS. The soil samples, which had previously been collected from this area, documented significant hydrocarbon impacts in this same area and the relatively dilute wastewater should not have resulted in an increase in concentrations such that the previously collected information would not be a valid representation of current conditions.

Section 3
Scope of Activities

3.1 Soil Boring, Monitoring Well Installation and Sample Collection

Pursuant to the approved Investigation Work Plans, an investigation of soils and groundwater was conducted to determine and evaluate the presence, nature, extent, fate, and transport of contaminants. To accomplish this objective, soil borings and monitoring wells were installed at the Aeration Basin (Figure 2) and the OAPIS (Figure 3).

As outlined in the Investigation Work Plans, there is the potential for constituents to have been released to soils at known locations and therefore a judgmental sampling design was implemented. Examples of these areas include documented spills that affected soils immediately adjacent to the OAPIS.

3.1.1 SWMU No. 1 Aeration Basin

The scope of work for the investigation at the Aeration Basin included approximately 28 shallow (i.e., 2-foot) soil borings spaced 50 feet apart around the perimeter of the Aeration Basin, with each fifth boring extended at least 6 inches below the bottom of the berm material if the berm material is deeper than 24 inches. In addition, eight deep soil borings were to be installed with groundwater samples collected, as possible, from temporary well completions in each deep boring.

Twenty eight shallow soil borings (SWMU 1-9 through SWMU 1- 23, SWMU 1-25 through SWMU 1-36, and SWMU 1-39) were completed and each fifth boring was extended at least 6 inches below the bottom of the berm material where the berm material was deeper than 24 inches (Figure 2). Eight deep soil borings (SWMU 1-1 through SWMU 1-8) were installed around the perimeter as required in the Investigation Work Plan and three additional deep soil borings (SWMU 1-24, SWMU 1-37, and SWMU 1-38) were completed to the southwest and west to facilitate lateral delineation. Based on observations of probable impacts at boring SWMU 1-4, shallow borings SWMU 1-19, SWMU 1-20 (extended deeper), SWMU 1-21, SWMU 1-22, SWMU 1-23, and SWMU 1-39) were shifted to the west to better facilitate lateral delineation on the west side of the Aeration Basin (Figure2). The installation of each boring is discussed in more detail in Section 4.3.

In addition to moving the specific borings discussed above, other deviations from the Investigation Work Plan include the inability to extend some of the shallow borings with a hand auger to the scheduled depth of two feet. The borings are discussed in detail in Section 4.3. Stiff clay with gravel was encountered in these borings, which prevented advancement with a hand auger. An attempt was made to loosen the compacted clay/gravel in advance of the hand auger using a hammer and decontaminated screwdriver, but it was still not possible to reach the target depth of two feet in all hand auger locations.

All eight of the scheduled deep soil borings (SWMU 1-1 through SWMU 1-8) were drilled to the top of bedrock (i.e., the Petrified Forest Formation) and groundwater samples were collected from temporary well completions in all but one of the borings. Soil boring SWMU 1-1 did not yield water and boring SWMU 1-5 yielded only a small quantity of water, which limited the analyses that could be performed (i.e., metals analyses were not conducted at SWMU 1-5). Low water yields affected other temporary wells also, but metals and all other analyses were completed with the exception that only total analyses were completed for the metals. Groundwater samples were also collected from temporary well completions in two of the additional soil borings (SWMU 1-24 and SWMU 1-37).

3.1.2 SWMU No. 14 Old API Separator

The scope of work for the OAPIS included nine soil borings installed to a minimum depth of ten feet and if groundwater was encountered, then a groundwater sample was to be collected from a temporary well completion. One of the soil borings on the north side of the benzene strippers was to be completed as a permanent monitoring well. In addition, soil samples from depths of 0-0.5' and 1.5-2.0' were to be collected from 11 additional locations using a hand auger.

Three of the deep soil borings were not completed as scheduled. One boring that was to be drilled beneath the center of the location of the benzene strippers could not be completed because the benzene strippers were still in operation during the investigation; the strippers have since been removed. Two of the planned deep borings (SWMU 14-5 and SWMU 14-8 located on the north side and northwest corner of the OAPIS) had to be installed with a hand auger instead of the hollow-stem auger (HSA) method due to access limitations with the drilling rig (Figure 3). The location for the permanent well (OAPIS-1) was moved slightly to the south, to a location just off the northwest corner of the benzene strippers. Four additional deep borings (SWMU 14-6, SWMU 14-21, SWMU 14-22, and SWMU 14-23) and one hand auger location

(SWMU14-24) were completed to help delineate the lateral extent to the east, south, and west of the OAPIS.

3.2 Background Information Research

Documents containing the results of previous investigations and subsequent routine groundwater monitoring data from monitoring wells were reviewed to facilitate development of the Investigation Work Plans. The previously collected data provides valuable information on the overall subsurface conditions, including hydrogeology and contaminant distribution within groundwater. The data collected under this investigation supplements the historical groundwater data and provides SWMU-specific information regarding contaminant occurrence and distribution within soils and groundwater.

3.3 Collection and Management of Investigation Derived Waste

Drill cuttings, excess sample material and decontamination fluids, and all other investigation derived waste (IDW) associated with soil borings were contained and characterized using methods based on the boring locations and type of contaminants suspected or encountered. All drill cuttings generated during the investigation at the Aeration Basin and the OAPIS were collected and put into 55-gallon drums. A composite sample of all 10 drums was collected using a decontaminated stainless steel spoon and sent to Hall Environmental Laboratory for waste characterization analysis. The sample was analyzed for Reactivity, Corrosivity, and Ignitability (RCI), RCRA 8 (TCLP) Metals, TCLP Volatiles (Method 1311 / 8260), TCLP Semi-volatiles (Method 1311 / 8270), and Total Petroleum Hydrocarbon (TPH) (Method 8015B). The Hall analytical report (# 1208B78) is indicated in Appendix E.

Based on the analysis, ten non-hazardous/non-regulated drums (2.7 cubic yards) were shipped off-site to Advanced Chemical Treatment Facility for disposal. All purge water and decontamination water was collected in 55-gallon drums and disposed in the refinery wastewater system located upstream of the API Separator.

3.4 Surveys

A hand held GPS receiver was used to record the coordinates of each soil boring. These coordinates were recorded on the field boring logs. The monitoring well location was subsequently surveyed by a registered surveyor.

The horizontal coordinates, the top of the monitoring well casing, and the ground surface at the monitoring well location were determined by a registered New Mexico professional land surveyor in accordance with the State Plane Coordinate System (NMSA 1978 47-1-49-56 (Repl. Pamp. 1993)). The surveys were conducted in accordance with Sections 500.1 through 500.12 of the Regulations and Rules of the Board of Registration for Professional Engineers and Surveyors Minimum Standards for Surveying in New Mexico.

Section 4
Field Investigation Results

This section provides a summary of the surface and subsurface conditions at the refinery, including the area near SWMUs No. 1 and 14. A discussion is included on the installation of soil borings, field screening of soils, and collection of soil samples for analysis. This is followed by a description of the installation of permanent and temporary well completions and the collection of groundwater samples.

4.1 Surface Conditions

A topographic map of the area near the Aeration Basin and OAPIS is included as Figure 4. Local site topographic features include high ground in the southeast gradually decreasing to a lowland fluvial plain the northwest. Elevations on the refinery property range from 7,040 feet to 6,860 feet. The area of the site near the Aeration Basin and the OAPIS is at an approximate elevation of 6,910 feet above mean sea level (msl).

The soils in the immediate vicinity of the Aeration Basin include two soil types. The McKinley County soil survey indicates that the soil type changes near the midline across the aeration lagoons. Surface soils from the northern section of the aeration lagoons and evaporation ponds are primarily Rehobeth silty clay loam (USDA, 2005). Rehobeth soil properties include a pH ranging from 8 to 9 standard units and salinity (naturally occurring) typically measuring up to approximately 8 mmhos/cm. The Rehobeth soils are described as having a geomorphic position *"within flood plains and stream terraces on valley floors."* The parent material is described as "*stream alluvium derived from gypsiferous shale*." The permeability is "*slow*" (0.06 in/hr). The typical profile is as follows:

A (mineral horizon) — 0 to 2 inches; silty clay loam

Bw (B soil horizon, color or structure, but little illuvial accumulation) — 2 to 5 inches; silty clay loam

Bss (B soil horizon, alluvial accumulation) — 5 to 12 inches; clay

Bssny1 (B soil horizon, alluvial accumulation, sodium, gypsum) —12 to 18 inches; clay

Bssny2 (B soil horizon, alluvial accumulation, sodium, gypsum) —18 to 32 inches; clay

Bssny3 (B soil horizon, alluvial accumulation, sodium, gypsum) — 32 to 80 inches; clay

The southern end of the aeration lagoons and the OAPIS are mapped as being constructed within the bordering Simitarq-Celavar sandy loams. Simitarq soils have nearly neutral pH

values ranging from 7.2 to 7.4 standard units. The geomorphic position is described as "*summits on mesas and dipslopes on cuestas*", with a parent material of eolian material and slope alluvium over residuum derived from sandstone. The permeability is described as moderate (0.6 in/hour). The "t*ypical profile" is as follows:*

Oi (organic soil horizon, slightly decomposed)—0 to 1 inches;

A (mineral soil horizon) —1 to 2 inches; sandy loam

Bt (B soil horizon, argillic) — 2 to 11 inches; sandy clay loam

Btk1(B soil horizon, argillic, accumulation of calcium carbonate) — 11 to 27 inches; sandy clay loam

Btk2(B soil horizon, argillic, accumulation of calcium carbonate) —2 7 to 31 inches; sandy clay loam

R (bedrock) — 31 inches; sandstone bedrock

Regional surface water features include the refinery evaporation ponds and several small ponds (one cattle water pond and two small unnamed spring-fed ponds). Average annual rainfall is less than 10 inches per year, thus there are not many natural surface water bodies in this area. The site is located in the Rio Puerco valley, north of the Zuni Uplift with overland flows directed northward to the tributaries of the Rio Puerco river. The Rio Puerco river continues to the east to the confluence with the Rio Grande river. The South Fork of the Rio Puerco river is intermittent and retains flow only during and immediately following precipitation events.

There is very little vegetation throughout the area surrounding the Aeration Basin and OAPIS, with most surfaces composed of nearly bare dirt, gravel, concrete, or asphalt. The area between the refinery and the Rio Puerco River does have limited vegetation.

4.2 Subsurface Conditions

An underground pipeline is present in the western side of the Aeration Basin, which could act as a preferential pathway for contaminant migration to the west; however, it reaches the land surface only a short distance west of the Aeration Basin (Figure 2). Most of the other pipelines near the Aeration Basin and OAPIS are above ground but there are two (inlet and outlet) underground lines buried at a shallow depth near the OAPIS as indicated on Figure 3.

4.2.1 Geology

The shallow subsurface geology consists of fluvial and alluvial deposits comprised of clay and silt with minor inter-bedded sand layers, which overlie mudstone bedrock. These deposits are described in more detail below in descending order.

The Quaternary alluvium, which occurs at the land surface in the area of the Aeration Basin and OAPIS, is mapped regionally as a narrow band trending west-northwest and running just north of I-40 (Figure 5). The Quaternary alluvium is thought to be the parent material of the Rehobeth soils discussed above in Section 4.1. Two cross sections of the shallow subsurface in the immediate vicinity of the Aeration Basin and OAPIS are included as Figures 7 and Figure 8. As shown on the cross sections, the predominant lithology is silty clay with minor amounts of sand in varying proportions. Thin clayey sand lenses up to three to five feet in thickness are observed in the soil borings completed near the Aeration Basin and OAPIS, but the lenses are discontinuous. An isopach map of higher permeable materials (e.g., sand and gravel) was prepared for the sediments that immediately overlie the bedrock to determine if there is a laterally continuous layer of permeable materials present capable of transmitting groundwater and potential contaminants away from the Aeration Basin and/or OAPIS (Figure 9). As shown on the isopach map, there is not a laterally continuous layer of higher permeable materials present on top of the bedrock surface in the immediate vicinity of the Aeration Basin and the OAPIS. This is in contrast to the area further northwest near the Land Treatment Unit (LTU) where a sand layer up to 10 to 15 feet thick has been identified immediately overlying the bedrock (Precision Engineering, 1996). In the area of the LTU, a second sand layer up to 10 feet thick has also been identified, which is separated from the lower sand by a clay layer of 5 to 10 feet in the southern portion of the LTU. As shown on Figure 6 (Cross Section A-A'), these two sand bodies occur at a significantly lower elevation than the thin sand intervals identified near the Aeration Basin and OAPIS and do not appear to be stratigraphically equivalent.

A paleotopographic map, which is based on the current elevation of the top of the bedrock, was prepared to facilitate the evaluation of the deposition of the Quaternary alluvium (Figure 10). The surface of the bedrock slopes to the west and appears to be fairly uniform beneath the Aeration Basin. There is a significant depression of the surface elevation closer to the OAPIS as indicated in boring SWMU 14-1 and a second depressed area, possibly to a lesser extent, near the northwest corner of the Aeration Basin (boring SWMU 1-24). There is no obvious correlation between the surface of the bedrock and the presence of higher permeable materials in the overlying alluvium based on the available information.

Subcropping beneath the Quaternary alluvium is the Triassic Chinle Group, which is most likely the parent material of the Simitarq soils described above in Section 4.1 (Figure 5). The stratigraphy of the Chinle Group was described in detail for the nearby Fort Wingate quadrangle by Lucas et al, 1997. The Painted Desert Member of the Petrified Forest Formation is the

uppermost member of the Chinle Group present in the area of the refinery. The Painted Desert Member is described as reddish-brown and grayish red mudstone with minor beds of resistant, laminated or crossbedded, litharenite. This is consistent with the bedrock encountered at the refinery, as depicted on cross sections A-A', B-B', and C-C' (Figures 6, 7 and 8). Beneath the Painted Desert Member is the Sonsela Member, which is described by Lucas et al (1997) as gray to yellowish-brown, fine-grained to conglomeratic, crossbedded sandstone. The base of the Sonsela Member is recognized as a basin wide unconformity, which was termed the Tr-4 unconformity (Heckert and Lucas, 1996). The Blue Mesa Member, which underlies the Sonsela Member, is the lowest member of the Petrified Forest Formation and the lowest mappable unit shown on cross section A-A' (Figure 6). The Blue Mesa Member is described as mostly purple and greenish-gray mudstone.

4.2.2 Hydrogeology

As discussed above in Section 2.1.3, previous investigations of the occurrence of shallow groundwater near the Aeration Basin identified various groundwater-bearing units where more permeable horizons (e.g., clayey sand/sandy clay) are present within the generally low permeability deposits of the Quaternary alluvium. Generally, the potentiometric surface of the shallow groundwater in monitoring wells at the refinery follows the land surface (Figure 11). The presence of shallow groundwater in the area of the Aeration Basin and OAPIS appears to be associated with fluids managed in these two SWMUs. All of the deeper soil borings immediately surrounding the Aeration Basin encountered saturation or at least moist conditions where more permeable horizons (e.g., clayey sand) were present at elevations at or below the water levels in the Aeration Basin (Figure 7). Saturation was not encountered in similarly permeable soils at elevations above the water levels in the Aeration Basin, nor are any of the measured water levels in the shallow wells above the water levels in the Aeration Basin. Saturation was not encountered in borings (e.g., SWMU 14-1, SWMU 14-6, SWMU 14-7, SWMU 1-20, and SWMU 1-38) located further away from the Aeration Basin and OAPIS, with the exception of boring SWMU 14-23. There was an indication of saturation within a sandy clay interval in SWMU 14-23; however, no water was produced from a temporary well completion installed in the soil boring. In addition, as discussed above in Section 2.1.3, there have been low concentrations of constituents reported in shallow groundwater from samples collected nearby the Aeration Basin and OAPIS that have also been detected in water and sediment samples collected from the Aeration Basin. All of the evidence points to the Aeration Basin in particular as a source of recharge to the discontinuous permeable zones (e.g., clayey sand) that have been identified in

borings adjacent to the Aeration Basin. These saturated intervals produce very little water. Temporary well completions were installed in soil borings SWMU 1-2, SWMU 1-3, SWMU 1-4, SWMU 1-5, SWMU 1-6, SWMU 1-7, SWMU 1-8, SWMU 1-24, and SWMU 14-3. In every case, it was difficult to obtain sufficient volumes of water to complete scheduled sample collection activities and at SWMU 1-5, there was not a sufficient volume of water to allow analyses for all analytes.

The diverse properties and complex, irregular stratigraphy of the Quaternary alluvium across the refinery cause a wide range of hydraulic conductivity ranging from less than 10^{-2} cm/sec for gravel like sands immediately overlying the Painted Desert Formation to 10^{-8} cm/sec in the clay soils located near the surface (Western Refining, 2009). Permeability tests performed on the Quaternary alluvium beneath the nearby LTU indicated an average permeability of 1.9E-05 cm/sec (Appendix C). Permeability tests performed on soils in the area of the firewater pond indicated an average permeability of 1.1E-07 cm/sec (Appendix C).

As described above, the bedrock (i.e., Petrified Forest Formation) is mainly composed of low permeability materials (e.g., mudstone) with the exception of the Sonsela Member and some thinner sandstones within the overlying Painted Desert Member. Yield tests, including slug tests and pumping tests have been performed at the refinery to estimate the hydraulic conductivity of the Painted Desert Member (Appendix C). A slug test performed on July 3, 1984 in well OW-4 indicated a hydraulic conductivity of 4.0E-7 cm/sec. A pump test was performed in well OW-24 on February 20, 1985 and it yielded a hydraulic conductivity of 2.5E-7 cm/sec. The Painted Desert Member appears to be a competent aquitard to reduce the potential for downward migration of contaminants from groundwater that may occur within the overlying Quaternary alluvium.

The Sonsela Member is identified as the uppermost aquifer for RCRA monitoring purposes at the LTU because the overlying groundwater bearing units are not capable of supplying sufficient quantities of groundwater to meet the definitions of an aquifer. Wells completed in a thinner permeable sandstone layer within the Painted Desert Member are also monitored near the LTU as a potential early warning network. The Sonsela's highest point occurs southeast of the site and slopes downward to the northwest as it passes under the refinery. The Sonsela Member forms a water-bearing reservoir with artesian conditions throughout the central and western portions of the refinery property (Western, 2009). Aquifer test of the Sonsela Member conducted northeast of Prewitt indicated a transmissivity of greater than 100 ft^2/day (Stone and others,

1983). Yield tests conducted at the site have shown a much lower hydraulic conductivity of 0.34 ft/day (1.2E-04 cm/sec) (Appendix C).

4.3 Exploratory Drilling Investigations, Soil Sampling and Boring Abandonment

This subsection provides a description of surface and subsurface investigations to locate potential impacts to soils and also the potential for soil impacts to have migrated vertically to the underlying groundwater. This includes soil field screening results, soil sampling intervals and methods for detection of surface and subsurface impacts in soils.

4.3.1 Aeration Basin Soil Investigation

The deeper soil borings (i.e., those scheduled to penetrate deeper than two feet) were drilled using the hollow-stem auger (HSA) method and a general description of the exploratory drilling activities is as follows. The drilling equipment was decontaminated between each borehole, as described in Appendix B. All deep soil borings were drilled to the top of saturation and extended deeper if multiple zones of saturation were encountered to reach the sand layer identified in GWM-1 at a depth of 21.5 feet, which lies on top of the Petrified Forest Formation (i.e., bedrock). All of the originally scheduled deep soil borings (i.e., SWMU 1-1 through SWMU 1-8) and three additional deep borings (SMWU 1-20, SWMU 1-37, and SWMU 1-38) reached the top of bedrock. One additional deep soil boring (SWMU 1-24) did not reach bedrock but was terminated after drilling to a depth of 34 feet with steadily decreasing signs of potential impacts based on field screening and penetrating six feet below the bottom of saturation.

Discrete soil samples were collected for laboratory analyses at the following intervals:

- 0-6" (at soil borings with evidence of significant impacts near the land surface and all hand auger locations);
- 18-24" (at soil borings with evidence of significant impacts near the land surface and all hand auger locations, except where refusal was reached at a shallower depth);
- > 24" (from the interval in each soil boring with the greatest apparent degree of contamination, based on field observations and field screening);
- From a one-foot interval, which lies approximately five feet below the bottom of the Aeration Basin (all deep soil borings);
- From the bottom of each borehole (all soil borings);

- From the 6" interval at the top of saturation (all borings that encountered saturated soils) and
- Many additional soil samples were collected from:
  - zones that are sandy or silty;
  - intervals with apparent impacts based on field screening in addition to the interval with the greatest apparent impacts; and
  - in borings with multiple saturated intervals, soils samples were collected from each discrete saturated interval.

The installation of soil borings and collection of soil samples is discussed below in numerical order for the samples collected near the Aeration Basin. A description of the field screening and soil sampling procedures are presented in Appendix B – Field Methods. Copies of the boring logs are provided in Appendix D. In addition to being included on the soil boring logs, the soil vapor (i.e., headspace) screening results are summarized in Table 3. The locations of the soil borings appear on Figure 2.

SWMU 1-1

On October 5, 2012 the drilling rig was set up on location SWMU 1-1. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Three soil samples were collected from 2 - 4 feet, 10 - 12 feet and 13 - 14 feet bgl. Petroleum hydrocarbon odor and elevated photoionization detector (PID) readings were observed from 2 - 14 feet bgl. Discoloration (i.e., black staining) was observed from 2 - 4 feet bgl.

The lithology encountered consisted of surficial silty clay fill from 0 - 4 feet bgl. There was no recovery in the interval from 4 - 6 feet bgl. Soft, low plastic clay was encountered from 6 - 8 feet bgl. A very stiff, high plastic clay was encountered from 8 - 13 feet bgl. A very dense, dry, gray sandstone (Chinle Group- Painted Desert Member) was encountered from 13 - 14 feet bgl. The sampling terminated at 14 feet bgl. A temporary PVC well was installed with the screened interval ranging from 3 to 8 feet. No groundwater was detected in the temporary well. On October 9, 2012 the well was removed, the borehole was re-reamed and a temporary PVC well was reset with 10 feet of screen set from 2 - 12 feet. No groundwater was detected in the well. The well was pulled and the borehole was grouted on October 11, 2012.

SWMU 1-2

On October 2, 2012 the drilling rig was set up on location SWMU 1-2. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Five soil samples were collected from 6 - 8 feet bgl, 10 - 11 feet bgl, 14 - 16 feet bgl, 17 - 17.25 feet bgl and 19.5 - 20 feet bgl. No odors were evident from 0 - 16 feet bgl. Petroleum hydrocarbon odors were evident from 16 - 19.5 feet bgl. The highest PID reading (7.2 ppm) was observed from 17 - 17.25 feet bgl.

The lithology encountered consisted of surficial silty clay from 0 - 8 feet bgl. There was no recovery in the interval from 8 - 10 feet bgl, (the empty sampling spoon was dripping with water). Saturated, fine grain clayey sand was encountered from 10 - 11.5 feet bgl. Moderate to low plastic clay was encountered from 11.5 - 12 feet bgl. Reddish brown, high plastic, firm clay was encountered from 12 - 14 feet bgl. A saturated, fine grain, clayey sand was encountered from 14 - 16 feet bgl. High plastic, firm, brown clay was encountered from 16 - 19.5 feet bgl. Two saturated, clayey sand seams were observed within the clay at 17 - 17.25 feet bgl and 18.50 - 18.75 feet bgl. A dense, dry, gray/reddish brown mudstone /sandstone (Painted Desert Member of Petrified Forest Formation) was encountered from 19.5 - 20 feet bgl. The sampling terminated at 20 feet bgl. A groundwater sample was collected from within the augers and the borehole was grouted.

SWMU 1-3

On October 2, 2012 the drilling rig was set up on location SWMU 1-3. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Five soil samples were collected from 2 - 4 feet bgl, 10 - 11 feet bgl, 11 - 11.25 feet bgl, 18.5 - 19.25 feet bgl and 19.5 - 20 feet bgl. No petroleum hydrocarbon odors were evident in the samples collected from SWMU 1-3. The highest PID reading (21.3 ppm) was observed from 2 - 4 feet bgl.

The lithology encountered consisted of surficial silty clay from 0 - 11 feet bgl. A saturated, clayey sand seam was encountered from 11 - 11.25 feet bgl. High plastic, firm, reddish brown clay was encountered from 11.25 - 17 feet bgl. A damp to saturated, sandy clay / clayey sand was encountered from 17 - 19.5 feet bgl. A very dense, dry, reddish brown mudstone (Painted Desert Member of Petrified Forest Formation) was encountered from 19.5 - 20 feet bgl. The sampling terminated at 20 feet bgl. A temporary well was installed at this location with the

screened interval ranging from 15 - 20 feet bgl. A groundwater sample was collected on October 3, 2012. The well was pulled and the borehole was grouted.

SWMU 1-4

On October 3, 2012 the drilling rig was set up on location SWMU 1-4. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Five soil samples were collected from 8 - 10 feet bgl, 10 - 12 feet bgl (duplicate), 17 - 18 feet bgl, and 23 - 24 feet bgl. No petroleum hydrocarbon odors were evident in the samples collected from 0 - 14 feet bgl. Petroleum hydrocarbon odors were evident in the samples collected from 16 - 23 feet bgl. The highest PID reading (16.4 ppm) was observed from 17 - 18 feet bgl.

The lithology encountered consisted of surficial silty clay from 0 - 10 feet bgl. A moist to saturated, clayey sand seam was encountered from 10 - 12 feet bgl. Silty clay was encountered from 12 - 14 feet bgl. There was no recovery in the interval from 14 - 16 feet bgl. Silty clay with black staining was encountered from 16 - 17 feet bgl. Moist to saturated sandy clay / clayey sand was encountered from 17 - 20 feet bgl. High plastic, reddish brown clay was encountered from 20 - 23 feet bgl. A dry, reddish brown / gray mudstone (Painted Desert Member of Petrified Forest Formation) was encountered from 23 - 24 feet bgl. The sampling terminated at 24 feet bgl. A temporary well was installed at this location with the screened interval ranging from 16 - 21 feet bgl. A groundwater sample (volatiles and semi-volatiles) was collected on October 4, 2012. A groundwater sample (metals) was collected on October 5, 2012. The well was pulled and the borehole was grouted.

SWMU 1-5

On October 3, 2012 the drilling rig was set up on location SWMU 1-5. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Six soil samples were collected from 10 - 12 feet bgl, 14 - 16 feet bgl, 16 - 18 feet bgl, 24 - 25 feet bgl, 26 - 27 feet bgl and 27 - 28 feet bgl. No petroleum hydrocarbon odors were evident in the samples collected from SWMU 1-5. The highest PID reading (16.1 ppm) was observed from 16 - 18 feet bgl.

The lithology encountered consisted of surficial silty clay from 0 - 10 feet bgl. Clayey sand / silty clay / sandy clay was encountered from 10 - 16 feet bgl. A low plastic, gravelly clay was encountered from 16 - 26 feet bgl. Saturated, clayey sand was encountered from 26 - 27 feet bgl. A very dense, dry, gray, weathered mudstone (Painted Desert Member of Petrified Forest Formation) was encountered from 27 - 28 feet bgl. The sampling terminated at 28 feet bgl. A

temporary well was installed on October 4, 2012 at this location with the screened interval ranging from 23 - 28 feet bgl. A groundwater sample (volatiles and semi-volatiles) was collected on October 5, 2012. The well was pulled and the borehole was grouted.

SWMU 1-6

On October 4, 2012 the drilling rig was set up on location SWMU 1-6. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Six soil samples were collected from 2 - 4 feet bgl (duplicate), 4 - 6 feet bgl, 7.5 - 8 feet bgl, 10 - 11 feet bgl and 11 - 12 feet bgl. No petroleum hydrocarbon odors were evident in the samples collected from SWMU 1-6. The highest PID reading (37.5 ppm) was observed from 2 - 4 feet bgl.

The lithology encountered consisted of surficial silty clay / gravel from 0 - 4 feet bgl. Saturated clayey sand was encountered from 4 - 7.5 feet bgl. Silty clay was encountered from 7.5 - 9 feet bgl. Saturated clayey sand was encountered from 9 - 11 feet bgl. A very dense, dry, reddish brown and gray mudstone (Painted Desert Member of Petrified Forest Formation) was encountered from 11 - 12 feet bgl. The sampling terminated at 12 feet bgl. A temporary well was installed with the screened interval ranging from 7 - 12 feet bgl. A groundwater sample was collected. The well was pulled and the borehole was grouted on October 5, 2012.

SWMU 1-7

On October 4, 2012 the drilling rig was set up on location SWMU 1-7. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Three soil samples were collected from 12 - 14 feet bgl, 14 - 16 feet bgl, and 16 - 18 feet bgl. No petroleum hydrocarbon odors were evident in the samples collected from SWMU 1-7. The highest PID reading (7.6 ppm) was observed from 0 - 2 feet bgl.

The lithology encountered consisted of surficial silty clay from 0 - 12 feet bgl. High plastic clay with saturated clayey sand seams was encountered from 12 - 16 feet bgl. A very dense, dry, reddish brown and gray clay / mudstone (Painted Desert Member of Petrified Forest Formation) was encountered from 16 - 18 feet bgl. The sampling terminated at 18 feet bgl. A temporary well was installed with the screened interval ranging from 13 - 18 feet bgl. A groundwater sample was collected. The well was pulled and the borehole was grouted on October 5, 2012.

SWMU 1-8

On October 5, 2012 the drilling rig was set up on location SWMU 1-8. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Six soil samples were collected from 4 - 6 feet bgl, 10 - 12 feet bgl, 12 - 14 feet bgl, 16 - 18 feet bgl (duplicate) and 19 - 20 feet bgl. Petroleum hydrocarbon odors were evident in the samples collected from 4 - 6 feet bgl and 12 - 19 feet bgl. The highest PID reading (161 ppm) was observed from 12 - 14 feet bgl.

The lithology encountered consisted of surficial silty clay fill from 0 - 4 feet bgl. Saturated clayey sand was encountered from 4 - 6 feet bgl. Silty clay was encountered from 6 - 13 feet bgl. Saturated clayey sand was encountered from 13 - 19 feet bgl. A very dense, dry to damp, reddish brown / gray mudstone (Painted Desert Member of Petrified Forest Formation) was encountered from 19 - 20 feet bgl. The sampling terminated at 20 feet bgl. A temporary well was installed with the screened interval ranging from 13 - 18 feet bgl. A groundwater sample was collected. The well was pulled and the borehole was grouted on October 5, 2012.

SWMU 1-9

On October 15, 2012 location SWMU 1-9 was sampled using a hand auger. The samples were collected from the auger bucket. Two soil samples were collected from 0 - 0.5 feet bgl and 1.5 - 2 feet bgl. Petroleum hydrocarbon odors were not evident in the samples collected from SWMU 1-9. The highest PID reading (7.0 ppm) was observed from 1.5 - 2 feet bgl. The lithology encountered consisted of surficial silty clay / gravel fill from 0 - 0.5 feet bgl. Silty sand fill was encountered from 0.5 - 1.5 feet bgl. The boring was terminated in silty clay encountered from 1.5 - 2 feet bgl. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 1-10

On October 15, 2012 location SWMU 1-10 was sampled using a hand auger. The samples were collected from the auger bucket. Two soil samples were collected from 0 - 0.5 feet bgl and 1.5 - 2 feet bgl. Petroleum hydrocarbon odors were not evident in the samples collected from SWMU 1-10. The highest PID reading (10.1 ppm) was observed from 0 - 0.5 feet bgl. The lithology encountered consisted of surficial silty clay / gravel fill from 0 - 0.5 feet bgl. Silty sand fill was encountered from 0.5 - 2 feet bgl. The boring was terminated at 2 feet bgl. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 1-11

On October 15, 2012 location SWMU 1-11 was sampled using a hand auger. The samples were collected from the auger bucket. Two soil samples were collected from 0 - 0.5 feet bgl and 1.5 - 2 feet bgl. Petroleum hydrocarbon odors were not evident in the samples collected from SWMU 1-11. The highest PID reading (38.9 ppm) was observed from 0 - 0.5 feet bgl. The lithology encountered consisted of surficial silty clay / gravel fill from 0 - 2 feet bgl. The boring was terminated at 2 feet bgl. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 1-12

On October 15, 2012 location SWMU 1-12 was sampled using a hand auger. The samples were collected from the auger bucket. Two soil samples were collected from 0 - 0.5 feet bgl and 0.5 - 1 feet bgl. Petroleum hydrocarbon odors were not evident in the samples collected from SWMU 1-12. The highest PID reading (63 ppm) was observed from 0 - 0.5 feet bgl. The lithology encountered consisted of surficial silty clay / gravel fill from 0 - 1 feet bgl. The boring was terminated at 1 feet bgl due to refusal in gravel. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 1-13

On October 12, 2012 the drilling rig was set up on location SWMU 1-13. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Five soil samples were collected from 0 - 0.5 feet bgl, 1.5 - 2 feet bgl, 2 - 4 feet bgl, and 4 - 6 feet bgl (duplicate). No petroleum hydrocarbon odors were evident in the samples collected from SWMU 1-13. The highest PID reading (35.7 ppm) was observed from 2 - 4 feet bgl. The lithology encountered consisted of surficial silty clay fill from 0 - 6 feet bgl. The borehole was plugged with bentonite chips.

SWMU 1-14

On October 15, 2012 location SWMU 1-14 was sampled using a hand auger. The samples were collected from the auger bucket. Three soil samples were collected from 0 - 0.5 feet bgl and 1.5 - 2 feet bgl (duplicate). Petroleum hydrocarbon odors were not evident in the samples collected from SWMU 1-14. The highest PID reading (5.7 ppm) was observed from 0 - 0.5 feet bgl. The lithology encountered consisted of surficial silty clay / gravel fill from 0 - 1 feet bgl and

clay fill from 1 - 2 feet bgl. The boring was terminated at 2 feet bgl. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 1-15

On October 15, 2012 location SWMU 1-15 was sampled using a hand auger. The samples were collected from the auger bucket. Two soil samples were collected from 0 - 0.5 feet bgl and 1.5 - 2 feet bgl. Petroleum hydrocarbon odors were not evident in the samples collected from SWMU 1-15. The highest PID reading (9.3 ppm) was observed from 1.5 - 2 feet bgl. The lithology encountered consisted of surficial silt / silty clay fill from 0 - 1 feet bgl and clay fill from 1 - 2 feet bgl. The boring was terminated at 2 feet bgl. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 1-16

On October 15, 2012 location SWMU 1-16 was sampled using a hand auger. The samples were collected from the auger bucket. Two soil samples were collected from 0 - 0.5 feet bgl and 1.5 - 2 feet bgl. Petroleum hydrocarbon odors were not evident in the samples collected from SWMU 1-16. The highest PID reading (7.7 ppm) was observed from 0 - 0.5 feet bgl. The lithology encountered consisted of surficial silt / gravel fill from 0 - 1 feet bgl and silty clay / gravel fill from 1 - 2 feet bgl. The boring was terminated at 2 feet bgl. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 1-17

On October 15, 2012 location SWMU 1-17 was sampled using a hand auger. The samples were collected from the auger bucket. Two soil samples were collected from 0 - 0.5 feet bgl and 1 - 1.5 feet bgl. Petroleum hydrocarbon odors were not evident in the samples collected from SWMU 1-17. The highest PID reading (9.5 ppm) was observed from 0 - 0.5 feet bgl. The lithology encountered consisted of surficial silt / gravel fill from 0 - 0.5 feet bgl and silty clay fill from 0.5 - 1.5 feet bgl. The boring was terminated at 1.5 feet bgl due to refusal in gravel. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 1-18

On October 16, 2012 location SWMU 1-18 was sampled using a hand auger. The samples were collected from the auger bucket. Two soil samples were collected from 0 - 0.5 feet bgl and 1 - 1.5 feet bgl. Petroleum hydrocarbon odors were not evident in the samples collected from

SWMU 1-18. The highest PID reading (8.2 ppm) was observed from 0 - 0.5 feet bgl. The lithology encountered consisted of surficial silt / gravel fill from 0 - 0.5 feet bgl and silty clay fill from 0.5 - 1.5 feet bgl. The boring was terminated at 1.5 feet bgl due to refusal in gravel. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 1-19

On October 16, 2012 location SWMU 1-19 was sampled using a hand auger. The samples were collected from the auger bucket. One soil sample was collected from 0 - 0.5 feet bgl. Petroleum hydrocarbon odors were not evident in the samples collected from SWMU 1-19. The PID reading (4.1 ppm) was observed from 0 - 0.5 feet bgl. The lithology encountered consisted of surficial silt from 0 - 0.5 feet bgl. The boring was terminated at 0.5 feet bgl due to refusal in gravel. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 1-20

On October 11, 2012 the drilling rig was set up on location SWMU 1-20, which was an additional location selected west of the Aeration Basin to help define the lateral extent of potential impacts observed in SWMU 1-4. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Five soil samples were collected from 0 - 0.5 feet bgl (duplicate), 1.5 - 2 feet bgl, 4 - 6 feet bgl, and 10 - 12 feet bgl (duplicate). No petroleum hydrocarbon odors were evident in the samples collected from SWMU 1-20. The highest PID reading (21.7 ppm) was observed from 0 - 2 feet bgl. The lithology encountered consisted of silt / silty clay from 0 - 2 feet bgl. Silty clay was encountered from 2 - 10 feet bgl. A very dense, dry to damp, reddish brown mudstone (Painted Desert Member of Petrified Forest Formation) was encountered from 10 - 12 feet bgl. The sampling terminated at 12 feet bgl. The borehole was plugged with bentonite chips.

SWMU 1-21

On October 16, 2012 location SWMU 1-21, which was shifted west of the its original location, was sampled with a hand auger. The samples were collected from the auger bucket. Two soil samples were collected from 0 - 0.5 feet bgl (duplicate). Petroleum hydrocarbon odors were not evident in the samples collected from SWMU 1-21. A PID reading of 1.4 ppm was observed from 0 - 0.5 feet bgl. The lithology encountered consisted of silt from 0 - 0.5 feet bgl. The boring was terminated at 0.5 feet bgl due to refusal in gravel. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 1-22

On October 16, 2012 location SWMU 1-22, which was shifted west of its original location, was sampled using a hand auger. The samples were collected from the auger bucket. Two soil samples were collected from 0 - 0.5 feet bgl and 1.5 - 2 feet bgl. Petroleum hydrocarbon odors were not evident in the samples collected from SWMU 1-22. The highest PID reading (6.8 ppm) was observed from 1.5 - 2 feet bgl. The lithology encountered consisted of silt from 0 - 0.5 feet bgl and silty clay from 0.5 - 2 feet bgl. The boring was terminated at 2 feet bgl. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 1-23

On October 16, 2012 location SWMU 1-23 was sampled using a hand auger. This boring was moved west of its original location due to earlier field indications of potential impacts at SWMU 1-4 and SWMU 1-24. The samples were collected from the auger bucket. One soil sample was collected from 0 - 0.5 feet bgl. Petroleum hydrocarbon odors were not evident in the samples collected from SWMU 1-23. The PID reading (3.7 ppm) was observed from 0 - 0.5 feet bgl. The lithology encountered consisted of silt /gravel from 0 - 0.5 feet bgl. The boring was terminated at 0.5 feet bgl due to refusal in gravel. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 1-24

On October 8, 2012 the drilling rig was set up on location SWMU 1-24. This location was an additional deep boring installed between SWMU 1-4 to the south and SWMU 1-5 to the north to better define potential impacts in this area. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Seven soil samples were collected from 0 - 0.5 feet bgl (duplicate), 1.5 - 2 feet bgl, 10.5 - 11.5 feet bgl, 16 - 18 feet bgl, 24 - 26 feet bgl and 32 - 34 feet bgl. Petroleum hydrocarbon odors were evident in the samples collected from 18 - 32 feet bgl. The highest PID reading (28 ppm) was observed from 16 - 18 feet bgl.

The lithology encountered consisted of surficial silty clay fill from 0 - 16 feet bgl. Damp, clayey sand was encountered within the silty clay at the 10.5 - 11.5 feet bgl interval. Sandy clay / clayey sand was encountered from 16 - 20 feet bgl. Clayey silt was encountered from 20 - 24 feet bgl. The interval from 24 - 28 feet contained clayey silt and sand and was observed to be saturated to very moist. Black discoloration (possible staining from petroleum hydrocarbons) was also observed from 20 to 34 feet bgl. Damp, very dense clayey sand / gravel was

encountered from 30 - 34 feet bgl. The sampling terminated at 34 feet bgl. A temporary well was installed on October 9, 2012 with the screened interval ranging from 16 - 26 feet bgl. A groundwater sample was collected on October 10, 2012. The well was pulled and the borehole was grouted on October 11, 2012.

SWMU 1-25

On October 16, 2012 location SWMU 1-25 was sampled using a hand auger. The samples were collected from the auger bucket. Two soil samples were collected from 0 - 0.5 feet bgl and 0.5 - 1 feet bgl. Petroleum hydrocarbon odors were not evident in the samples collected from SWMU 1-25. The highest PID reading (4.7 ppm) was observed from 0.5 - 1 feet bgl. The lithology encountered consisted of sand / gravel fill from 0 - 1 feet bgl. The boring was terminated at 1 feet bgl due to refusal in gravel. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 1-26

On October 16, 2012 location SWMU 1-26 was sampled using a hand auger. The samples were collected from the auger bucket. One soil sample was collected from 0 - 0.5 feet bgl. Petroleum hydrocarbon odors were not evident in the samples collected from SWMU 1-26. A PID reading of 6.5 ppm was observed from 0 - 0.5 feet bgl. The lithology encountered consisted of silty clay / gravel from 0 - 0.5 feet bgl. The boring was terminated at 0.5 feet bgl due to refusal in gravel. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 1-27

On October 12, 2012 the drilling rig was set up on location SWMU 1-27. This location was originally to be completed with a hand auger, but the drilling rig was used to allow deeper penetration to help define any potential impacts observed in boring SWMU 1-6. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Two soil samples were collected from 0 - 0.5 feet bgl and 1.5 - 2 feet bgl. No petroleum hydrocarbon odors were evident in the samples collected from SWMU 1-27. The highest PID reading (18.2 ppm) was observed from 2 - 4 feet bgl. The lithology encountered consisted of silty clay fill from 0 - 4 feet bgl. The sampling terminated at 4 feet bgl. The borehole was plugged with bentonite chips.

SWMU 1-28

On October 12, 2012 the drilling rig was set up on location SWMU 1-28. This location was originally to be completed with a hand auger, but the drilling rig was used to allow deeper penetration to help define any potential impacts observed in boring SWMU 1-6. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Three soil samples were collected from 0 - 0.5 feet bgl and 1.5 - 2 feet bgl (duplicate). No petroleum hydrocarbon odors were evident in the samples collected from SWMU 1-28. The highest PID reading (4.8 ppm) was observed from 2 - 4 feet bgl. The lithology encountered consisted of silty clay fill from 0 - 2 feet bgl and clayey gravelly sand from 2 - 4 feet bgl. The sampling terminated at 4 feet bgl. The borehole was plugged with bentonite chips.

SWMU 1-29

On October 16, 2012 location SWMU 1-29 was sampled using a hand auger. The samples were collected from the auger bucket. One soil sample was collected from 0 - 0.5 feet bgl. Petroleum hydrocarbon odors were not evident in the samples collected from SWMU 1-29. A PID reading of 3.6 ppm was observed from 0 - 0.5 feet bgl. The lithology encountered consisted of silty clay / gravel from 0 - 0.5 feet bgl. The boring was terminated at 0.5 feet bgl due to refusal in gravel. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 1-30

On October 12, 2012 the drilling rig was set up on location SWMU 1-30. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Three soil samples were collected from 0 - 0.5 feet bgl, 1.5 - 2 feet bgl, and 4 - 6 feet bgl. No petroleum hydrocarbon odors were evident in the samples collected from SWMU 1-30. The highest PID reading (6.7 ppm) was observed from 4 - 6 feet bgl. The lithology encountered consisted of silty clay fill from 0 - 4 feet bgl and clayey sand from 4 - 6 feet bgl. The sampling terminated at 6 feet bgl. The borehole was plugged with bentonite chips.

SWMU 1-31

On October 16, 2012 location SWMU 1-31 was sampled using a hand auger. The samples were collected from the auger bucket. One soil sample was collected from 0 - 0.5 feet bgl. Petroleum hydrocarbon odors were not evident in the samples collected from SWMU 1-31. A PID reading of 3.9 ppm was observed from 0 - 0.5 feet bgl. The lithology encountered consisted

of silty clay / gravel from 0 - 0.5 feet bgl. The boring was terminated at 0.5 feet bgl due to refusal in gravel. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 1-32

On October 16, 2012 location SWMU 1-32 was sampled using a hand auger. The samples were collected from the auger bucket. Two soil samples were collected from 0 - 0.5 feet bgl (duplicate). Petroleum hydrocarbon odors were not evident in the samples collected from SWMU 1-32. A PID reading of 0.7 ppm was observed from 0 - 0.5 feet bgl. The lithology encountered consisted of silty clay / gravel from 0 - 0.5 feet bgl. The boring was terminated at 0.5 feet bgl due to refusal in gravel. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 1-33

On October 16, 2012 location SWMU 1-33 was sampled. Sample collection was accomplished using a hand auger. The samples were collected from the auger bucket. One soil sample was collected from 0 - 0.5 feet bgl. Petroleum hydrocarbon odors were not evident in the samples collected from SWMU 1-33. A PID reading of 3.1 ppm was observed from 0 - 0.5 feet bgl. The lithology encountered consisted of silty clay / gravel from 0 - 0.5 feet bgl. The boring was terminated at 0.5 feet bgl due to refusal in gravel. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 1-34

On October 16, 2012 location SWMU 1-34 was sampled using a hand auger. The samples were collected from the auger bucket. One soil sample was collected from 0 - 0.5 feet bgl. Petroleum hydrocarbon odors were not evident in the samples collected from SWMU 1-34. A PID reading of 3.2 ppm was observed from 0 - 0.5 feet bgl. The lithology encountered consisted of silty clay / gravel from 0 - 0.5 feet bgl. The boring was terminated at 0.5 feet bgl due to refusal in gravel. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 1-35

On October 12, 2012 the drilling rig was set up on location SWMU 1-35. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Three soil samples were collected from 0 - 0.5 feet bgl, 1.5 - 2 feet bgl, and 4 - 6 feet bgl. No petroleum hydrocarbon odors were evident in the samples collected from SWMU 1-35. The highest PID

reading (4.7 ppm) was observed from 2 - 4 feet bgl. The lithology encountered consisted of silty clay fill from 0 - 4 feet bgl and silty clay / clayey silt from 4 - 6 feet bgl. The sampling terminated at 6 feet bgl. The borehole was plugged with bentonite chips.

SWMU 1-36

On October 16, 2012 location SWMU 1-36 was sampled using a hand auger. The sample was collected from the auger bucket. One soil sample was collected from 0 - 0.5 feet bgl. Petroleum hydrocarbon odors were not evident in the samples collected from SWMU 1-36. A PID reading of 1.9 ppm was observed from 0 - 0.5 feet bgl. The lithology encountered consisted of silty clay / gravel from 0 - 0.5 feet bgl. The boring was terminated at 0.5 feet bgl due to refusal in gravel. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 1-37

On October 10, 2012 the drilling rig was set up on location SWMU 1-37. This was an additional deep boring installed southwest of boring SWMU 1-2. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Seven soil samples were collected from 0 - 0.5 feet bgl, 1.5 - 2 feet bgl, 8 - 8.5 feet bgl, 8.5 - 9 feet bgl, 12 - 13 feet bgl, 13 - 14 feet bgl, and 17 - 18 feet bgl. No petroleum hydrocarbon odors were evident in the samples collected from SWMU 1-37. The highest PID reading (16.6 ppm) was observed from 6 - 8 feet bgl.

The lithology encountered consisted of surficial silty clay from 0 - 7 feet bgl. High plastic clay was encountered from 7 - 16 feet bgl. Encountered at 8.5 - 9 feet bgl and 12 - 13 feet bgl were saturated clayey sands. No petroleum hydrocarbon discoloration or odors were associated with these sands. The boring was terminated in a very dense, dry, gray, clay / mudstone (Painted Desert Member of Petrified Forest formation). The sampling terminated at 18 feet bgl. A temporary well was installed with the screened interval ranging from 10 - 15 feet bgl. A groundwater sample was collected on October 11, 2012. The well was pulled and the borehole was grouted on October 11, 2012.

SWMU 1-38

On October 11, 2012 the drilling rig was set up on location SWMU 1-38. This additional location was selected west of SWMU1-4 to help define the lateral extent of any impacts observed in borings SWMU 1-4 and 1-24. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Three soil samples were collected from 0 - 0.5 feet bgl,

1.5 - 2 feet bgl, and 6 - 8 feet bgl. No petroleum hydrocarbon odors were evident in the samples collected from SWMU 1-38. The highest PID reading (11.7 ppm) was observed from 6 - 8 feet bgl. The lithology encountered consisted of silt / silty clay from 0 - 2 feet bgl and silty clay 2 - 6 feet bgl. A very dense, dry, reddish brown / gray, mudstone (Painted Desert Member of Petrified Forest Formation) was encountered from 6 - 8 feet bgl. The sampling terminated at 8 feet bgl. The borehole was plugged with bentonite chips.

SWMU 1-39

On October 16, 2012 location SWMU 1-39 was sampled using a hand auger. The samples were collected from the auger bucket. One soil sample was collected from 0 - 0.5 feet bgl. Petroleum hydrocarbon odors were not evident in the samples collected from SWMU 1-39. The PID reading (4.4 ppm) was observed from 0 - 0.5 feet bgl. The lithology encountered consisted of silt / gravel fill from 0 - 0.5 feet bgl. The boring was terminated at 0.5 feet bgl due to refusal in gravel. Soils not used for laboratory analyses were placed back in the borehole.

4.3.2 Old API Separator

The deeper soil borings (i.e., those scheduled to penetrate deeper than two feet) were drilled using the HAS drilling method and a general description of the exploratory drilling activities is as follows. The drilling equipment was decontaminated between each borehole, as described in Appendix B. All scheduled deep soil borings were drilled to a minimum depth of 10 feet pursuant to the investigation work plan with the exception of locations SWMU 14-5 and SWMU 14-8, which had to be installed with a hand auger due to access limitations. None of the soil borings encountered bedrock near the OAPIS even though the boring at SWMU 14-1 reached a depth of 50 feet bgl. Additional soil borings (SWMU 14-6, SWMU 14-21, SWMU 14-22, SWMU 14-23, and SWMU 14-24) were completed to delineate the lateral extent of potential impacts to the east, south, and west of the OAPIS.

Discrete soil samples were collected for laboratory analysis from the following intervals:

- 0-0.5' (all borings);
- 1.5-2.0' (all borings except SWMU 14-20 where refusal was reached at a depth of 1 foot);
- From the 6" interval at the top of saturation, if encountered;

- A sample from each boring in the interval with the greatest apparent degree of contamination, based on field observations and field screening;
- The 6" interval at the bottom of each boring except SWMU 14-23 where there was no sample recovery in the bottom 4 foot of the boring; however, saturation was encountered in this boring and a sample was collected from the 6" interval at the top of saturation instead pursuant to the investigation work plan; and
- Additional soil samples were collected from:
  - Zones that are sandy or silty; and
  - Intervals with apparent impacts based on field screening in addition to the interval with the greatest apparent impacts

The installation of soil borings and collection of soil samples is discussed below in numerical order for the samples collected near the OAPIS. A description of the field screening and soil sampling procedures are presented in Appendix B – Field Methods. Copies of the boring logs are provided in Appendix D. In addition to being included on the soil boring logs, the soil vapor (i.e., headspace) screening results are summarized in Table 3. The locations of the soil borings appear on Figure 3.

SWMU 14-1

On July 16, 2012 the drilling rig was set up on location SWMU 14-1. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Three soil samples were collected from the following intervals on July 16, 2012; 0 - 0.5 feet bgl, 1.5 - 2 feet bgl, and 10 - 12 feet bgl. Sampling was stopped for the day at 30 feet bgl.

On July 17, 2012 the crew returned to SWMU 14-1. There was no groundwater observed in the borehole. Sampling resumed and an additional sample was collected from the interval 48 - 50 feet bgl. The sampling was terminated at 50 feet bgl.

No petroleum hydrocarbon odors were observed in the soil samples from SWMU 14-1. The highest PID reading (105.9 ppm) was observed from 10 - 12 feet bgl.

The lithology encountered consisted of surficial silty clay from 0 - 8 feet bgl. High plastic clay was encountered from 8 - 12 feet bgl. A low to moderate plastic silty clay was encountered from 12 - 36 feet bgl. A fine grain, poorly cemented, reddish brown sandstone was encountered from 36 - 38 feet bgl. Encountered from 38 to 50 feet bgl was silty clay / clay with low plasticity and very stiff. The borehole was grouted on July 18, 2012.

SWMU 14-2

On July 17, 2012 the drilling rig was set up on location SWMU 14-2. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Six soil samples were collected from 0 - 0.5 feet bgl, 1.5 - 2 feet bgl, 8 - 10 feet bgl (duplicate), 16 - 18 feet bgl, and 24 - 25 feet bgl. Petroleum hydrocarbon odors were evident in the samples collected from 1.5 - 13 feet bgl. Discoloration (black staining) was apparent from 1.5 - 13 feet bgl. The highest PID reading (330 ppm) was observed from 8 - 10 feet bgl.

The lithology encountered consisted of surficial clay / gravel from 0 - 1.5 feet bgl. Moderate plastic clay was encountered from 1.5 - 2 feet bgl. Low plastic, silty clay was encountered from 2 - 13 feet bgl. Moderate plastic, stiff, reddish brown clay was encountered from 13 - 25 feet bgl. A temporary PVC well screen was installed on July 17 and it was replaced with a permanent well completion on July 19, 2012.

SWMU 14-3

On July 18, 2012 the drilling rig was set up on location SWMU 14-3. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Five soil samples were collected from 0 - 0.5 feet bgl, 1.5 - 2 feet bgl, 8 - 10 feet bgl, 12 - 14 feet bgl, and 25.5 - 26 feet bgl. Petroleum hydrocarbon odors were apparent in the samples collected from 2 - 20 feet bgl. Discoloration (black staining) was apparent from 2 - 14 feet bgl. The highest PID reading (343 ppm) was observed from 8 - 10 feet bgl.

The lithology encountered consisted of surficial silty clay from 0 - 14 feet bgl. Moderate plastic clay was encountered from 14 - 24 feet bgl. Groundwater was observed in the sampling spoon from the 14 - 16 feet bgl interval. Low plastic silty clay was encountered from 24 - 26 feet bgl. The sampling was terminated at 26 feet bgl. A groundwater sample was collected from the augers. The borehole was grouted.

SWMU 14-4

On July 17, 2012 the drilling rig was set up on location SWMU 14-4. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Four soil samples were collected from 0 - 0.5 feet bgl, 1.5 - 2 feet bgl, 10 - 12 feet bgl, and 19.5 - 20 feet bgl. Petroleum hydrocarbon odors were apparent in the samples collected from 6 - 14 feet bgl. Discoloration was apparent from 8 - 10 feet bgl. The highest PID reading (711 ppm) was observed from 10 - 12 feet bgl.

The lithology encountered consisted of surficial silty clay from 0 - 14 feet bgl. Moderate plastic clay was encountered from 14 - 20 feet bgl. The sampling was terminated at 20 feet bgl. Groundwater was not observed in this boring.

SWMU 14-5

On July 19, 2012 location SWMU 14-5 was sampled using a hand auger. The samples were collected from the auger bucket. Three soil samples were collected from 0 - 0.5 feet bgl (duplicate) and 1.5 - 2 feet bgl. Petroleum hydrocarbon odors were not evident in the samples collected from SWMU 14-5. The highest PID reading (7.4 ppm) was observed from 1.5 - 2 feet bgl. The lithology encountered consisted of gravel / clay from 0 - 2 feet bgl. The boring was terminated at 2 feet bgl. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 14-6

On October 9, 2012 the drilling rig was set up on location SWMU 14-6. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Four soil samples were collected from 0 - 0.5 feet bgl, 1.5 - 2 feet bgl, 10 - 12 feet bgl, and 17 - 18 feet bgl. Petroleum hydrocarbon odors were apparent in the samples collected from 4 - 14 feet bgl. Discoloration (black staining) was apparent from 4 - 8 feet bgl. The highest PID reading (367 ppm) was observed from 10 - 12 feet bgl.

The lithology encountered consisted of surficial silty clay from 0 - 8 feet bgl. A high plastic clay was encountered from 8 - 18 feet bgl. Sampling was terminated at 18 feet bgl and the borehole was grouted. Groundwater was not observed in this boring.

SWMU 14-7

On July 18, 2012 the drilling rig was set up on location SWMU 14-7. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Four soil samples were collected from 0 - 0.5 feet bgl, 1.5 - 2 feet bgl, 6 - 8 feet bgl, and 23.5 - 24 feet bgl. Petroleum hydrocarbon odors were apparent in the samples collected from 0 - 18 feet bgl. The highest PID reading (935 ppm) was observed from 6 - 8 feet bgl.

The lithology encountered consisted of gravel / clay fill from 0 - 2 feet bgl and then silty clay from 2 - 6 feet bgl. High plastic clay was encountered from 6 - 16 feet bgl. Clayey sand / sandy clay was encountered from 16 - 20 feet bgl. High plastic, very stiff, dry, reddish brown clay was

encountered from 20 to 24 feet bgl. The sampling was terminated at 24 feet bgl and the borehole was grouted. Groundwater was not observed in this boring.

SWMU 14-8

On July 19, 2012 location SWMU 14-8 was sampled using a hand auger. The samples were collected from the auger bucket. Three soil samples were collected from 0 - 0.5 feet bgl and 1.5 - 2 feet bgl (duplicate). Petroleum hydrocarbon odors and discoloration were evident in the samples collected from 0 - 2 feet bgl. The highest PID reading (3,717 ppm) was observed from 1.5 - 2 feet bgl. The lithology encountered consisted of gravel / clay / sand from 0 - 2 feet bgl. The boring was terminated at 2 feet bgl. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 14-9

On July 18, 2012 the drilling rig was set up on location SWMU 14-9. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Five soil samples were collected from 0 - 0.5 feet bgl (duplicate), 1.5 - 2 feet bgl, 4 - 6 feet bgl, and 13 - 14 feet bgl. Petroleum hydrocarbon odors were apparent in the samples collected from 1 - 8 feet bgl. The highest PID reading (1959 ppm) was observed from 4 - 6 feet bgl.

The lithology encountered consisted of silt / gravel / clay fill from 0 - 4 feet bgl. A moderate to low plastic sandy / silty clay was encountered from 4 - 10 feet bgl. High plastic, stiff, brown clay was encountered from 10 - 13 feet bgl. The sampling was terminated at 14 feet bgl in low plastic, stiff, silty clay. The borehole was grouted. Groundwater was not observed in this boring.

SWMU 14-10

On July 19, 2012 location SWMU 14-10 was sampled using a hand auger. The samples were collected from the auger bucket. Two soil samples were collected from 0 - 0.5 feet bgl and 1.5 - 2 feet bgl. No petroleum hydrocarbon odors or discoloration were evident in the samples collected from SWMU 14-10. The highest PID reading (0.4 ppm) was observed from 1.5 - 2 feet bgl. The lithology encountered consisted of gravel / clay fill from 0 - 2 feet bgl. The boring was terminated at 2 feet bgl. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 14-11

On July 19, 2012 location SWMU 14-11 was sampled using a hand auger. The samples were collected from the auger bucket. Two soil samples were collected from 0 - 0.5 feet bgl and 1.5 - 2 feet bgl. No petroleum hydrocarbon odors or discoloration were evident in the samples collected from SWMU 14-11. The highest PID reading (38.5 ppm) was observed from 1.5 - 2 feet bgl. The lithology encountered consisted of gravel / clay fill from 0 - 2 feet bgl. The boring was terminated at 2 feet bgl. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 14-12

On July 19, 2012 location SWMU 14-12 was sampled using a hand auger. The samples were collected from the auger bucket. Two soil samples were collected from 0 - 0.5 feet bgl and 1.5 - 2 feet bgl. Petroleum hydrocarbon odors and discoloration (e.g., black staining) were evident in the samples collected from 0 - 2 feet bgl. The highest PID reading (1,094 ppm) was observed from 1.5 - 2 feet bgl. The lithology encountered consisted of high plastic, soft clay from 0 - 2 feet bgl. The boring was terminated at 2 feet bgl. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 14-13

On July 19, 2012 location SWMU 14-13 was sampled using a hand auger. The samples were collected from the auger bucket. Two soil samples were collected from 0 - 0.5 feet bgl and 1.5 - 2 feet bgl. Petroleum hydrocarbon odors and discoloration (e.g., black staining) were evident in the samples collected from 0 - 2 feet bgl. The highest PID reading (975 ppm) was observed from 1 - 2 feet bgl. The lithology encountered consisted of high plastic, soft clay from 0 - 2 feet bgl with a sand lens present from 0.75 - 1.25 feet bgl. The boring was terminated at 2 feet bgl. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 14-14

On July 19, 2012 location SWMU 14-14 was sampled using a hand auger. The samples were collected from the auger bucket. Two soil samples were collected from 0 - 0.5 feet bgl and 1.5 - 2 feet bgl. Petroleum hydrocarbon odors and discoloration (e.g., black staining) were evident in the samples collected from 0 - 2 feet bgl. The highest PID reading (1,028 ppm) was observed from 1 - 2 feet bgl. The lithology encountered consisted of low plastic, soft clay from

0 - 1 feet bgl and fine grain clayey sand from 1 - 2 feet bgl. The boring was terminated at 2 feet bgl. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 14-15

On July 19, 2012 location SWMU 14-15 was sampled using a hand auger. The samples were collected from the auger bucket. Two soil samples were collected from 0 - 0.5 feet bgl and 1.5 - 2 feet bgl. Petroleum hydrocarbon odors and discoloration (e.g., black staining) were evident in the sample collected from 1 - 2 feet bgl. The highest PID reading (5,000 ppm) was observed from 1 - 2 feet bgl. The lithology encountered consisted of sandy fill from 0 - 1 feet bgl and fine grain clayey sand from 1 - 2 feet bgl. The boring was terminated at 2 feet bgl. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 14-16

On July 19, 2012 location SWMU 14-16 was sampled using a hand auger. The samples were collected from the auger bucket. Two soil samples were collected from 0 - 0.5 feet bgl and 1.5 - 2 feet bgl. Petroleum hydrocarbon odors and discoloration (e.g., black staining) were evident in the sample collected from 1 - 2 feet bgl. The highest PID reading (375.5 ppm) was observed from 1 - 2 feet bgl. The lithology encountered consisted of silt / sand fill from 0 - 1 feet bgl and high plastic clay from 1 - 2 feet bgl. The boring was terminated at 2 feet bgl. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 14-17

On July 19, 2012 location SWMU 14-17 was sampled using a hand auger. The samples were collected from the auger bucket. Two soil samples were collected from 0 - 0.5 feet bgl and 1.5 - 2 feet bgl. Petroleum hydrocarbon odors and discoloration (e.g., black staining) were evident in the sample collected from 1 - 2 feet bgl. The highest PID reading (898 ppm) was observed from 1 - 2 feet bgl. The lithology encountered consisted of silt / clay fill from 0 - 1 feet bgl and high plastic clay from 1 - 2 feet bgl. The boring was terminated at 2 feet bgl. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 14-18

On July 19, 2012 location SWMU 14-18 was sampled using a hand auger. The samples were collected from the auger bucket. Two soil samples were collected from 0 - 0.5 feet bgl and 1.5 - 2 feet bgl. Petroleum hydrocarbon odors and discoloration (e.g., black staining) were

evident in the sample collected from 1 - 2 feet bgl. The highest PID reading (2,537 ppm) was observed from 1 - 2 feet bgl. The lithology encountered consisted of silt / sand / gravel fill from 0 - 1 feet bgl and fine grain clayey sand from 1 - 2 feet bgl. The boring was terminated at 2 feet bgl. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 14-19

On July 19, 2012 location SWMU 14-19 was sampled using a hand auger. The samples were collected from the auger bucket. Two soil samples were collected from 0 - 0.5 feet bgl and 1.5 - 2 feet bgl. No petroleum hydrocarbon odors or discoloration (e.g., black staining) were evident in the samples collected from SWMU 14-19. The highest PID reading (5.1 ppm) was observed from 1 - 2 feet bgl. The lithology encountered consisted of silt / sand / clay fill from 0 - 2 feet bgl. The boring was terminated at 2 feet bgl. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 14-20

On July 19, 2012 location SWMU 14-20 was sampled using a hand auger. The samples were collected from the auger bucket. Two soil samples were collected from 0 - 0.5 feet bgl (duplicate). No petroleum hydrocarbon odors or discoloration were evident in the sample collected from SWMU 14-20. A PID reading of 2.0 ppm was observed from 0 - 0.5 feet bgl. The lithology encountered consisted of very compacted gravel / sand fill. The boring was terminated at 0.5 feet bgl due to refusal. Soils not used for laboratory analyses were placed back in the borehole.

SWMU 14-21

On October 9, 2012 the drilling rig was set up on location SWMU 14-21. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Three soil samples were collected from 0 - 0.5 feet bgl, 1.5 - 2 feet bgl, and 8 - 10 feet bgl. No petroleum hydrocarbon odors or discoloration were evident in the sample collected from SWMU 14-21. The highest PID reading (10.5 ppm) was observed from 0 - 1 feet bgl.

The lithology encountered consisted of low plastic silty clay from 0 - 10 feet bgl. The sampling was terminated at 10 feet bgl and the borehole was grouted. Groundwater was not observed in this boring.

SWMU 14-22

On October 9, 2012 the drilling rig was set up on location SWMU 14-22. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Five soil samples were collected from 0 - 0.5 feet bgl, 1.5 - 2 feet bgl, 4 - 6 feet bgl (duplicate) and 8 - 10 feet bgl. No petroleum hydrocarbon odors or discoloration were evident in the sample collected from SWMU 14-22. The highest PID reading (7.9 ppm) was observed from 4 - 6 feet bgl.

The lithology encountered consisted of low to moderate plastic silty clay from 0 - 10 feet bgl. The sampling was terminated at 10 feet bgl and the borehole was grouted. Groundwater was not observed in this boring.

SWMU 14-23

On October 10, 2012 the drilling rig was set up on location SWMU 14-23. Sample collection was accomplished using the HSA drilling method and split spoon samplers. Four soil samples were collected from 0 - 0.5 feet bgl, 1.5 - 2 feet bgl, 12 - 14 feet bgl, and 14 - 16 feet bgl. Petroleum hydrocarbon odors were apparent in the samples collected from 6 - 18 feet bgl. The highest PID reading (398 ppm) was observed from 12 - 14 feet bgl.

The lithology encountered consisted of silty clay fill from 0 - 6 feet bgl. A clayey silt / sand was encountered from 6 - 8 feet bgl. Moderate plastic, silty clay was encountered from 8 - 10 feet bgl. A high plastic silty clay was encountered from 10 - 16 feet bgl. Moderate plastic, very dense sandy clay was encountered from 16 to18 feet bgl with water observed within the sampling spoon. There was no recovery of the samples collected from 18 - 22 feet bgl. The boring was terminated at 22 feet bgl. A temporary well was installed with the screened interval being set from 15 - 20 feet bgl. The formation did not yield water to the well. The well was pulled on October 11, 2012 and the borehole was grouted.

SWMU 14-24

On October 17, 2012 location SWMU 14-24 was sampled using a hand auger. The samples were collected from the auger bucket. Two soil samples were collected from 0 - 0.5 feet bgl and 1.5 - 2 feet bgl. No petroleum hydrocarbon odors or discoloration were evident in the samples collected from SWMU 14-24. The highest PID reading (4.0 ppm) was observed from 1 - 2 feet bgl. The lithology encountered consisted of a low plastic silty clay. The boring was terminated at 2 feet bgl. Soils not used for laboratory analyses were placed back in the borehole.

4.4 Monitoring Well Construction and Groundwater Sampling

This section describes the methods and details of monitoring well construction and the collection of groundwater samples. The description includes the dates of well construction. The wells and groundwater samples are discussed in numerical order of the associated soil borings. Copies of the boring and well construction logs are provided in Appendix D. The well development and purging procedures and groundwater sample collection procedures are discussed in Appendix B. The locations of the monitoring wells and borings from which groundwater samples were collected appear on Figures 2 and 3.

4.4.1 Aeration Basin

SWMU 1-2

On October 2, 2012 the drilling rig was set up on location SWMU 1-2. The soil boring was drilled using the HSA drilling method. Saturated, fine grain clayey sand was encountered from 10 - 11.5 feet bgl. A saturated, fine grain, clayey sand was encountered from 14 - 16 feet bgl. Two saturated, clayey sand seams were observed within the clay at 17 - 17.25 feet bgl and 18.50 - 18.75 feet bgl. The boring was terminated in dense, dry, gray/reddish brown mudstone /sandstone (Petrified Forest Formation) at 20 feet bgl. A groundwater sample was collected from within the augers and the borehole was grouted.

SWMU 1-3

On October 2, 2012 the drilling rig was set up on location SWMU 1-3. The boring was completed using the HSA drilling method. A saturated, clayey sand seam was encountered from 11 - 11.25 feet bgl. A damp to saturated, sandy clay / clayey sand was encountered from 17 - 19.5 feet bgl. The boring was terminated in very dense, dry, reddish brown mudstone (Petrified Forest Formation) –at a depth of 20 feet bgl. A temporary well screen (two-inch rigid PVC with 0.01 inch slots) was installed at this location with the screened interval ranging from 15 - 20 feet bgl. A groundwater sample was collected on October 3, 2012. The well was pulled and the borehole was grouted.

SWMU 1-4

On October 3, 2012 the drilling rig was set up on location SWMU 1-4. The HSA drilling method was used to drill the soil boring. A moist to saturated, clayey sand seam was encountered from 10 - 12 feet bgl. Moist to saturated sandy clay / clayey sand was encountered from 17 - 20 feet

bgl. The boring was terminated indry, reddish brown / gray mudstone (Petrified Forest Formation) –at a depth of 24 feet bgl. A temporary well screen (two-inch rigid PVC with 0.01 inch slots) was installed at this location with the screened interval ranging from 16 - 21 feet bgl. A groundwater sample (volatiles and semi-volatiles only were collected due to low sample volume) was collected on October 4, 2012. A groundwater sample (metals) was collected on October 5, 2012. The well was pulled and the borehole was grouted.

SWMU 1-5

On October 3, 2012 the drilling rig was set up on location SWMU 1-5. The soil boring was drilled using the HSA drilling method. Saturated, clayey sand was encountered from 26 - 27 feet bgl. The boring was terminated in very dense, dry, gray, weathered mudstone (Petrified Forest Formation) –at a depth of 28 feet bgl. A temporary well screen (two-inch rigid PVC with 0.01 inch slots) was installed on October 4, 2012 at this location with the screened interval ranging from 23 - 28 feet bgl. A groundwater sample (volatiles and semi-volatiles only due to low sample volume) was collected on October 5, 2012. The well was pulled and the borehole was grouted.

SWMU 1-6

On October 4, 2012 the drilling rig was set up on location SWMU 1-6. The boring was completed using the HSA drilling method. Saturated clayey sand was encountered from 4 - 7.5 feet bgl and 9 - 11 feet bgl. The borehole was terminated in very dense, dry, reddish brown and gray mudstone (Petrified Forest Formation) –at a depth of 12 feet bgl. A temporary well screen (two-inch rigid PVC with 0.01 inch slots) was installed with the screened interval ranging from 7 - 12 feet bgl. A groundwater sample was collected. The well was pulled and the borehole was grouted on October 5, 2012.

SWMU 1-7

On October 4, 2012 the drilling rig was set up on location SWMU 1-7. The HSA drilling method was used to drill the soil boring. High plastic clay with saturated clayey sand seams was encountered from 12 - 16 feet bgl. The boring was terminated in very dense, dry, reddish brown and gray clay / mudstone (Petrified Forest Formation) –at a depth of 18 feet bgl. A temporary well screen (two-inch rigid PVC with 0.01 inch slots) was installed with the screened interval ranging from 13 - 18 feet bgl. A groundwater sample was collected. The well was pulled and the borehole was grouted on October 5, 2012.

SWMU 1-8

On October 5, 2012 the drilling rig was set up on location SWMU 1-8. The soil boring was completed using the HSA drilling method. Saturated clayey sand was encountered from 4 - 6 feet bgl and from 13 - 19 feet bgl. The boring was terminated in very dense, dry to damp, reddish brown / gray mudstone (Petrified Forest Formation) –at a depth of 20 feet bgl. A temporary well screen (two-inch rigid PVC with 0.01 inch slots) was installed with the screened interval ranging from 13 - 18 feet bgl. A groundwater sample was collected. The well was pulled and the borehole was grouted on October 5, 2012.

SWMU 1-24

On October 8, 2012 the drilling rig was set up on location SWMU 1-24. This location was an additional deep boring installed between SWMU 1-4 to the south and SWMU 1-5 to the north to better define potential impacts in this area. The boring was completed using the HSA drilling method. Damp, clayey sand was encountered within the silty clay at the 10.5 - 11.5 feet bgl interval. The interval from 24 - 28 feet contained clayey silt and sand and was observed to be saturated to very moist. Damp, very dense clayey sand / gravel was encountered from 30 - 34 feet bgl. The boring terminated at 34 feet bgl. A temporary well screen (two-inch rigid PVC with 0.01 inch slots) was installed on October 9, 2012 with the screened interval ranging from 16 - 26 feet bgl. A groundwater sample was collected on October 10, 2012. The well was pulled and the borehole was grouted on October 11, 2012.

SWMU 1-37

On October 10, 2012 the drilling rig was set up on location SWMU 1-37. This was an additional deep boring installed southwest of boring SWMU1-2. The boring was completed using the HSA drilling method. Encountered at 8.5 - 9 feet bgl and 12 - 13 feet bgl were saturated clayey sands. The boring was terminated in a very dense, dry, gray, clay / mudstone (Petrified Forest Formation) 18 feet bgl. A temporary well screen (two-inch rigid PVC with 0.01 inch slots) was installed with the screened interval ranging from 10 - 15 feet bgl. A groundwater sample was collected on October 11, 2012. The well was pulled and the borehole was grouted on October 11, 2012.

4.4.2 Old API Separator

SWMU 14-2 / OAPIS-1

On July 17, 2012 the drilling rig was set up on location SWMU 14-2. The boring was installed using the HSA drilling method. No damp or saturated intervals were encountered during drilling. A temporary well screen (two-inch rigid PVC with 0.01 inch slots) was installed with the screened interval ranging from 15 - 25 feet bgl. Water slowly entered the temporary well screen and on July 19, 2012 a groundwater sample was collected from the well. The temporary PVC well was pulled on July 19, 2012.

A permanent well was subsequently installed at this location on July 19, 2012. In order to accommodate the screen placement, the borehole was advanced to a depth of 26 feet bgl. Slotted (0.01 inch) 2-inch rigid PVC well screen was placed at the bottom of the boring and extended for 10 feet (16.0 to 26.0 feet) to ensure that the entire saturated zone was open to the monitoring well. The 10/30 sand filter pack was installed to 2.0 feet over the top of the screen. As the sand was installed in the well bore the hollow stem augers were removed. Approximately 14 feet of bentonite was placed over the filter pack and hydrated. The surface completion consists of a stickup completion, which includes a protective PVC casing with cap that was secured in the concrete pad.

SWMU 14-3

On July 18, 2012 the drilling rig was set up on location SWMU 14-3. The boring was installed using the HSA drilling method. Groundwater was observed in the sampling spoon from the 14 - 16 feet bgl interval, while no particular zone of saturation was observed while drilling the boring. The boring was terminated at 26 feet bgl. A groundwater sample was collected from the augers and the borehole was grouted to the surface on the same day.

Section 5
Regulatory Criteria

The applicable screening and potential cleanup levels are specified in NMED's *Risk Assessment Guidance for Site Investigations and Remediation* dated February 2012, updated June 2012 and in the Environmental Protection Agency's (EPA) Regional Screening Levels dated November 2012.

For non-residential properties (e.g., the Gallup Refinery), the soil screening levels must be protective of construction workers throughout the upper ten feet based on NMED criteria. NMED residential soil screening levels are applied to the upper ten feet and soil screening levels for protection of groundwater apply throughout the vadose zone. EPA soil screening levels for direct contact exposure apply to the upper two feet of the vadose zone. To achieve closure as "corrective action complete without controls", the affected media must meet residential screening levels, which are presented in Table 4. Table 5 provides a list of the available NMED and EPA soil screening levels for non-residential properties. While Tables 4 and 5 indicate the various depths to which the individual soil screening levels are applicable, Tables 7 and 8 discussed below does not include this level of detail.

The groundwater cleanup levels are based on New Mexico Water Quality Control Commission (WQCC) standards (20.6.2.7 WW NMAC, 20.6.2.3103, and 20.6.2.4103) unless there is a federal maximum contaminant level (MCL), in which case the lower of the two values is selected as the cleanup level. If neither a WCQQ standard nor an MCL is available, then the cleanup level is based on a NMED Tap Water Screening Level. If a NMED Tap Water Screening Level is not available for a constituent, then an EPA Regional Screening Level is used. If an EPA Regional Screening Level is for a carcinogenic compound, then the screening level is multiplied by 10 to bring the risk level to 1E-05 to be consistent with the NMED screening levels. Table 6 presents the groundwater cleanup levels, with the applicable cleanup level highlighted.

The aforementioned Tables 4 and 5 have soil screening levels for the soil-to-groundwater pathway that are based on a dilution/attenuation factor (DAF) of 1.0 and 461. A review of site conditions indicates that a DAF of 1.0 is overly conservative, thus a site-specific DAF value was calculated. The documentation of the calculation of the site-specific DAF value is provided in Appendix C.

The screening levels that are compared to individual soil sample results from SWMU No. 1 (Aeration Basin) are presented in Table 7 and the soil samples results for SWMU No. 14 (OAPIS) are presented in Table 8. The screening levels included in Table 7 and 8 are based on residential and non-residential land use and include a screening level to evaluate the potential for constituents to migrate to groundwater using a site-specific DAF. For the non-residential screening levels, the construction worker scenario screening levels for each constituent is included in the data tables if NMED screening levels are available. If NMED soil screening levels are not available for a particular constituent, then EPA soils screening levels are used. If an EPA soil screening level is for a carcinogenic compound, then the screening level is multiplied by 10 to bring the risk level to 1E-05 to be consistent with the NMED screening levels. The screening levels in Tables 7 and 8 have not been segregated based on depth of the soil sample as discussed above for Tables 4 and 5. The screening levels that are compared to individual groundwater sample results from SWMU No. 1 (Aeration Basin) are presented in Table 9 and the groundwater samples results for SWMU No. 14 (OAPIS) are presented in Table 10. It should also be noted that the soil sample results for chromium are compared to the screening levels for both chromium III and VI, as speciation has not been conducted to determine if the detected chromium is chromium III or chromium VI.

A review of the NMED guidelines for TPH indicates that the TPH screening levels were developed based on screening levels and compositional assumptions developed by the Massachusetts Department of Environmental Protection (MADEP). The analytical results, as presented in Tables 7 and 8, are reported for gasoline range organics (C6-C10), diesel range organics (>C10-C28), and motor oil range organics (>C28-C35). The applicable TPH screening levels for comparison to the individual samples are selected from Table 6-2 of the NMED guidance.

There are no soil screening levels for gasoline range organics and the individual compounds listed for groundwater (gasoline range criteria) are included in the list of analytes used for site samples. As there could have been a variety of petroleum types (e.g., crude oil or various refined products) going to the OAPIS and Aeration Basin, the screening level for "unknown oil" was selected for comparison to the diesel range soil and groundwater analytical results.

The laboratory analyses for motor oil range organics only report results for >C28 to C35. Since the motor oil range results only include hydrocarbons greater than C28, it is not appropriate to compare the results against screening levels for product types that have lower hydrocarbon

ranges (e.g., diesel fuel – 60% C11-C22 aromatics and 40% C9-C18 aliphatics). The only product type in Table 6-2 that contains the >C28-C35 carbon range is "waste oil", which includes C19-C36. Therefore, the motor oil range organic soil analytical results are compared to the "waste oil" soil screening levels. The NMED guidance specifies the inclusion of "petroleum-related contaminants" as the groundwater criteria for waste oil instead of a motor oil range screening level and these constituents are included in the list of reported analytes in Tables 9 and 10.

Some of the individual constituents reported by the laboratory do not have screening levels but were all non-detect with respect to soil, except 4-isopropyltoluene, 4-nitrophenol, 3+4-methylphenol, and sec-butylbenzene. With respect to groundwater, there were also detections of constituents that do not have screening levels. The constituents detected in groundwater that do not have screening levels include, 4-isopropyltoluene, 3+4-methylphenol, 2-nitrophenol, 4-nitrophenol, sec-butylbenzene. None of these 10 constituents are classified as a carcinogen.

Section 6
Site Impacts

This section discusses the chemical analyses performed and presents the analytical results that were obtained through the analysis of soil and groundwater samples, which were collected at the Aeration Basin and OAPIS. The results for soils and groundwater analyses are presented and compared to applicable screening levels, as described in Section 5.0.

6.1 Soil Analytical Results

Soil samples were analyzed by Hall Environmental Analysis Laboratory in Albuquerque, New Mexico using the following methods for organic constituents:

- SW-846 Method 8260 volatile organic compounds;
- SW-846 Method 8270 semi-volatile organic compounds; and
- SW-846 Method 8015B gasoline, diesel, and motor oil range petroleum hydrocarbons.

Soil samples were analyzed for the following metals using the indicated analytical methods, respectively.

Analyte	Analytical Method
Antimony	SW-846 method 6010
Arsenic	SW-846 method 6010
Barium	SW-846 method 6010
Beryllium	SW-846 method 6010
Cadmium	SW-846 method 6010
Chromium	SW-846 method 6010
Cobalt	SW-846 method 6010
Cyanide	SW-846 method 335.3/335.2 mod
Iron	SW-846 method 6010
Lead	SW-846 method 6010
Mercury	SW-846 method 7470/7471
Manganese	SW-846 method 6010
Nickel	SW-846 method 6010
Selenium	SW-846 method 6010
Silver	SW-846 method 6010
Vanadium	SW-846 method 6010
Zinc	SW-846 method 6010

The analytical results for soil samples collected at the Aeration Basin are summarized in Table 7 and the results for soils collected at the OAPIS are summarized in Table 8. The individual results that exceed the applicable cleanup levels are highlighted, as noted in the table footnotes. Maps showing the distribution of constituents detected in soils above the lowest applicable screening levels are included as Figures 12 – 29. The concentrations shown on Figures 12 – 29 that exceed the screening levels in Tables 7 and 8 are underlined on the figures [i.e., concentrations above residential and/or DAF (461) screening levels]. The laboratory analytical reports are included in Appendix E and the data validation of the results, which includes the analytical results for the associated QA/QC samples, is included in Appendix F.

The constituents that have concentrations in soils above screening levels as measured in samples collected from within either the Aeration Basin or the OAPIS are discussed below. The results for the Aeration Basin are presented first, followed by the results for the OAPIS.

6.1.1 Aeration Basin Soil Results

1,2,4-Trimethlybenzene was detected in one sample [SWMU 1-1 (2-4')] at a concentration above the DAF screening level (9.68 mg/kg) but none of the results exceed the residential screening level (62 mg/kg). The detected concentrations range from 0.00104 mg/kg to 44 mg/kg and are shown on Figure 12.

1-Methylnaphthalene was detected in two soil samples [SWMU 1-1 (2 - 4') and SWMU 1-1 (10 - 12')] at concentrations above the DAF screening level of 2.35 mg/kg. The detected concentrations range from 0.0456 to 35 mg/kg and do not exceed either the residential or non-residential (i.e., construction worker) screening levels. The analytical results are shown on Figure 13.

Benzene was detected in two soil samples [SWMU 1-1 (2 - 4') and SWMU 1-28 (1.5 - 2.0')] at concentrations above the DAF screening level (0.796 mg/kg) but none of the results exceed the residential or non-residential soil screening levels. The detected concentrations range from 0.00109 mg/kg to 3.2 mg/kg and are presented on Figure 14.

Naphthalene was detected in one sample [SWMU 1-1 (2 - 4')] at a concentration of 13 mg/kg, which exceeds the DAF screening level of 1.64 mg/kg, but does not exceed the residential or non-residential screening levels. The naphthalene concentrations are shown on Figure 15.

Diesel Range Organics (DRO) was detected in one sample [SWMU 1-1 (2 - 4')] at a concentration of 4,700 mg/kg, which exceeds the screening level of 1,000 mg/kg. The detected results ranged from 12 to 4,700 mg/kg and are shown on Figure 16.

6.1.2 Old API Separator Soil Results

1,1,2-Trichloroethane was detected in one sample [SWMU 14-17 (1.5 – 2')] at a concentration (1.0 mg/kg), which exceeds the DAF screening level (0.0514 mg/kg) but did not exceed the residential or non-residential screening levels. The 1,1,2-trichloroethane analytical results are shown on Figure 17.

1,2,4-Trimethlybenzene was detected in eight samples [SWMU 14-6 (10 - 12'), SWMU 14-7 (6 - 8'), SWMU 14-12 (0 - 0.5'), SWMU 14-12 (1.5 – 2.0'), SWMU 14-14 (0 - 0.5'), SWMU 14-15 (1.5 – 2.0'), SWMU 14-17 (1.5 – 2.0'), and SWMU 14-18 (1.5 – 2.0')] at concentrations above the DAF screening level (9.68 mg/kg) but none exceed the residential or non-residential screening levels. The detected concentrations range from 0.000507 mg/kg to 44 mg/kg and are shown on Figure 18.

1,2-Dibromo-3-chloropropane was detected in three samples [SWMU 14-7 (0 - 0.5'), SWMU 14-7 (1.5 – 2.0'), and SWMU 14-12 (0 – 0.5')] at concentrations above the residential and DAF screening levels in one sample but only above the DAF screening level in two of the samples. The detected concentrations range from 0.000593 mg/kg to 2.2 mg/kg and are shown on Figure 19.

1,2-Dibromoethane (EDB) was detected in 18 samples [SWMU 14-2 (1.5 – 2.0'), SWMU 14-2 (8 - 10'), SWMU 14-3 (12 - 14'), SWMU 14-3 (8 - 10'), SWMU 14-4 (10 - 12'), SWMU 14-7 (0 - .5'), SWMU 14-7 (6 - 8'), SWMU 14-8 (1.5 -2.0'), SWMU 14-9 (4 - 6'), SWMU 14-12 (0 - 0.5'), SWMU 14-12 (1.5 – 2.0'), SWMU 14-13 (0 - 0.5'), SWMU 14-13 (1.5 – 2.0'), SWMU 14-14 (0 - 0.5'), SWMU 14-14 (1.5 – 2.0'), SWMU 14-16 (1.5 – 2.0'), SWMU 14-17 (1.5 – 2.0'), and SWMU 14-18 (1.5 – 2.0')] at concentrations above the DAF screening level (0.0071 mg/kg) with three sample results above the residential screening level. The detected concentrations range from 0.12 mg/kg to 1.2 mg/kg and are shown on Figure 20.

1,2-Dichloropropane was detected in two samples [SWMU 14-12 (0 – 0.5') and SWMU14-18 (1.5 – 2.0')] at concentrations above the DAF screening level (0.494 mg/kg) but none exceed

the residential or non-residential screening levels. The detected concentrations range from 0.089 mg/kg to 0.82 mg/kg and are shown on Figure 21.

1-Methylnaphthalene was detected in 18 samples [SWMU 14-2 (1.5 – 2.0'), SWMU 14-2 (8 -10'), SWMU 14-3 (12 - 14'), SWMU 14-3 (8 - 10'), SWMU 14-4 (10 - 12'), SWMU 14-6 (10 - 12'), SWMU 14-7 (6 - 8'), SWMU 14-9 (4 - 6'), SWMU 14-12 (0 - 0.5'), SWMU 14-12 (1.5 - 2.0'), SWMU 14-13 (0 - 0.5'), SWMU 14-13 (1.5 – 2.0'), SWMU 14-14 (0 - 0.5'), SWMU 14-14 (1.5 - 2.0'), SWMU 14-15 (1.5 - 2.0'), SWMU 14-16 (1.5 – 2.0'), SWMU 14-17 (1.5 – 2.0'), and SWMU 14-18 (1.5 -2.0')] at concentrations above the DAF screening level (2.35 mg/kg), but none exceed the non-residential or residential screening levels. The detected concentrations range from 0.000458 mg/kg to 45 mg/kg and are shown on Figure 22.

2-Methylnaphthalene was detected in one sample [SWMU 14-4 (10 – 12')] at a concentration of 90.0 mg/kg, which exceeds the DAF screening level (64.5 mg/kg) but did not exceed the residential or non-residential screening levels. The 2-methylnaphthalene analytical results are shown on Figure 23.

Benzene was detected in nine samples [SWMU 14-6 (10 - 12'), SWMU 14-7 (6-8'), SWMU 14-12 (0 - 0.5'), SWMU 14-12 (1.5 – 2.0'), SWMU 14-14 (1.5 – 2.0'), SWMU 14-15 (1.5 - 2.0'), SWMU 14-17 (1.5 – 2.0'), SWMU 14-18 (1.5 – 2.0'), and SWMU 14-23 (12 - 14')] at concentrations above the DAF screening level (0.796 mg/kg), but none exceed the non-residential or residential screening levels. The detected concentrations range from 0.00072 mg/kg to 5.9 mg/kg and are shown on Figure 24.

Ethylbenzene was detected in six samples [SWMU 14-6 (10 - 12'), SWMU 14-12 (0 - 0.5'), SWMU 14-12 (1.5 – 2.0'), SWMU 14-15 (1.5 - 2.0'), SWMU 14-17 (1.5 – 2.0'), and SWMU 14-18 (1.5 – 2.0')] at concentrations above the DAF screening level (5.98 mg/kg), but none exceed the non-residential or residential screening levels. The detected concentrations range from 0.000542 mg/kg to 23 mg/kg and are shown on Figure 25.

Naphthalene was detected in 14 samples [SWMU 14-2 (8 - 10'), SWMU 14-3 (12 - 14'), SWMU 14-3 (8 - 10'), SWMU 14-4 (10 - 12'), SWMU 14-6 (10 - 12'), SWMU 14-7 (6 - 8'), SWMU 14-12 (0 - 0.5'), SWMU 14-12 (1.5 – 2.0'), SWMU 14-13 (0 - 0.5'), SWMU 14-14 (0 - 0.5'), SWMU 14-15 (1.5 - 2.0'), SWMU 14-16 (1.5 – 2.0'), SWMU 14-17 (1.5 – 2.0'), and SWMU 14-18 (1.5 - 2.0')] at concentrations above the DAF screening level (1.64 mg/kg), but none exceed the

non-residential or residential screening levels. The detected concentrations range from 0.000458 mg/kg to 17 mg/kg and are shown on Figure 26.

Xylenes were detected in two samples [SWMU 14-12 (0 - 0.5'), and SWMU 14-15 (1.5 - 2.0')] at concentrations above the DAF screening level (72.1 mg/kg), but none exceed the non-residential or residential screening levels. The detected concentrations range from 0.00282 mg/kg to120 mg/kg and are shown on Figure 27.

Bis(2-chloroethyl)ether was detected in two samples [SWMU 14-9 (4 - 6') and SWMU 14-15 (1.5 - 2.0')] at concentrations above the DAF screening level (0.0121 mg/kg), but none exceed the non-residential or residential screening levels. The detected concentrations range from 0.18 mg/kg to 0.43 mg/kg and are shown on Figure 28.

DRO was detected in 21 samples [SWMU 14-2 (1.5 – 2.0'), SWMU 14-2 (8 - 10'), SWMU 14-3 (8 - 10'), SWMU 14-6 (10 - 12'), SWMU 14-7 (0 - 0.5'), SWMU 14-7 (1.5 – 2.0'), SWMU 14-8 (1.5 – 2.0'), SWMU 14-9 (1.5 – 2.0'), SWMU 14-9 (4 - 6'), SWMU 14-12 (0 - 0.5'), SWMU 14-12 (1.5 – 2.0'), SWMU 14-13 (1.5 – 2.0'), SWMU 14-14 (0 - 0.5'), SWMU 14-14 (1.5 – 2.0'), SWMU 14-15 (0 - 0.5'), SWMU 14-15 (1.5 - 2.0'), SWMU 14-16 (1.5 – 2'), SWMU 14-7 (0 - 0.5'), SWMU 14-17 (1.5 – 2.0'), SWMU 14-18 (0 - 0.5'), and SWMU 14-18 (1.5 – 2.0')] at concentrations above the screening level (1,000 mg/kg). The detected concentrations range from 19 mg/kg to 15,000 mg/kg and are shown on Figure 29.

6.2 Groundwater Analytical Results

The groundwater samples were analyzed for organic constituents by the following methods:

- SW-846 Method 8260 volatile organic compounds;
- SW-846 Method 8270 semi-volatile organic compounds; and
- SW-846 Method 8015B gasoline, diesel, and motor oil range organics.

Groundwater samples were analyzed for the following metals using the indicated analytical methods.

Analyte	Analytical Method
Antimony	SW-846 method 200.8
Arsenic	SW-846 method 200.8
Barium	SW-846 method 200.7
Beryllium	SW-846 method 200.7
Cadmium	SW-846 method 200.7

Analyte	Analytical Method
Chromium	SW-846 method 200.7
Cobalt	SW-846 method 200.7
Cyanide	SW*--846 method 335.3/335.2 mod
Lead	SW-846 method 200.8
Mercury	SW-846 method 200.7
Nickel	SW-846 method 200.7
Selenium	SW-846 method 200.8
Silver	SW-846 method 200.7
Vanadium	SW-846 method 200.7
Zinc	SW-846 method 200.7

In addition, groundwater samples were analyzed for chloride, fluoride, and sulfate using EPA method 300.

The analytical results and the applicable cleanup levels are presented in Tables 9 and 10. The individual results that exceed the applicable cleanup levels are highlighted. Maps depicting the distribution of the various constituents detected in groundwater samples above the screening levels are provided in Figures 30 and 31. The concentrations shown on Figures 30 and 31 that exceed the screening levels are underlined on the figures. The results for the associated QA/QC samples and the data validation are provided in Appendix F. The laboratory analytical reports are included in Appendix E.

6.2.1 Aeration Basin Groundwater Results

All of the groundwater samples collected at the Aeration Basin were collected from temporary well completions and there are numerous metals detected at concentrations above their respective screening levels. Arsenic was detected above the screening level of 0.01 mg/l in seven samples (SWMU 1-2 GW, SWMU 1-3 GW, SWMU 1-4 GW, SWMU 1-6 GW, SWMU 1-7 GW, SWMU 1-8 GW, and SWMU 1-24 GW). The detected concentrations range from 0.0082 mg/l to 0.063 mg/l and are shown on Figure 30.

Barium was detected above the screening level of 1.0 mg/l in six samples (SWMU 1-2 GW, SWMU 1-4 GW, SWMU 1-6 GW, SWMU 1-7 GW, SWMU 1-8 GW, and SWMU 1-24 GW). The detected concentrations range from 0.24 mg/l to 56 mg/l and are shown on Figure 30.

Beryllium was detected above the screening level of 0.004 mg/l in six samples (SWMU 1-2 GW, SWMU 1-3 GW, SWMU 1-6 GW, SWMU 1-7 GW, SWMU 1-8 GW, and SWMU 1-24 GW). The detected concentrations range from 0.0065 mg/l to 0.21 mg/l.

Chromium (total) was detected above the screening level of 0.05 mg/l in five samples (SWMU 1-2 GW, SWMU 1-6 GW, SWMU 1-7 GW, SWMU 1-8 GW, and SWMU 1-24 GW). The detected concentrations range from 0.015 mg/l to 0.31 mg/l.

Cobalt was detected above the screening level of 0.05 mg/l in five samples (SWMU 1-2 GW, SWMU 1-6 GW, SWMU 1-7 GW, SWMU 1-8 GW, and SWMU 1-24 GW). The detected concentrations range from 0.011 mg/l to 0.53 mg/l.

Iron (total) was detected above the screening level of 1.0 mg/l in seven samples (SWMU 1-2 GW, SWMU 1-3 GW, SWMU 1-6 GW, SWMU 1-7 GW, SWMU 1-8 GW, SWMU 1-24 GW, and SWMU 1-37 GW). The detected concentrations range from 0.32 mg/l to 160 mg/l.

Lead was detected above the screening level of 0.015 mg/l in six samples (SWMU 1-2 GW, SWMU 1-3 GW, SWMU 1-6 GW, SWMU 1-7 GW, SWMU 1-8 GW, and SWMU 1-24 GW). The detected concentrations range from 0.0041 mg/l to 1.7 mg/l and are shown on Figure 30.

Manganese was detected above the screening level of 0.2 mg/l in seven samples (SWMU 1-2 GW, SWMU 1-3 GW, SWMU 1-4 GW, SWMU 1-6 GW, SWMU 1-7 GW, SWMU 1-8 GW, SWMU 1-24 GW, and SWMU 1-37 GW). The detected concentrations range from 0.99 mg/l to 95 mg/l and are shown on Figure 30.

Nickel was detected above the screening level of 0.2 mg/l in six samples (SWMU 1-2 GW, SWMU 1-3 GW, SWMU 1-6 GW, SWMU 1-7 GW, SWMU 1-24 GW, and SWMU 1-37 GW). The detected concentrations range from 0.11 mg/l to 0.95 mg/l and are shown on Figure 30.

Selenium was detected above the screening level of 0.05 mg/l in one sample (SWMU 1-2 GW). The detected concentrations range from 0.0072 mg/l to 0.059 mg/l.

Vanadium was detected above the screening level of 0.183 mg/l in one sample (SWMU 1-24 GW). Only the one sample had a detected concentration of 0.2 mg/l.

Fluoride was detected above the screening level of 1.6 mg/l in four samples (SWMU 1-2 GW, SWMU 1-4 GW, SWMU 1-6 GW, and SWMU 1-24 GW). The detected concentrations range from 0.78 mg/l to 13 mg/l.

1,2,4-Trimethylbenzene was detected above the screening level of 0.015 mg/l in one sample (SWMU 1-4 GW). The detected concentrations range from 0.0069 mg/l to 0.032 mg/l and are shown on Figure 31.

1-Methylnaphthalene was detected above the screening level of 0.0097 mg/l in three samples (SWMU 1-4 GW, SWMU 1-8 GW and SWMU 1-24). The detected concentrations range from 0.0098 mg/l to 0.011 mg/l and are shown on Figure 31.

Benzene was detected above the screening level of 0.005 mg/l in three samples (SWMU 1-2 GW, SWMU 1-4 GW, and SWMU 1-24 GW). The detected concentrations range from 0.0011 mg/l to 0.024 mg/l and are shown on Figure 31.

Methyl tert-butyl ether (MTBE) was detected above the screening level of 0.125 mg/l in two samples (SWMU 1-8 GW and SWMU 1-37 GW). The detected concentrations range from 0.014 mg/l to 0.31 mg/l and are shown on Figure 31.

Naphthalene was detected above the screening level of 0.00143 mg/l in three samples (SWMU 1-4 GW, SWMU 1-8 GW, and SWMU 1-24 GW). The detected concentrations range from 0.0023 mg/l to 0.032 mg/l and are shown on Figure 31.

2,4-Dimethylphenol was detected above the screening level of 0.73 mg/l in one sample (SWMU 1-4 GW). The detected concentrations range from 0.026 mg/l to 0.85 mg/l and are shown on Figure 31.

DRO was detected above the screening level of 0.2 mg/l in four samples (SWMU 1-4 GW, SWMU 1-6 GW, SWMU 1-24 GW, and SWMU 1-37 GW). The detected concentrations range from 1.0 mg/l to 4.4 mg/l and the results are shown on Figure 31.

6.2.2 Old API Separator Groundwater Results

Two of the groundwater samples (SWMU 14-2 GW and SWMU 14-3 GW) were collected from temporary well completions and a third groundwater sample (SWMU 14-OAPIS-1 GW) was collected from a permanent well completion installed in soil boring SWMU 14-2. There are numerous metals detected at concentrations above their respective screening levels in the two

groundwater samples collected from the temporary well completions, but only two metals above screening levels in the sample collected from the permanent well. Arsenic was detected above the screening level of 0.01 mg/l in two samples (SWMU 14-2 GW and SWMU 14-3 GW). The detected concentrations range from 0.012 mg/l to 0.024 mg/l and are shown on Figure 30.

Barium was detected above the screening level of 1.0 mg/l in one sample (SWMU 14-3 GW). The detected concentrations range from 0.54 mg/l to 2.8 mg/l and are shown on Figure 30.

Beryllium was detected above the screening level of 0.004 mg/l in one sample (SWMU 14-3 GW). The detected concentrations range from 0.0021 mg/l to 0.042 mg/l.

Chromium (total) was detected above the screening level of 0.05 mg/l in two samples (SWMU 14-2 GW and SWMU 14-3 GW). The detected concentrations range from 0.012 mg/l to 0.38 mg/l.

Cobalt was detected above the screening level of 0.05 mg/l in one sample (SWMU 14-3 GW). The detected concentrations range from 0.038 mg/l to 0.12 mg/l.

Cyanide was detected above the screening level of 0.2 mg/l in one sample (SWMU 14-2 GW). The detected concentrations range from 0.09 mg/l to 0.216 mg/l.

Iron was detected above the screening level of 1.0 mg/l in three samples (SWMU 14-2 GW, SWMU 14-3 GW, and SWMU 14-OAPIS-1 GW). The detected concentrations range from 5.6 mg/l to 120 mg/l.

Lead was detected above the screening level of 0.015 mg/l in two samples (SWMU 14-2 GW and SWMU 14-3 GW). The detected concentrations range from 0.044 mg/l to 0.19 mg/l and are shown on Figure 30.

Manganese was detected above the screening level of 0.2 mg/l in three samples (SWMU 14-2 GW, SWMU 14-3 GW, and SWMU 14-OAPIS-1 GW). The detected concentrations range from 1.3 mg/l to 45 mg/l and are shown on Figure 30.

Vanadium was detected above the screening level of 0.183 mg/l in one sample (SWMU 14-3 GW). The detected concentrations range from 0.029 mg/l to 0.52 mg/l.

1,2,4-Trimethylbenzene was detected above the screening level of 0.015 mg/l in two samples (SWMU 14-2 GW and SWMU 14-3 GW). The detected concentrations range from 0.082 mg/l to 0.085 mg/l and are shown on Figure 31.

1-Methylnaphthalene was detected above the screening level of 0.0097 mg/l in two samples (SWMU 14-2 GW and SWMU 14-3 GW). The detected concentrations range from 0.061 mg/l to 0.17 mg/l and are shown on Figure 31.

2-Methylnaphthalene was detected above the screening level of 0.027 mg/l in two samples (SWMU 14-2 GW and SWMU 14-3 GW). The detected concentrations range from 0.039 mg/l to 0.11 mg/l and are shown on Figure 31.

Benzene was detected above the screening level of 0.005 mg/l in three samples (SWMU 14-2 GW, SWMU 14-3 GW, and SWMU 14-OAPIS-1 GW). The detected concentrations range from 0.013 mg/l to 0.097 mg/l and are shown on Figure 31.

MTBE was detected above the screening level of 0.125 mg/l in three samples (SWMU 14-2 GW SWMU 14-3 GW, and SWMU 14-OAPIS-1 GW). The detected concentrations range from 0.25 mg/l to 0.44 mg/l and are shown on Figure 31.

Methylene chloride was detected above the screening level of 0.005 mg/l in one sample (SWMU 14-3 GW). It was detected in only the one sample at a concentration of 0.0075 mg/l.

Naphthalene was detected above the screening level of 0.00143 mg/l in two samples (SWMU 14-2 GW and SWMU 14-3 GW). The detected concentrations range from 0.042 mg/l to 0.045 mg/l and are shown on Figure 31.

DRO was detected above the screening level of 0.2 mg/l in two samples (SWMU 14-2 GW and SWMU 14-OAPIS-1 GW). The detected concentrations range from 6.5 mg/l to 83 mg/l and are shown on Figure 31.

6.3 General Groundwater Chemistry

The measurement of field purging parameters included measurement of groundwater pH, specific conductance, dissolved oxygen concentrations, oxidation-reduction potential, and temperature. The results of the measurements are included in Table 11 and fluid levels measured prior to purging are presented in Table 2.

Section 7
Conclusions and Recommendations

This section summarizes and provides an evaluation of the potential impacts as shown in field screening data and analytical data. This is followed by recommendations for any future actions.

7.1 Conclusions

A cumulative risk evaluation for soils is presented in Tables 12 and 13 for SWMUs No. 1 and No. 14, respectively. The evaluation was conducted by taking the maximum reported soil concentration of each detected constituent and dividing by the residential screening level and non-residential screening levels as shown in the equations below. These calculations are separated for carcinogenic and non-carcinogenic constituents. The cumulative carcinogenic risk is 1.36 x 10^{-3}assuming residential land use and 6.3 x 10^{-5} for non-residential land use at SWMU No. 1. The cumulative carcinogenic risk is 1.41 x 10^{-3} assuming residential land use and 6.93 x 10^{-5} for non-residential land use at SWMU No. 14. The hazard index for residential land use is 0.77 and for non-residential land use is 0.148 at SWMU No. 1. The hazard index for residential land use is 1.50 and for non-residential land use is 0.405 at SWMU No. 14.

$$Site\ Risk = \left(\frac{conc_x}{SSL_x} + \frac{conc_y}{SSL_y} + \frac{conc_z}{SSL_z} + \cdots + \frac{conc_i}{SSL_i}\right) \times 10^{-5}$$

$$Site\ Hazard\ Index\ (HI) = \left(\frac{conc_x}{SSL_x} + \frac{conc_y}{SSL_y} + \frac{conc_z}{SSL_z} + \cdots + \frac{conc_i}{SSL_i}\right) \times 1$$

A cumulative risk evaluation for groundwater is presented in Tables 1 and 15 for SWMUs No. 1 and No. 14, respectively. The evaluation was conducted by taking the maximum reported concentration of each constituent detected in groundwater, which is based on the totals analyses for metals, and dividing by the residential screening levels, as shown in the equation above in the discussion for soil. The cumulative carcinogenic risk level is calculated to be 3.82 x 10^{-4} for SWMU No. 1 and 8.78 x 10^{-4} for SWMU No. 14.

7.1.1 Aeration Basin

<u>Soils</u>

Four organic constituents (1,2,4-trimethylbenzene, 1-methylnaphthalene, benzene, and naphthalene), and DRO were detected in three soil samples at concentrations exceeding their

respective DAF soil screening levels. Two of the soil samples with constituents detected at concentrations above the DAF screening levels are found in soil boring SWMU 1-1, which is located on the southeastern boundary of the Aeration Basin. The sample intervals with concentrations above the DAF screening level include 2-4' and 10-12', with most exceedences in the 2-4' interval. The 2-4' interval is logged as fill material composed of silty clay and the deeper 10-12' interval is clay. This boring was terminated at 14 feet, after encountering bedrock at 13' bgl. There was no indication of saturated conditions in this boring; however, contaminants have migrated to this location immediately adjacent to the Aeration Basin. Similar constituents are found in soils investigated a short distance to the south, near the OAPIS (see Section 7.1.2 below).

Benzene was the only constituent detected above the DAF screening level in soil boring SWMU 1-28 at a depth of 1.5 – 2.0' bgl (2.53 mg/kg vs. 0.796 mg/kg). Soil boring SWMU 1-28 is located on the northern boundary of the Aeration Basin and the 1.5 – 2.0' interval is composed of a clayey gravelly sand, which was damp, but not saturated. The boring was terminated at 4 feet bgl in the same material. The PID readings were low and there was no odor throughout the boring. Boring SWMU 1-28 was originally scheduled as a hand auger location, but it was completed with the HSA drilling rig to allow penetration below 2 feet in order to assess potential impacts observed in the adjacent deep soil boring (SWMU 1-6). Boring SWMU 1-6 had an elevated PID reading of 37.5 ppm in the 2-4 interval; however, no constituents exceeded any of the soil screening levels in the soil samples collected from 2-4' or 4-6' intervals in boring SWMU 1-6.

Overall, there were few exceedences of the DAF screening levels in the soil samples collected around the Aeration Basin. Only 3 (SWMU 1-1 (2-4'), SWMU 1-1 (10-12'), and SWMU 1-28 (1.5-2') out of 103 soil samples collected around the Aeration Basin exceeded DAF screening levels. The vertical impacts to soil were found to extend to the uppermost groundwater-bearing horizons in some borings around the Aeration Basin as discussed below.

Groundwater

There are a seemingly large number of metals detected at concentrations above residential / tap water screening levels in groundwater samples collected from the soil borings that surround the Aeration Basin. The metal screening levels were exceeded in every soil boring from which a groundwater sample was collected. It is possible that these results are affected by high turbidity

levels in the water samples collected from the temporary well completions installed in the soil borings.

Seven organic constituents (1-methylnaphthalene, 2-methylnaphthalene, 1,2,4-trimethlybenzene, benzene, MTBE, naphthalene, and 2,4-dimethylphenol), and DRO were detected in groundwater samples collected from soil borings at concentrations above screening levels. At least one organic constituent was found at concentrations above the screening levels in borings SWMU 1-2, SWMU 1-4, SWMU 1-6, SWMU 1-8, SWMU 1-24, and SWMU 1-37. Soil boring SWMU 1-1 was installed near the southeast corner of the Aeration Basin and encountered bedrock at a depth of 13 feet bgl, but groundwater was not present at this location.

Soil boring SWMU 1-2 was drilled along the southwest side of the Aeration Basin and encountered bedrock at a depth of 19.5 feet bgl. There were several saturated soil intervals encountered in this boring including clayey sand from 8 to 11 feet, 14 to16 feet, 17 to 17.25 feet, and 18.25 to18.5 feet bgl. Benzene was the only organic constituent detected at a concentration above the screening level in SWMU 1-2 (0.017 mg/l vs. 0.005 mg/l). Additional soil boring SWMU 1-37 was installed southwest of the Aeration Basin to delineate potential impacts observed when drilling soil boring SWMU 1-2. Benzene did decrease to below the screening level in the groundwater sample collected at SWMU 1-37, but MTBE increased to a concentration slightly over the screening level (0.13 mg/l vs. 0.125 mg/l) and DRO was detected at 1.0 mg/l, which exceeds the screening level of 0.2 mg/l. In boring SWMU 1-37, bedrock was encountered at 16 feet bgl and two intervals of saturated clayey sand were present at 8.5 - 9 feet and 12 - 13 feet bgl.

Moving further around the edge of the Aeration Basin to just north of the southwest corner, SWMU 1-3 was drilled to bedrock at a depth of 19.5 feet bgl. A thin clayey sand zone at 11-11.25 feet and a second at 18-19.5 feet were both saturated in boring SWMU 1-3. None of the organic constituents exceeded their screening levels at SWMU 1-3. The stratigraphic relationship between the clayey sand zones appearing in SWMU 1-2, SWMU 1-3, SWMU 1-24, and SWMU 1-5 appear on cross section C-C' (Figure 8).

The next deep soil boring drilled (SWMU 1-4) is located further north, on the west side of the Aeration Basin. This boring encountered bedrock at a depth of 23 feet bgl and had saturated intervals of clayey sand at 10-12 feet and clayey sand/sandy clay at 17-20 feet bgl. Six organic constituents (benzene, 2,4-dimethylphenol, 1-methylnaphthalene, 2-methylnaphthalene, 1,2,4-

trimethylbenzene, and naphthalene) and DRO were found at concentrations in groundwater above their screening levels. Based on the field indication of impacts at SWMU 1-4, an additional soil boring (SWMU 1-24) was completed between SWMU 1-4 and SWMU 1-5. SWMU 1-24 was drilled to a depth of 34 feet, but bedrock was not encountered. A saturated interval of clayey silt/sand was identified from 24 to 28 feet bgl. A groundwater sample collected from this boring found benzene, 1-methylnaphthalene, DRO, and naphthalene at concentrations above their screening levels.

Based on the field evidence of potential impacts at borings SWMU 1-4 and SWMU 1-24, two additional soil borings (SWMU 1-20 and SWMU 1-38) were drilled west of the Aeration Basin. At location SWMU 1-20 (located southwest of SWMU 1-4), bedrock was encountered at a depth of only 10 feet bgl and there was no indication of saturation in the boring or the clayey sand deposits, which were identified in SWMU 1-4. No groundwater sample was collected at SWMU 1-20 as the boring was dry. Soil boring SWMU 1-38 was drilled west-northwest of SWMU 1-4 and bedrock was encountered at a depth of only 6 feet bgl. Once again, the clayey sand deposits, which were saturated in boring SWMU 1-4, were not present at this location to the west of the Aeration Basin. No groundwater sample was collected at SWMU 1-38 because the boring was dry. Based on the results of borings SWMU 1-20 and SWMU 1-38, it does not appear that the saturated zones found in SWMU 1-4 and SWMU 1-24 extend beyond the base of the slope on the west side of the Aeration Basin where borings SWMU 1-20 and SWMU 1-38 were completed.

Soil boring SWMU 1-5 was drilled on the northwest corner of the Aeration Basin where bedrock was encountered at a depth of 27 feet bgl. A thin layer of saturated clayey sand (26 - 27' bgl) was identified on top of the bedrock. The temporary well completion produced very little water and no organic constituents were detected above their screening levels.

Soil boring SWMU 1-6 was drilled along the northern edge of the Aeration Basin and bedrock was found at a depth of 11 feet bgl. Two saturated clayey sand zones were identified at 4 - 6 feet and 10 - 11 feet bgl. DRO was the only organic analysis to exceed the screening level.

On the east side of the Aeration Basin, approximately 150 feet south of the northern most extent of the Aeration Basin, soil boring SWMU 1-7 was drilled to a depth of 18 feet bgl. Bedrock was encountered at 16 feet bgl. The only indication of saturation was in thin sand seams in the clay

that immediately overlies the bedrock. No organic constituents were found to exceed their screening levels in the groundwater sample collected at SWMU 1-7.

Soil boring SWMU 1-8 was completed on the east side of the Aeration Basin near the New API Separator. Bedrock was encountered at depth of 19 feet bgl and there was one relatively thick saturated interval of clayey sand found on top of the bedrock from a depth of approximately 13 feet to 19 feet bgl. 1-Methlynaphthalene, MTBE and naphthalene were found in the groundwater sample collected from this boring at concentrations above their screening levels; however, there are additional monitoring wells in this area (e.g., NAPIS-1 located east of the new API Separator) that can be used to provide delineation to the east.

While there are detections of seven organic constituents and DRO in groundwater samples collected immediately surrounding the Aeration Basin, the concentrations are not significantly above the screening levels (i.e., generally less than one order of magnitude above the screening level). The saturated intervals in most locations consist of clayey sand, which was found to not be very productive during sample collection activities. The clayey sand intervals do not appear to be laterally continuous at most locations based the inability to correlate zones between most of the soil borings completed around the perimeter of the Aeration Basin. It also appears that the source of recharge to the saturated intervals found in the borings around the Aeration Basin is the wastewater, which has been maintained in the Aeration Basin. As the Aeration Basin is removed from service and the liquids are removed, it is probable that the saturation observed in borings SWMU 1-2, SWMU 1-3, SWMU 1-4, SWMU 1-5, SWMU 1-6, SWMU 1-7, SWMU 1-8, SWMU 1-24, and SWMU 1-37 will dissipate.

7.1.2 Old API Separator

Soils

Twelve organic constituents [1,1,2-Trichloroethane, 1,2,4-trimethylbenzene, 1,2-dibromo-3-chloropropane, 1,2-dibromoethane (EDB), 1,2-dichloropropane, 1-methylnaphthalene, 2-methylnaphthalene, benzene, ethylbenzene, naphthalene, xylenes, and bis(2-chloroethyl)ether] and DRO were detected in soils at concentrations above their DAF screening levels. Two constituents (1,2-dibromo-3-chloropropane and 1,2-dibromomethane) had concentrations above the residential soil screening levels, but below the non-residential screening levels. The highest concentrations were found in soil samples collected directly beneath the former location of the OAPIS at borings SWMU 14-12, SWMU 14-13, and SWMU 14-14, and at borings immediately

adjacent to the OAPIS (e.g., SWMU 14-15, SWMU 14-16, and SWMU 14 -17). In addition, there is an area of elevated concentrations at depths of 8 to 12 feet bgl located near the west end of the former OAPIS, near borings SWMU 14-6 and SWMU 14-7, and extending north towards the location of the former benzene strippers.

Concentrations of these organic constituents decrease away from the OAPIS and the lateral extent of the impacts to soil were delineated to the south in soil borings SWMU 14-21 and SWMU 14-22. All constituents except benzene were found below their respective DAF screening levels to the east of the OAPIS in boring SWMU 1-23. Benzene was detected at 1.1 mg/kg vs. a DAF screening level of 0.796 mg/kg in silty clay at a depth of 12 – 14 feet in SWMU 14-23. All constituents were found at concentrations below their screening levels in the western most soil boring (SWMU 14-1), which was drilled to a depth of 50 feet in an attempt to hit bedrock or saturation. The extent of impacts to soil was not defined to the north toward the Aeration Basin, as demonstrated by impacts found in soil boring SWMU 14-3, which is located approximately half way between the former OAPIS and the Aeration Basin. It is possible that the impacts to soil may extend continuously between the OAPIS and the Aeration Basin, which are separated by only a short distance of approximately 60 feet. The vertical impacts to soil were found to extend to the uppermost groundwater-bearing horizons in borings SWMU 14-2 and SWMU 14-3.

Groundwater

Groundwater samples were collected from temporary well completions in two soil borings (SWMU 14-2 and SWMU 14-3) and one permanent monitoring well (OAPIS-1), which was installed in boring SWMU 14-2. Similarly as observed above for the temporary well completions around the Aeration Basin, many metals were detected above residential / tap water screening levels in the groundwater samples collected at the temporary well. The number of metals detected at concentrations above their screening levels in the groundwater sample collected from the permanent well completion (OAPIS-1) was significantly less than the number detected in the groundwater sample collected from the initial temporary well completion in this same soil boring (SWMU 14-2). It is possible that these results are affected by high turbidity levels in the water samples collected from the temporary well completions.

Seven organic constituents (benzene, 1-methlynaphthalene, 2-methylnaphthalene, 1,2,4-trimethlybenzene, Methylene chloride, MTBE, and naphthalene) and DRO were detected at concentrations above their screening levels in groundwater samples collected from both

locations [SMWU 14-2 (OAPIS-1) and SMWU 14-3). Soil boring SWMU 14-2 was drilled to a depth of 26 feet, but did not encounter bedrock, nor was there any distinct saturated interval logged in this boring. Soil boring SWMU 14-3 was also drilled to a depth of 26 feet and did not encounter bedrock. An indication of potential saturation was observed near the top of a clay horizon in SWMU 14-3 at 14 feet bgl. Groundwater production was very slow from both of these locations, indicating the lack of a true aquifer.

The lateral extent of potential impacts to groundwater was defined by a series of dry soil borings drilled to the west, south and east of the OAPIS. SWMU 14-1, the western most soil boring near the OAPIS was drilled to a depth of 50 feet and never did encounter bedrock. There was no indication of saturation in SWMU 14-1 and the boring failed to produce any water. Two borings (SWMU 14-21 and SWMU 14-22) were drilled south of the OAPIS and no elevated PID readings or indication of saturation was logged in either boring. Soil boring SWMU 14-23 was drilled east of the OAPIS and did encounter a sandy clay zone at 16 feet bgl that was wet, but a temporary well completion in the boring failed to produce any water.

7.2 Recommendations

An additional soil boring to the north of the Aeration Basin near soil boring SWMU 1-6 could be completed to provide full delineation of both soil and groundwater impacts to the north of the Aeration Basin. Also an additional boring to the southwest of location SWMU 1-37 could provide additional control in this area for potential groundwater impacts. The area between the OAPIS and the Aeration Basin is relatively small and does not warrant additional investigation to determine if there is possible separation of impacts sourced from the two different SWMUs.

An additional soil boring could be installed east of the OAPIS near SWMU 1-23 to provide full delineation of soil impacts observed in this area. Additional soil data to the southwest of SWMU 14-6 could be used to better define soil impacts observed in this area of the site.

Section 8
References

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Tables

TABLE 1

Western Refining - Gallup Refinery - Historical Groundwater Analyses

Bold and highlighted values represent values above the applicable standards.		BTEX Parameters					Metals Parameters									
		Benzene (mg/L)	Toluene (mg/L)	Ethyl Benzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Magnesium (mg/L)
WQCC 20NMAC 6.2.3103 (Oct 2006)		**0.01**	**0.75**	**0.75**	**0.62**	**NE**	**0.1**	**1.0**	**0.01**	**NE**		**0.05**	**1.0**	**1.0**	**0.05**	**NE**
40 CFR 141.62 MCL (May 2009)		**0.005**	**1**	**0.7**	**10**	**NE**	**0.01**	**2.0**	**0.005**	**NE**		**0.1**	**1.3**	**NE**	**0.015**	**NE**
EPA RSL for Tap Water (Nov 2012)		**0.00041**	**0.86**	**0.0013**	**0.19**	**0.012**	**0.000045**	**2.9**		**NE**		**NE**	**0.62**	**11**	**NE**	**NE**
Well ID	**DATE SAMPLED**															
GWM-1																
	10/26/2006						**0.077**	0.53	<0.002	380		<0.006	NL	NL	NL	93
	10/27/2006	**0.012**	<0.001	>0.001	<0.003	**0.16**										
	5/24/2007	**0.016**	<0.001	<0.001	<0.003	**0.23**	**0.081**	0.44	<0.002	360		<0.006	NL	NL	<0.005	87
	7/10/2008	**0.011**	0.0021	**0.0039**	0.019	**0.12**	**0.07**	0.45	<0.002	350		<0.006	0.014	**14**	0.01	81
	7/27/2009	**0.0089**	0.002	**0.0074**	0.034	**0.085**	**0.114**	0.53	<0.002	310		<0.006	<0.006	**14**	0.0072	78
	3/3/2010*	**0.012**	0.005	**0.011**	0.05	**0.078**	**0.098**	0.42	<0.002	280		<0.006	0.0072	**15**	0.0078	57
	7/20/2010	**0.008**	0.002	**0.0068**	0.03	**0.077**	**0.16**	**1.2**	<0.002	310		<0.006	0.019	**20**	0.011	70
	9/16/2010	**0.0075**	0.0049	**0.0067**	0.03	**0.053**	**0.12**	0.87	<0.002	310		<0.006	0.0098	**15**	0.012	76
	11/2/2010	**0.0069**	0.0023	**0.0035**	0.022	**0.062**	**0.14**	**1.4**	<0.002	310		<0.006	<0.006	**7.9**	0.0095	75
	2/16/2011	**0.0095**	0.0034	**0.0054**	0.023	**0.057**	**0.16**	0.94	<0.002	310		0.0089	0.0089	17	0.0098	71
	6/15/2011	**0.0074**	0.0027	**0.0053**	0.026	**0.047**	**0.14**	**1.5**	<0.002	270		<0.006	<0.006	17	0.01	65
	9/26/2011	**0.0096**	0.0052	**0.0059**	0.03	**0.051**	0.12	1.5		290		<0.006	<0.006	17	<0.005	67
	12/14/2011	**0.0085**	0.0019	**0.0042**	0.014	**0.054**										
	12/17/2011						**0.097**	0.67		<10		<0.006	0.029	**15**	**0.023**	2.5
	3/20/2012	**0.0057**	<0.001	**0.0019**	0.007	**0.054**	**0.073**	**1.1**			<0.002	<0.006	<0.006	**8.9**	**0.0058**	2.5
GWM-2																
	9/6/2010									430						76
	9/16/2010	<0.001	<0.001	<0.001	<0.003	0.011										
	10/4/2010	<0.001	<0.001	<0.001	<0.003	0.011				420						77
	2/16/2011	<0.001	<0.001	<0.001	<0.0015	0.0083				460						74
	6/15/2011	<0.001	<0.001	<0.001	<0.0015	0.003				570						120
	9/26/2011	<0.001	<0.001	<0.001	<0.0015	0.0026				620						110
	12/14/2011	<0.001	<0.001	<0.001	<0.001	0.0027				620						120
	3/20/2012	<0.005	<0.005	<0.005	<0.001	<0.012										
GWM-3																
	9/16/2010	<0.001	<0.001	<0.001	<0.003	0.009				540						120
	10/4/2010	<0.001	<0.001	<0.001	<0.003	0.0092				450						89
	2/16/2011	<0.001	<0.001	<0.001	<0.0015	0.0081				450						81
	6/15/2011	<0.001	<0.001	<0.001	<0.0015	0.002				470						83
	9/26/2011	<0.001	<0.001	<0.001	<0.002	<0.0025				500						91
	12/14/2011	<0.001	<0.01	<0.001	<0.002	<0.0025				440						79
	3/20/2012	<0.005	<0.005	<0.005	<0.001	<0.012										

TABLE 1

Western Refining - Gallup Refinery - Historical Groundwater Analyses

Bold and highlighted values represent values above the applicable standards.		Metals Parameters (cont.)									8260b Parameters						
		Manganese (mg/L)	Selenium (mg/L)	Potassium (mg/L)	Silver (mg/L)	Sodium (mg/L)	Silver (mg/L)	Mercury (mg/L)	Uranium (mg/L)	Zinc (mg/L)	1,2,4-Trimethyl benzene (mg/L)	1,3,5-Trimethyl benzene (mg/L)	Naphthalene (mg/L)	1-Methyl naphthalene (mg/L)	2-Methyl naphthalene (mg/L)	Acetone (mg/L)	Isopropyl benzene (mg/L)
WQCC 20NMAC 6.2.3103 (Oct 2006)			**0.05**	**NE**	**0.05**	**NE**		**0.002**	**0.03**	**10**	**NE**	**NE**	**0.03**	**NE**	**NE**	**NE**	**NE**
40 CFR 141.62 MCL (May 2009)			**0.05**	**NE**	**NE**	**NE**		**0.002**	**0.03**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
EPA RSL for Tap Water (Nov 2012)			**0.078**	**NE**		**NE**		**0.00063**	**0.047**	**4.7**	**0.015**	**0.087**	**0.00014**	**0.00097**	**0.027**	**12**	**NE**
Well ID	**DATE SAMPLED**																
GWM-1																	
	10/26/2006		NL	4.2		1400		<0.0002	NL	NL							
	10/27/2006																
	5/24/2007		<0.05	3.7	<0.005	1300		<0.0002	NL	NL	<0.01	<0.01	<0.02	<0.04	<0.04	<0.1	<0.01
	7/10/2008		<0.05	3.3	<0.005	1400		<0.0002	NL	<0.05	0.0046	<0.002	<0.002	<0.008	<0.008	<0.02	<0.002
	7/27/2009		NL	3.0	<0.005	1300		<0.0002	0.0159	0.025	0.0064	0.0011	**0.0024**	**0.0097**	<0.004	<0.01	0.0026
	3/3/2010*		<0.05	2.9	<0.005	1200		<0.0002	0.0224	0.03	0.0081	<0.005	<0.01	<0.02	<0.02	<0.05	<0.005
	7/20/2010		<0.05	3.1	<0.005	1200		<0.0002	0.011	0.031	0.013	<0.001	**0.0035**	**0.0072**	<0.004	0.012	0.0016
	9/16/2010		<0.05	2.8	<0.005	1200		<0.0002	0.015	0.023	0.012	0.0019	NA	NA	NA	NA	NA
	11/2/2010		<0.05	2.9	<0.005	1100		<0.0002	0.009	0.025	0.0075	<0.001	<0.02	**0.011**	<0.004	<0.01	<0.001
	2/16/2011		0.02	4.3	<0.005	1200		<0.002	0.015	0.038	0.008	<0.001	<0.002	**0.01**	<0.004	<0.01	0.0014
	6/15/2011		0.015	<5.0	<0.005	1000		<0.0002	0.0084	0.026	**0.018**	0.0031	**0.0055**	**0.024**	0.0062	<0.01	0.0018
	9/26/2011		0.0082	3.2		1100		<0.0002	0.007	0.025	**0.019**	0.0029	**0.0044**	**0.028**	<0.004	<0.01	0.0019
	12/14/2011										0.004	<0.001	<0.002	**0.0052**	<0.004	<0.01	0.0013
	12/17/2011		0.0047	4.0		1100		<0.002	0.02	0.041							
	3/20/2012	0.0058	0.01				<0.005	<0.001	0.0069	0.016	0.0018	<0.001	<0.002	<0.004	<0.004	0.011	<0.001
GWM-2																	
	9/6/2010			3.2		950											
	9/16/2010																
	10/4/2010			3.0		910											
	2/16/2011			3.7		1000											
	6/15/2011			4.2		1600											
	9/26/2011			4.2		1600											
	12/14/2011			4.1		1500											
	3/20/2012																
GWM-3																	
	9/16/2010			8.2		1400											
	10/4/2010			7.6		1300											
	2/16/2011			7.9		1200											
	6/15/2011			5.7		1200											
	9/26/2011			5.1		1300											
	12/14/2011			4.6		1300											
	3/20/2012																

TABLE 1

Western Refining - Gallup Refinery - Historical Groundwater Analyses

Bold and highlighted values represent values above the applicable standards.		8260b Parameters (cont.)			General Chemical Parameters										
		n-Butyl benzene (mg/L)	n-Propyl benzene (mg/L)	2,4-Dimethyl phenol (mg/L)	Fluoride (mg/L)	Chloride (mg/L)	Bromide (mg/L)	Nitrite (mg/L)	Nitrate (mg/L)	Phosphorus (mg/L)	Sulfate (mg/L)	pH	Specific Conductance (µmhos/cm)	DRO (mg/L)	GRO (mg/L)
WQCC 20NMAC 6.2.3103 (Oct 2006)		**NE**	**NE**	**NE**	**1.6**	**250.0**	**NE**	**NE**	**10**	**NE**	**600.0**	**6 to 9**	**NE**	**0.2[1]**	**NE**
40 CFR 141.62 MCL (May 2009)		**NE**	**NE**	**NE**	**4.0**	**NE**	**NE**	**1**	**10**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
EPA RSL for Tap Water (Nov 2012)		**0.78**	**NE**	**0.27**	**NE**	**NE**	**NE**	**1.6**	**25**	**0.00031**	**NE**	**NE**	**NE**	**NE**	**NE**
Well ID	**DATE SAMPLED**														
GWM-1															
	10/26/2006				**2.0**	**3700**	NL	<2.0	<2.0	<2.5	120	6.87	NR	NR	NR
	10/27/2006														
	5/24/2007	<0.01	<0.01	<0.01	**1.9**	**1800**	NL	<2.0	<2.0	<0.5	120	NL	NL	NL	NL
	7/10/2008	<0.002	<0.002	0.028	**1.7**	**1800**	NL	<2.0	<2.0	<0.5	110	6.92	7400	NR	NR
	7/27/2009	<0.001	0.0002	0.064	**2.1**	**1600**	NL	<4.0	<4.0	<0.5	73	7.03	6200	NR	NR
	3/3/2010*	<0.005	<0.005	NL	**2.1**	**1600**	2.7	<4.0	<4.0	<0.5	88	NR	NR	**3.9**	0.88
	7/20/2010	0.0019	0.0015	0.052	**2.9**	**1500**	2.6	<4.0	<4.0	<2.5	57	7.18	6400	NR	NR
	9/16/2010	NA	NA	NA	**2.9**	**1400**	NL	<4.0	<4.0	<5.0	48	NR	NR	**7.7**	0.71
	11/2/2010	0.0016	0.0012	NL	**3.5**	**1300**	NL	<1.0	<1.0	<5.0	26	NR	NR	**6.0**	0.68
	2/16/2011	<0.001	0.0018	NL	**2.8**	**1400**	2.5	**2.1**	2.1	<0.5	47	NR	NR	**5.4**	0.7
	6/15/2011	<0.01	0.0028	NL	**2.6**	**1200**	2.6	<2.0	<2.0	<2.5	64	NR	NR	**4.0**	0.53
	9/26/2011	<0.01	0.0027	NL	**3.5**	**1300**	1.5	<4.0	<4.0	<2.5	47	NR	NR	**3.9**	0.65
	12/14/2011	<0.001	0.0022	NL	1.2	**1300**	2.5	<1.0	<1.0	<10	54	NR	NR	**2.9**	0.81
	12/17/2011														
	3/20/2012	<0.001	0.0011	NL	3.6	**1200**	3.2	<0.5	<0.5	<2.5	130	NR	NR	**3.5**	1
GWM-2															
	9/6/2010														
	9/16/2010				0.46	**1400**	NL	<4.0	<4.0	<5.0	**700**	NR	NR	<1.0	<0.05
	10/4/2010				0.52	**1800**	3.4	<4.0	<4.0	<0.5	**740**	NR	NR	<1.0	<0.05
	2/16/2011				0.43	**910**	3.3	**2.6**	2.6	<0.5	**660**	NR	NR	<1.0	<0.05
	6/15/2011				**3.1**	**2200**	4.9	**66**	**66**	<2.5	**1100**	NR	NR	<1.0	<0.05
	9/26/2011				**16**	**2200**	4.9	**52**	**52**	<2.5	**1200**	NR	NR	<1.0	<0.05
	12/14/2011				0.48	**2100**	4	**25**	**25**	<10	**1000**	NR	NR	<1.0	<0.05
	3/20/2012				**3.6**	**1500**	4.4	<0.5	<0.5	<2.5	**1300**	NR	NR	2.4	<0.25
GWM-3															
	9/16/2010				**4.7**	**2000**	NL	**66**	**66**	<5.0	**1500**	NR	NR	**3.7**	0.066
	10/4/2010				**5.9**	**1800**	2.3	**61**	**61**	<0.5	**1500**	NR	NR	**1.3**	0.12
	2/16/2011				**4.2**	**1100**	2.1	**61**	**61**	<0.5	**1900**	NR	NR	<1.0	<0.05
	6/15/2011				**5.5**	**610**	2.3	<2.0	<2.0	<2.5	**1900**	NR	NR	**1.1**	0.12
	9/26/2011				**5.3**	**1000**	2.5	**130**	**130**	<2.5	**2500**	NR	NR	**2.7**	<0.05
	12/14/2011				**5.0**	**1400**	2.5	**51**	**51**	<10	**1800**	NR	NR	**1.3**	<0.05
	3/20/2012				**4.9**	**1300**	2.8	<0.5	<0.5	<2.5	**1600**	NR	NR	**2.7**	<0.25

9/26/2011 Quarterly sampling combined with Annual sampling event

DEFINITIONS:

NE = Not Established
NA = Not Analyzed
NL = Not Listed on laboratory analysis

STANDARDS:

WQCC 20 NMAC 6.23103 - Standards for Ground Water of 10,000 mg/l TDS Concentration or Less.
a) Human Health Standards; b) Other Standards for Domestic Water
40 CFR 141.62 Detection Limites for Inorganic Contaminatnts
[1] NMED Table 6-2. TPH Screening Guidelines for Potable Ground Water (GW-1) (June 2012)

TABLE 2
Groundwater Level Measurements
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Well ID	Measure-ment date	Ground Level Elevations (ft)	Well Casing Rim Elevations (ft)	Total Well Depth (ft)	Depth to Water (1)	Groundwater Elevation (ft)	Screened Interval Depth Top to Bottom (ft)
GWM-1	2/18/2008	6,910.22	6,912.61	26.20	19.91	6,892.70	17.5 - 23.5
	5/21/2008	6,910.22	6,912.61		19.47	6,893.14	
	9/10/2008	6,910.22	6,912.61		20.24	6,892.37	
	11/3/2008	6,910.22	6,912.61		20.55	6,892.06	
	2/11/2009	6,910.22	6,912.61		19.81	6,892.80	
	5/4/2009	6,910.22	6,912.61		19.56	6,893.05	
	8/10/2009	6,910.22	6,912.61		20.32	6,892.29	
	10/27/2009	6,910.22	6,912.61		20.57	6,892.04	
	3/3/2010	6,910.22	6,912.61		19.81	6,892.80	
	6/3/2010	6,910.22	6,912.61		18.14	6,894.47	
	9/16/2010	6,910.22	6,912.61		17.90	6,894.71	
	11/2/2010	6,910.22	6,912.61		18.41	6,894.20	
	2/16/2011	6,910.22	6,912.61		15.99	6,896.62	
	6/15/2011	6,910.22	6,912.61		15.82	6,896.79	
	9/26/2011	6,910.22	6,912.61		16.42	6,896.19	
	12/14/2011	6,910.22	6,912.61		16.08	6,896.53	
	6/12/2012	6,910.22	6,912.61		15.56	6,897.05	
	8/21/2012	6,910.22	6,912.61		16.29	6,896.32	
	11/28/2012	6,910.22	6,912.61		14.50	6,898.11	
	3/18/2013	6,910.22	6,912.61		16.87	6,895.74	
	6/12/2013	6,910.22	6,912.61		17.45	6,895.16	
	9/3/2013	6,910.22	6,912.61		17.88	6,894.73	
	11/11/2013	6,910.22	6,912.61		18.41	6,894.20	
	3/11/2014	6,910.22	6,912.61		18.92	6,893.69	

TABLE 2
Groundwater Level Measurements
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Well ID	Measure-ment date	Ground Level Elevations (ft)	Well Casing Rim Elevations (ft)	Total Well Depth (ft)	Depth to Water [1]	Groundwater Elevation (ft)	Screened Interval Depth Top to Bottom (ft)
GWM-2	2/18/2008	6,910.32	6,913.09	18.81	18.45	6,894.64	3.2 - 16.2
	3/17/2008	6,910.32	6,913.09		DRY	DRY	
	5/21/2008	6,910.32	6,913.09		DRY	DRY	
	9/10/2008	6,910.32	6,913.09		DRY	DRY	
	11/3/2008	6,910.32	6,913.09		DRY	DRY	
	2/11/2009	6,910.32	6,913.09		DRY	DRY	
	5/4/2009	6,910.32	6,913.09		DRY	DRY	
	8/10/2009	6,910.32	6,913.09		DRY	DRY	
	10/27/2009	6,910.32	6,913.09		DRY	DRY	
	3/3/2010	6,910.32	6,913.09		DRY	DRY	
	6/3/2010	6,910.32	6,913.09		17.57	6,895.52	
	9/16/2010	6,910.32	6,913.09		17.30	6,895.79	
	11/2/2010	6,910.32	6,913.09		18.87	6,894.22	
	2/16/2011	6,910.32	6,913.09		15.08	6,898.01	
	6/15/2011	6,910.32	6,913.09		15.02	6,898.07	
	9/26/2011	6,910.32	6,913.09		15.89	6,897.20	
	12/14/2011	6,910.32	6,913.09		15.40	6,897.69	
	6/12/2012	6,910.32	6,913.09		14.96	6,898.13	
	8/21/2012	6,910.32	6,913.09		15.79	6,897.30	
	11/28/2012	6,910.32	6,913.09		13.83	6,899.26	
	3/18/2013	6,910.32	6,913.09		16.77	6,896.32	
	6/12/2013	6,910.32	6,913.09		17.10	6,895.99	
	9/3/2013	6,910.32	6,913.09		17.88	6,895.21	
	11/11/2013	6,910.32	6,913.09		18.39	6,894.70	
	3/11/2014	6,910.32	6,913.09		DRY	DRY	

TABLE 2
Groundwater Level Measurements
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Well ID	Measure-ment date	Ground Level Elevations (ft)	Well Casing Rim Elevations (ft)	Total Well Depth (ft)	Depth to Water [1]	Groundwater Elevation (ft)	Screened Interval Depth Top to Bottom (ft)
GWM-3	2/18/2008	6,907.35	6,910.25	17.80	DRY	DRY	3 - 15
	5/21/2008	6,907.35	6,910.25		DRY	DRY	
	9/10/2008	6,907.35	6,910.25		DRY	DRY	
	11/3/2008	6,907.35	6,910.25		DRY	DRY	
	2/11/2009	6,907.35	6,910.25		DRY	DRY	
	5/4/2009	6,907.35	6,910.25		DRY	DRY	
	8/10/2009	6,907.35	6,910.25		DRY	DRY	
	10/27/2009	6,907.35	6,910.25		DRY	DRY	
	3/3/2010	6,907.35	6,910.25		DRY	DRY	
	6/3/2010	6,907.35	6,910.25		17.17	6,893.08	
	9/16/2010	6,907.35	6,910.25		16.92	6,893.33	
	11/2/2010	6,907.35	6,910.25		17.83	6,892.42	
	2/16/2011	6,907.35	6,910.25		12.84	6,897.41	
	6/15/2011	6,907.35	6,910.25		14.20	6,896.05	
	9/26/2011	6,907.35	6,910.25		15.64	6,894.61	
	12/14/2011	6,907.35	6,910.25		14.35	6,895.90	
	6/12/2012	6,907.35	6,910.25		14.70	6,895.55	
	8/21/2012	6,907.35	6,910.25		15.45	6,894.80	
	11/28/2012	6,907.35	6,910.25		13.60	6,896.65	
	3/18/2013	6,907.35	6,910.25		DRY	DRY	
	6/12/2013	6,907.35	6,910.25		DRY	DRY	
	9/3/2013	6,907.35	6,910.25		DRY	DRY	
	11/11/2013	6,907.35	6,910.25		DRY	DRY	
	3/11/2014	6,907.35	6,910.25		DRY	DRY	

TABLE 2
Groundwater Level Measurements
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Well ID	Measure-ment date	Ground Level Elevations (ft)	Well Casing Rim Elevations (ft)	Total Well Depth (ft)	Depth to Water [1]	Groundwater Elevation (ft)	Screened Interval Depth Top to Bottom (ft)
NAPIS 1 (KA-1R)	4/11/2008	6,913.62	6,913.86	13.53	8.58	6,905.28	3.7 -13.7
	7/11/2008	6,913.62	6,913.86		8.98	6,904.88	
	11/4/2008	6,913.62	6,913.86		8.83	6,905.03	
	3/23/2009	6,913.62	6,913.86		8.92	6,904.94	
	5/28/2009	6,913.62	6,913.86		8.67	6,905.19	
	8/11/2009	6,913.62	6,913.86		9.06	6,904.80	
	11/23/2009	6,913.62	6,913.86		10.28	6,903.58	
	3/8/2010	6,913.62	6,913.86		8.69	6,905.17	
	6/8/2010	6,913.62	6,913.86		8.37	6,905.49	
	9/15/2010	6,913.62	6,913.86		7.77	6,906.09	
	11/2/2010	6,913.62	6,913.86		7.62	6,906.24	
	3/2/2011	6,913.62	6,913.86		7.47	6,906.39	
	6/15/2011	6,913.62	6,913.86		7.96	6,905.90	
	9/27/2011	6,913.62	6,913.86		7.30	6,906.56	
	12/14/2011	6,913.62	6,913.86		7.45	6,906.41	
	6/12/2012	6,913.62	6,913.86		7.39	6,906.47	
	8/21/2012	6,913.62	6,913.86		7.07	6,906.79	
	11/28/2012	6,913.62	6,913.86		8.04	6,905.82	
	3/18/2013	6,913.62	6,913.86		7.84	6,906.02	
	6/12/2013	6,913.62	6,913.86		7.88	6,905.98	
	9/3/2013	6,913.62	6,913.86		6.64	6,907.22	
	11/12/2013	6,913.62	6,913.86		6.65	6,907.21	
	3/11/2014	6,913.62	6,913.86		6.78	6,907.08	

TABLE 2
Groundwater Level Measurements
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Well ID	Measure-ment date	Ground Level Elevations (ft)	Well Casing Rim Elevations (ft)	Total Well Depth (ft)	Depth to Water [1]	Groundwater Elevation (ft)	Screened Interval Depth Top to Bottom (ft)
NAPIS 2 (KA-2R)	4/11/2008	6,913.40	6,912.65	13.61	8.83	6,903.82	4.2 - 14.2
	7/11/2008	6,913.40	6,912.65		8.96	6,903.69	
	11/4/2008	6,913.40	6,912.65		9.23	6,903.42	
	3/23/2009	6,913.40	6,912.65		9.35	6,903.30	
	5/28/2009	6,913.40	6,912.65		9.22	6,903.43	
	8/11/2009	6,913.40	6,912.65		9.39	6,903.26	
	11/23/2009	6,913.40	6,912.65		9.72	6,902.93	
	3/8/2010	6,913.40	6,912.65		9.19	6,903.46	
	6/8/2010	6,913.40	6,912.65		8.93	6,903.72	
	9/15/2010	6,913.40	6,912.65		8.57	6,904.08	
	11/2/2010	6,913.40	6,912.65		8.55	6,904.10	
	3/2/2011	6,913.40	6,912.65		9.14	6,903.51	
	6/15/2011	6,913.40	6,912.65		8.67	6,903.98	
	9/27/2011	6,913.40	6,912.65		8.18	6,904.47	
	12/14/2011	6,913.40	6,912.65		8.20	6,904.45	
	6/12/2012	6,913.40	6,912.65		9.40	6,903.25	
	8/21/2012	6,913.40	6,912.65		7.95	6,904.70	
	11/28/2012	6,913.40	6,912.65		8.09	6,904.56	
	3/18/2013	6,913.40	6,912.65		9.19	6,903.46	
	6/12/2013	6,913.40	6,912.65		9.00	6,903.65	
	9/3/2013	6,913.40	6,912.65		8.34	6,904.31	
	11/12/2013	6,913.40	6,912.65		8.20	6,904.45	
	3/11/2014	6,913.40	6,912.65		8.03	6,904.62	

TABLE 2
Groundwater Level Measurements
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Well ID	Measure-ment date	Ground Level Elevations (ft)	Well Casing Rim Elevations (ft)	Total Well Depth (ft)	Depth to Water [1]	Groundwater Elevation (ft)	Screened Interval Depth Top to Bottom (ft)
NAPIS 3 (KA-3R)	4/11/2008	6,913.38	6,912.76	30.42	14.98	6,897.78	25.4 - 30-4
	7/11/2008	6,913.38	6,912.76		9.72	6,903.04	
	11/4/2008	6,913.38	6,912.76		8.71	6,904.05	
	3/23/2009	6,913.38	6,912.76		9.93	6,902.83	
	6/15/2009	6,913.38	6,912.76		8.59	6,904.17	
	8/31/2009	6,913.38	6,912.76		8.39	6,904.37	
	11/23/2009	6,913.38	6,912.76		21.62	6,891.14	
	3/8/2010	6,913.38	6,912.76		9.24	6,903.52	
	6/10/2010	6,913.38	6,912.76		8.87	6,903.89	
	9/15/2010	6,913.38	6,912.76		7.31	6,905.45	
	11/2/2010	6,913.38	6,912.76		8.65	6,904.11	
	3/2/2011	6,913.38	6,912.76		8.11	6,904.65	
	6/15/2011	6,913.38	6,912.76		7.89	6,904.87	
	9/27/2011	6,913.38	6,912.76		7.74	6,905.02	
	12/14/2011	6,913.38	6,912.76		8.30	6,904.46	
	6/12/2012	6,913.38	6,912.76		7.41	6,905.35	
	8/21/2012	6,913.38	6,912.76		8.56	6,904.20	
	11/28/2012	6,913.38	6,912.76		8.30	6,904.46	
	3/18/2013	6,913.38	6,912.76		9.10	6,903.66	
	6/12/2013	6,913.38	6,912.76		8.64	6,904.12	
	9/3/2013	6,913.38	6,912.76		8.92	6,903.84	
	11/12/2013	6,913.38	6,912.76		8.61	6,904.15	
	3/11/2014	6,913.38	6,912.76		8.9	6,903.86	

TABLE 2
Groundwater Level Measurements
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Well ID	Measure-ment date	Ground Level Elevations (ft)	Well Casing Rim Elevations (ft)	Total Well Depth (ft)	Depth to Water (1)	Groundwater Elevation (ft)	Screened Interval Depth Top to Bottom (ft)
KA-3	11/4/2008	6,913.29	6,912.52	23.20	9.01	6,903.51	15 - 25
	3/23/2009	6,913.29	6,912.52		9.23	6,903.29	
	5/28/2009	6,913.29	6,912.52		9.12	6,903.40	
	8/31/2009	6,913.29	6,912.52		9.36	6,903.16	
	11/23/2009	6,913.29	6,912.52		9.60	6,902.92	
	3/8/2010	6,913.29	6,912.52		8.74	6,903.78	
	6/10/2010	6,913.29	6,912.52		8.39	6,904.13	
	9/15/2010	6,913.29	6,912.52		8.69	6,903.83	
	11/2/2010	6,913.29	6,912.52		8.52	6,904.00	
	3/2/2011	6,913.29	6,912.52		8.51	6,904.01	
	6/15/2011	6,913.29	6,912.52		8.44	6,904.08	
	9/27/2011	6,913.29	6,912.52		8.11	6,904.41	
	12/14/2011	6,913.29	6,912.52		8.08	6,904.44	
	6/12/2012	6,913.29	6,912.52		7.97	6,904.55	
	8/21/2012	6,913.29	6,912.52		7.98	6,904.54	
	11/28/2012	6,913.29	6,912.52		7.97	6,904.55	
	3/18/2013	6,913.29	6,912.52		9.07	6,903.45	
	6/12/2013	6,913.29	6,912.52		8.88	6,903.64	
	9/3/2013	6,913.29	6,912.52		8.35	6,904.17	
	11/12/2013	6,913.29	6,912.52		7.91	6,904.61	
	3/11/2014	6,913.29	6,912.52		8.03	6,904.49	
OAPIS-1	10/15/2012	6,914.37	6,916.73	28.30	10.6	6,906.13	16 - 26
	3/18/2013	6,914.37	6,916.73		11.18	6,905.55	
	6/12/2013	6,914.37	6,916.73		11.50	6,905.23	
	9/3/2013	6,914.37	6,916.73		10.69	6,906.04	
	11/11/2013	6,914.37	6,916.73		10.90	6,905.83	
	3/11/2014	6,914.37	6916.73		11.5	6,905.23	

1 - no free product measured in any wells

TABLE 3
SWMU 1 Soil Boring Samples - Vapor Screening Results
Western Refining Company Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Sample Interval Depth	SWMU 1-1	SWMU 1-2	SWMU 1-3	SWMU 1-4	SWMU 1-5	SWMU 1-6	SWMU 1-7	SWMU 1-8	SWMU 1-9	SWMU 1-10	SWMU 1-11	SWMU 1-12	SWMU 1-13	SWMU 1-14	SWMU 1-15	SWMU 1-16	SWMU 1-17	SWMU 1-18	SWMU 1-19	SWMU 1-20
0 – 2'	12.9	3	17.3	2.9	6.8	10.5	7.6	26.5	3.2/7.0	10.1/6.1	38.9/3.7	63/4.4	3.1	5.7/4.7	5.7/9.3	7.7/5.7	9.5/6.7	8.2/5.2	4.1	21.7
2 – 4'	245	3.7	21.3	3.8	8.1	37.5	4.8	9.9					35.7							4.6
4 – 6'	NR	6.1	10.3	3.0	8.4	15.9	5.1	13.5					15.6							2.5
6 – 8'	333	2.8	18.9	3.1	2.5	5.8/4.9	4.0	8.8												2.8
8 –10'	144	NR	14.2	3.1	3.8	7.8	1.7	10.0												3.9
10 – 12'	399	4.7/4.3	16.3/12.3	7.8	9.8	9.6/0.8	0.5	15.8												1.5
12 – 14'	148/199	3.2	7.4	13.2	8.2		0.4	161												
14 – 16'		3.7	8.9	NR	11.0		5.9	9.9												
16 – 18'		7.2	11.3/10.7	11.8/16.4	16.1		2.8	8.3												
18 – 20'		2.9/2.3	5.4/6.1	8.5	12.8			14.0/10.5												
20 – 22'				8.5	5.7															
22 – 24'				5.6/5.2	5.5															
24 – 26'					10.9															
26 – 28'					3.0/4.1															

Sample Interval Depth	SWMU 1-21	SWMU 1-22	SWMU 1-23	SWMU 1-24	SWMU 1-25	SWMU 1-26	SWMU 1-27	SWMU 1-28	SWMU 1-29	SWMU 1-30	SWMU 1-31	SWMU 1-32	SWMU 1-33	SWMU 1-34	SWMU 1-35	SWMU 1-36	SWMU 1-37	SWMU 1-38	SWMU 1-39
0 – 2'	1.4	4.9/6.8	3.7	4.6	4.1/4.7	6.5	14.5	4.0	3.6	4.6	3.9	0.7	3.1	3.2	0.8	1.9	4.9	10.3	4.4
2 – 4'				6.4			18.2	4.8		6.6					4.7		13.6	8.5	
4 – 6'				14.4						6.7					1.7		12.8	8.2	
6 – 8'				22.9													16.6	11.7	
8 –10'				13.3													8.8		
10 – 12'				15.7													14.6		
12 – 14'				11.7													14.6/11.4		
14 – 16'				17.8													12.3		
16 – 18'				28.0													NR		
18 – 20'				27.0															
20 – 22'				27.1															
22 – 24'				17.7															
24 – 26'				19.5															
26 – 28'				22.8															
28 – 30'				16.7															
30 – 32'				13.2															
32 – 34'				10.9															

UNITS - PPM
NR = No Recover

TABLE 3
SWMU 14 Soil Boring Samples - Vapor Screening Results
Western Refining Company Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Sample Interval Depth	SWMU 14-1	OAPIS-1 (SWMU 14-2)	SWMU 14-3	SWMU 14-4	SWMU 14-5	SWMU 14-6	SWMU 14-7	SWMU 14-8	SWMU 14-9	SWMU 14-10	SWMU 14-11	SWMU 14-12
0 – 2'	5.0/12.6	2.9/280	14.3/6.2	5.9/6.2	5.7/7.4	0.7	141/197	8.2/3717	4.9/106	0.3/0.4	5.3/38.5	949/1094
2 – 4'	7.2	56.8	101	28.2		3.9	293		1712			
4 – 6'	13.9	69.4	122	23.1		306	365		1959			
6 – 8'	13.2	87.5	104	19.2		364	935		582			
8 –10'	21.0	330	343	581		345	649		10.9			
10 – 12'	105.9	294	155	711		367	NR		11.3			
12 – 14'	12.4	14.6	326	34.5		13.6	265		10.8			
14 – 16'	10.9	5.7	NM	8.7		10.5	108					
16 – 18'	10.9	10.7	NM	6.5		4.6	74					
18 – 20'	14.9	NM	NM	2.5			9.9					
20 – 22'	15.8	17.9	8.5				3.2					
22 – 24'	13.0	12.8	5.4				3.3					
24 – 26'	13.7	13.2	2.3									
26 – 28'	9.5											
28 – 30'	9.6											
30 – 32'	5.0											
32 – 34'	10.3											
34 – 36'	9.9											
36 – 38'	3.0											
38 – 40'	8.2											
40 – 42'	2.1											
42 – 44'	3.1											
44 – 46'	4.0											
46 – 48'	4.3											
48 – 50'	3.2											

Sample Interval Depth	SWMU 14-13	SWMU 14-14	SWMU 14-15	SWMU 14-16	SWMU 14-17	SWMU 14-18	SWMU 14-19	SWMU 14-20	SWMU 14-21	SWMU 14-22	SWMU 14-23	SWMU 14-24
0 – 2'	300/975	567/1028	2.8/5000	10.8/375.5	10.9/898	5.0/2537	4.4/5.1	2.0	10.5	2.9	11.0	3.0/4.0
2 – 4'									4.6	7.3	14.8	
4 – 6'									8.6	7.9	13.6	
6 – 8'									7.6	7.3	385.0	
8 –10'									4.5	4.9	112.0	
10 – 12'											315.0	
12 – 14'											398.0	
14 – 16'											52.0	
16 – 18'											120.0	
18 – 20'											NR	
20 – 22'											NR	

UNITS - PPM
NR - No Recovery
NM - No Measurement

TABLE 4
Residential Soil Screening Levels
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

					Cross Media Soil-to-Ground Water			Cross Media Soil-to-Ground Water		
	NMED		EPA		NMED	EPA		NMED	EPA	
Analyte	Residential Soil (mg/kg)	Endpoint	Residential Soil (mg/kg)	ResSoil key	DAF1 (mg/kg)	GW_Risk-based SSL (mgkg)	GW_MCL-based SSL (mg/kg)	DAF (461) (mg/kg)	GW_Risk-based SSL (461) (mg/kg)	GW_MCL-based SSL (461) (mg/kg)
Applicable depth interval	0-10'		0-2'		All depths			All depths		
Acenaphthene	3.44E+03	n	3.40E+03	n	1.69E+01	4.10E+00	-	7.79E+03	1.89E+03	-
Acenaphthylene	-	-	-	-	-	-	-	-	-	-
Acetone	6.66E+04	n	6.10E+04	n	3.86E+00	2.40E+00	-	1.78E+03	1.11E+03	-
Aniline	-	-	8.50E+01	c**	-	3.90E-03	-	-	1.80E+00	-
Anthracene	1.72E+04	n	1.70E+04	n	2.71E+02	4.20E+01	-	1.25E+05	1.94E+04	-
Antimony	3.13E+01	n	3.10E+01	n	6.61E-01	2.70E-01	0.27	3.05E+02	1.24E+02	1.24E+02
Arsenic	3.90E+00	c	3.90E-01	c*	1.31E-02	1.30E-03	0.29	6.05E+00	5.99E-01	1.34E+02
Azobenzene	-	-	5.10E+00	c	-	8.00E-04	-	-	3.69E-01	-
Barium	1.56E+04	n	1.50E+04	n	3.01E+02	1.20E+02	82	1.39E+05	5.53E+04	3.78E+04
Benz(a)anthracene	1.48E+00	c	1.50E-01	c	7.83E-02	1.00E-02	-	3.61E+01	4.61E+00	-
Benzene	1.54E+01	c	1.10E+00	c*	1.73E-03	2.00E-04	0.0026	7.96E-01	9.22E-02	1.20E+00
Benzo(a)pyrene	1.48E-01	c	1.50E-02	c	2.60E-02	3.50E-03	0.24	1.20E+01	1.61E+00	1.11E+02
Benzo(b)fluoranthene	1.48E+00	c	1.50E-01	c	2.65E-01	3.50E-02	-	1.22E+02	1.61E+01	-
Benzo(g,h,i)perylene	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	1.48E+01	c	1.50E+00	c	2.60E+00	3.50E-01	-	1.20E+03	1.61E+02	-
Benzoic acid	-	-	2.40E+05	nm	-	1.40E+01	-	-	6.45E+03	-
Benzyl alcohol	-	-	6.10E+03	n	-	3.70E-01	-	-	1.71E+02	-
Beryllium	1.56E+02	n	1.60E+02	n	5.77E+01	1.30E+01	3.2	2.66E+04	5.99E+03	1.48E+03
Bis(2-chloroethoxy)methane	-	-	1.80E+02	n	-	1.10E-02	-	-	5.07E+00	-
Bis(2-chloroethyl)ether	2.68E+00	c	2.10E-01	c	2.63E-05	3.10E-06	-	1.21E-02	1.43E-03	-
Bis(2-chloroisopropyl)ether	9.15E+01	c	4.60E+00	c	2.33E-03	1.10E-04	-	1.07E+00	5.07E-02	-
Bis(2-ethylhexyl)phthalate	3.47E+02	cs	3.50E+01	c*	8.62E+00	1.70E-02	1.4	3.97E+03	7.84E+00	6.45E+02
Bromobenzene	-	-	3.00E+02	n	-	3.60E-02	-	-	1.66E+01	-
Bromodichloromethane	5.41E+00	c	2.70E-01	c	2.71E-04	3.20E-05	0.022	1.25E-01	1.48E-02	1.01E+01
Bromoform	6.16E+02	c	6.20E+01	c*	6.04E-01	2.10E-03	0.021	2.78E+02	9.68E-01	9.68E+00
Bromomethane	1.65E+01	n	7.30E+00	n	1.92E-03	1.80E-03	-	8.86E-01	8.30E-01	-
4-Bromophenyl phenyl ether	-	-	-	-	-	-	-	-	-	-
2-Butanone (MEK)	3.71E+04	n	2.80E+04	n	1.27E+00	1.00E+00	-	5.87E+02	4.61E+02	-
Butyl benzyl phthalate	-	-	2.60E+02	c*	-	2.00E-01	-	-	9.22E+01	-
Cadmium	7.03E+01	n	7.00E+01	n	1.37E+00	-	-	6.33E+02	-	-
Carbazole	-	-	-	-	-	-	-	-	-	-
Carbon disulfide	1.53E+03	ns	8.20E+02	ns	2.83E-01	2.10E-01	-	1.30E+02	9.68E+01	-
Carbon tetrachloride	1.08E+01	c	6.10E-01	c	1.60E-03	1.50E-04	0.0019	7.39E-01	6.92E-02	8.76E-01
Chlorobenzene	3.76E+02	ns	2.90E+02	n	4.92E-02	4.90E-02	0.068	2.27E+01	2.26E+01	3.13E+01
Chloroethane	2.98E+04	ns	1.50E+04	ns	5.37E+00	5.90E+00	-	2.48E+03	2.72E+03	-
Chloroform	5.86E+00	c	2.90E-01	c	4.59E-04	5.30E-05	0.022	2.12E-01	2.44E-02	1.01E+01
Chloromethane	2.75E+02	n	1.20E+02	n	4.40E-02	4.90E-02	-	2.03E+01	2.26E+01	-
4-Chloro-3-methylphenol	-	-	6.10E+03	n	-	1.30E+00	-	-	5.99E+02	-
4-Chloroaniline	-	-	2.40E+00	c	-	1.30E-04	-	-	5.99E-02	-
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	-	-	-	-
4-Chlorotoluene	-	-	1.60E+03	ns	-	1.80E-01	-	-	8.30E+01	-
2-Chloronaphthalene	6.11E+01	n	6.30E+03	ns	8.69E-04	2.90E+00	-	4.01E-01	1.34E+03	-
2-Chlorophenol	3.91E+02	n	3.90E+02	n	1.16E-01	5.70E-02	-	5.33E+01	2.63E+01	-
2-Chlorotoluene	1.56E+03	ns	1.60E+03	ns	5.58E-01	1.70E-01	-	2.57E+02	7.84E+01	-
Chromium III	1.17E+05	nl	1.20E+05	nm	9.86E+07	2.80E+07	-	4.54E+10	1.29E+10	-
Chromium VI	2.97E+00	c	2.90E-01	c	8.31E-03	5.90E-04	-	3.83E+00	2.72E-01	-
Chrysene	1.48E+02	c	1.50E+01	c	7.99E+00	1.10E+00	-	3.68E+03	5.07E+02	-
cis-1,2-DCE	1.56E+02	n	1.60E+02	n	1.84E-02	8.20E-03	2.10E-02	8.47E+00	3.78E+00	9.68E+00
cis-1,3-Dichloropropene	3.37E+01	c	-	-	1.24E-03	-	-	5.71E-01	-	-
Cobalt	-	-	2.30E+01	n	-	2.10E-01	-	-	9.68E+01	-
Cyanide	4.69E+01	n	4.70E+01	n	2.21E-01	9.40E-02	2	1.02E+02	4.33E+01	9.22E+02
1,1-Dichloroethane	6.45E+01	c	3.30E+00	c	5.98E-03	6.80E-04	-	2.75E+00	3.13E-01	-
1,1-Dichloroethene	4.49E+02	n	2.40E+02	n	1.16E-01	9.30E-02	0.0025	5.36E+01	4.29E+01	1.15E+00
1,1-Dichloropropene	-	-	-	-	-	-	-	-	-	-
1,2-Dibromo-3-chloropropane	1.86E+00	c	5.40E-03	c	1.10E-06	1.40E-07	8.60E-05	5.07E-04	6.45E-05	3.96E-02
1,2-Dibromoethane (EDB)	5.88E-01	c	3.40E-02	c	1.54E-05	1.80E-06	1.40E-05	7.10E-03	8.30E-04	6.45E-03
1,2-Dichlorobenzene	2.31E+03	ns	1.90E+03	ns	2.80E-01	2.70E-01	0.58	1.29E+02	1.24E+02	2.67E+02

TABLE 4
Residential Soil Screening Levels
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

					Cross Media Soil-to-Ground Water			Cross Media Soil-to-Ground Water		
	NMED		EPA		NMED	EPA		NMED	EPA	
Analyte	Residential Soil (mg/kg)	Endpoint	Residential Soil (mg/kg)	ResSoil key	DAF1 (mg/kg)	GW_Risk-based SSL (mgkg)	GW_MCL-based SSL (mg/kg)	DAF (461) (mg/kg)	GW_Risk-based SSL (461) (mg/kg)	GW_MCL-based SSL (461) (mg/kg)
Applicable depth interval	0-10'		0-2'		All depths			All depths		
3,3'-Dichlorobenzidine	1.08E+01	c	1.10E+00	c	7.40E-03	7.10E-04	-	3.41E+00	3.27E-01	-
1,2-Dichloroethane (EDC)	7.89E+00	c	4.30E-01	c*	3.56E-04	4.20E-05	0.0014	1.64E-01	1.94E-02	6.45E-01
1,2-Dichloropropane	1.52E+01	c	9.40E-01	c*	1.07E-03	1.30E-04	0.0017	4.94E-01	5.99E-02	7.84E-01
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	-	-
1,3-Dichloropropane	-	-	1.60E+03	ns	-	9.90E-02	-	-	4.56E+01	-
1,4-Dichlorobenzene	3.17E+01	c	2.40E+00	c	3.19E-03	4.00E-04	0.072	1.47E+00	1.84E-01	3.32E+01
2,2-Dichloropropane	-	-	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	1.83E+02	n	1.80E+02	n	9.98E-02	4.10E-02	-	4.60E+01	1.89E+01	-
2,4-Dimethylphenol	1.22E+03	n	1.20E+03	n	6.65E-01	3.20E-01	-	3.07E+02	1.48E+02	-
4,6-Dinitro-2-methylphenol	-	-	4.90E+00	n	-	2.00E-03	-	-	9.22E-01	-
2,4-Dinitrophenol	1.22E+02	n	1.20E+02	n	6.31E-02	3.40E-02	-	2.91E+01	1.57E+01	-
2,4-Dinitrotoluene	1.57E+01	c	1.60E+00	c*	2.25E-03	2.80E-04	-	1.04E+00	1.29E-01	-
2,6-Dinitrotoluene	6.11E+01	n	6.10E+01	n	3.85E-02	2.00E-02	-	1.77E+01	9.22E+00	-
Dibenz(a,h)anthracene	1.48E-01	c	1.50E-02	c	8.46E-02	1.10E-02	-	3.90E+01	5.07E+00	-
Dibenzofuran	-	-	7.80E+01	n	-	1.10E-01	-	-	5.07E+01	-
Dibromochloromethane	1.21E+01	c	6.80E-01	c	3.31E-04	3.90E-05	2.10E-02	1.52E-01	1.80E-02	9.68E+00
Dibromomethane	5.16E+01	n	2.50E+01	n	1.71E-03	1.90E-03	-	7.89E-01	8.76E-01	-
Dichlorodifluoromethane	1.68E+02	n	9.40E+01	n	3.72E-01	3.00E-01	-	1.71E+02	1.38E+02	-
Diethyl phthalate	4.89E+04	n	4.90E+04	n	9.66E+00	4.70E+00	-	4.45E+03	2.17E+03	-
Dimethyl phthalate	6.11E+05	nl	-	-	8.06E+01	-	-	3.71E+04	-	-
Di-n-butyl phthalate	6.11E+03	n	6.10E+03	n	6.97E+00	1.70E+00	-	3.21E+03	7.84E+02	-
Di-n-octyl phthalate	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	6.84E+01	c	5.40E+00	c	1.30E-02	1.50E-03	7.80E-01	5.98E+00	6.92E-01	3.60E+02
Fluoranthene	2.29E+03	n	2.30E+03	n	1.22E+02	7.00E+01	-	5.61E+04	3.23E+04	-
Fluorene	2.29E+03	n	2.30E+03	n	2.03E+01	4.00E+00	-	9.36E+03	1.84E+03	-
Hexachlorobenzene	3.04E+00	c	3.00E-01	c	3.98E-03	5.30E-04	1.30E-02	1.83E+00	2.44E-01	5.99E+00
Hexachlorobutadiene	6.11E+01	n	6.20E+00	c**	1.28E-02	5.00E-04	-	5.91E+00	2.31E-01	-
Hexachlorocyclopentadiene	3.67E+02	n	3.70E+02	n	5.27E-01	7.00E-02	1.60E-01	2.43E+02	3.23E+01	7.38E+01
Hexachloroethane	4.28E+01	n	1.20E+01	c**	8.18E-03	4.80E-04	-	3.77E+00	2.21E-01	-
2-Hexanone	9.38E+02	ns	2.10E+02	n	7.65E+00	7.90E-03	-	3.53E+03	3.64E+00	-
Indeno(1,2,3-cd)pyrene	1.48E+00	c	1.50E-01	c	8.63E-01	1.20E-01	-	3.98E+02	5.53E+01	-
Iron	5.48E+04	n	5.50E+04	n	6.46E+02	2.70E+02	-	2.98E+05	1.24E+05	-
Isophorone	5.12E+03	c	5.10E+02	c*	1.92E-01	2.20E-02	-	8.84E+01	1.01E+01	-
Isopropylbenzene (cumene)	2.43E+03	ns	2.10E+03	ns	8.65E-01	6.40E-01	-	3.99E+02	2.95E+02	-
4-Isopropyltoluene	-	-	-	-	-	-	-	-	-	-
Lead	4.00E+02	IEUBK	4.00E+02	L	-	-	1.40E+01	-	-	6.45E+03
Manganese	1.86E+03	n	-	-	5.72E+01	-	-	2.64E+04	-	-
Mercury	1.56E+01	ns	1.00E+01	ns	3.27E-02	3.30E-02	0.1	1.51E+01	1.52E+01	4.61E+01
Methyl tert-butyl ether (MTBE)	9.01E+02	c	4.30E+01	c	2.41E-02	2.80E-03	-	1.11E+01	1.29E+00	-
Methylene chloride	4.09E+02	n	5.60E+01	c**	4.12E-02	2.50E-03	1.30E-03	1.90E+01	1.15E+00	5.99E-01
1-Methylnaphthalene	-	-	1.60E+01	c	-	5.10E-03	-	-	2.35E+00	-
2-Methylnaphthalene	-	-	2.30E+02	n	-	1.40E-01	-	-	6.45E+01	-
2-Methylphenol	-	-	3.10E+03	n	-	5.80E-01	-	-	2.67E+02	-
3+4-Methylphenol	-	-	-	-	-	-	-	-	-	-
4-Methyl-2-pentanone	-	-	5.30E+03	ns	-	2.30E-01	-	-	1.06E+02	-
2-Nitroaniline	-	-	6.10E+02	n	-	6.20E-02	-	-	2.86E+01	-
3-Nitroaniline	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline	-	-	2.40E+01	c*	-	1.40E-03	-	-	6.45E-01	-
2-Nitrophenol	-	-	-	-	-	-	-	-	-	-
4-Nitrophenol	-	-	-	-	-	-	-	-	-	-
Naphthalene	4.30E+01	c	3.60E+00	c*	3.57E-03	4.70E-04	-	1.64E+00	2.17E-01	-
n-Butylbenzene	-	-	3.90E+03	ns	-	2.50E+00	-	-	1.15E+03	-
Nickel	1.56E+03	n	1.50E+03	n	4.77E+01	2.00E+01	-	2.20E+04	9.22E+03	-
Nitrobenzene	5.35E+01	c	4.80E+00	c*	6.24E-04	7.90E-05	-	2.88E-01	3.64E-02	-
N-Nitrosodi-n-propylamine	-	-	6.90E-02	c	-	7.00E-06	-	-	3.23E-03	-
N-Nitrosodiphenylamine	9.93E+02	c	9.90E+01	c	5.65E-01	5.70E-02	-	2.61E+02	2.63E+01	-
n-Propylbenzene	-	-	3.40E+03	ns	-	9.90E-01	-	-	4.56E+02	-

TABLE 4
Residential Soil Screening Levels
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

					Cross Media Soil-to-Ground Water			Cross Media Soil-to-Ground Water		
	NMED		EPA		NMED	EPA		NMED	EPA	
Analyte	Residential Soil (mg/kg)	Endpoint	Residential Soil (mg/kg)	ResSoil key	DAF1 (mg/kg)	GW_Risk-based SSL (mgkg)	GW_MCL-based SSL (mg/kg)	DAF (461) (mg/kg)	GW_Risk-based SSL (461) (mg/kg)	GW_MCL-based SSL (461) (mg/kg)
Applicable depth interval	0-10'		0-2'		All depths			All depths		
Pentachlorophenol	8.94E+00	c	8.90E-01	c	1.28E-02	3.60E-04	0.01	5.90E+00	1.66E-01	4.61E+00
Phenanthrene	1.83E+03	ns	-	-	2.86E+01	-	-	1.32E+04	-	-
Phenol	1.83E+04	n	1.80E+04	n	4.97E+00	2.60E+00	-	2.29E+03	1.20E+03	-
Pyrene	1.72E+03	n	1.70E+03	n	8.94E+01	9.50E+00	-	4.12E+04	4.38E+03	-
Pyridine	-	-	7.80E+01	n	-	5.30E-03	-	-	2.44E+00	-
sec-Butylbenzene	-	-	-	-	-	-	-	-	-	-
Selenium	3.91E+02	n	3.90E+02	n	9.65E-01	4.00E-01	2.60E-01	4.45E+02	1.84E+02	1.20E+02
Silver	3.91E+02	n	3.90E+02	n	1.57E+00	6.00E-01	-	7.22E+02	2.77E+02	-
Styrene	7.28E+03	ns	6.30E+03	ns	1.39E+00	1.20E+00	0.11	6.40E+02	5.53E+02	5.07E+01
1,2,3-Trichlorobenzene	-	-	4.90E+01	n	-	1.50E-02	-	-	6.92E+00	-
1,1,1,2-Tetrachloroethane	2.91E+01	c	1.90E+00	c	1.65E-03	1.90E-04	-	7.59E-01	8.76E-02	-
1,1,1-Trichloroethane	1.56E+04	ns	8.70E+03	ns	2.91E+00	2.60E+00	0.07	1.34E+03	1.20E+03	3.23E+01
1,1,2,2-Tetrachloroethane	8.02E+00	c	5.60E-01	c	2.13E-04	2.60E-05	-	9.82E-02	1.20E-02	-
1,1,2-Trichloroethane	2.81E+00	n	1.10E+00	c**	1.12E-04	7.70E-05	0.0016	5.14E-02	3.55E-02	7.38E-01
2,4,5-Trichlorophenol	6.11E+03	n	6.10E+03	n	1.04E+01	3.30E+00	-	4.78E+03	1.52E+03	-
2,4,6-Trichlorophenol	6.11E+01	n	4.40E+01	c**	1.04E-01	1.30E-02	-	4.78E+01	5.99E+00	-
1,2,3-Trichloropropane	4.97E-02	c	5.00E-03	c	2.50E-06	2.80E-07	-	1.15E-03	1.29E-04	-
1,2,4-Trichlorobenzene	7.30E+01	n	2.20E+01	c**	9.13E-03	2.90E-03	0.2	4.21E+00	1.34E+00	9.22E+01
1,2,4-Trimethylbenzene	-	-	6.20E+01	n	-	2.10E-02	-	-	9.68E+00	-
1,3,5-Trimethylbenzene	-	-	7.80E+02	ns	-	1.20E-01	-	-	5.53E+01	-
tert-Butylbenzene	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene (PCE)	7.02E+00	c	2.20E+01	c**	4.30E-04	4.40E-03	0.0023	1.98E-01	2.03E+00	1.06E+00
Toluene	5.27E+03	ns	5.00E+03	ns	1.27E+00	5.90E-01	0.69	5.84E+02	2.72E+02	3.18E+02
trans-1,2-DCE	2.70E+02	n	1.50E+02	n	2.69E-02	2.50E-02	2.90E-02	1.24E+01	1.15E+01	1.34E+01
trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-	-	-
Trichloroethene (TCE)	8.77E+00	n	9.10E-01	c**	1.05E-03	1.60E-04	0.0018	4.85E-01	7.38E-02	8.30E-01
Trichlorofluoromethane	1.41E+03	ns	7.90E+02	n	8.89E-01	6.90E-01	-	4.10E+02	3.18E+02	-
Vanadium	3.91E+02	n	3.90E+02	n	1.83E+02	7.80E+01	-	8.42E+04	3.60E+04	-
Vinyl chloride	7.28E-01	c	6.00E-02	c	5.42E-05	5.30E-06	0.00069	2.50E-02	2.44E-03	3.18E-01
Xylenes, Total	8.14E+02	ns	6.30E+02	ns	1.56E-01	1.90E-01	9.8	7.21E+01	8.76E+01	4.52E+03
Zinc	2.35E+04	n	2.30E+04	n	6.82E+02	2.90E+02	-	3.14E+05	1.34E+05	-

c - carcinogen
n - noncarcinogen
cs - carcinogen, SSL November exceed saturation
ns - noncarcinogen, SSL November exceed saturation
nl - noncarcinogen, SSL may exceed ceiling limit
nls - noncarcinogen, SSL may exceed both saturation and ceiling limit
* = where n SL < 100X c SL, ** = where n SL < 10X c SL
- no screenig value currently available

NMED - Risk Assessment Guidance for Site Investigations and Remediation (June 14, 2012)
EPA - Regional Screening Levels (November 2012)

TABLE 5
Non-Residential Soil Screening Levels
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analyte	NMED		EPA		Cross Media Soil-to-Ground Water NMED	Cross Media Soil-to-Ground Water EPA		Cross Media Soil-to-Ground Water NMED	Cross Media Soil-to-Ground Water EPA	
	ConsWork (mg/kg)	ConsWork Soil (Endpoint)	Industrial (mg/kg)	IndSoil _key	DAF1 (mg/kg)	GW_Risk-based SSL (mg/kg)	GW_MCL-based SSL (mg/kg)	DAF (461) (mg/kg)	GW_Risk-based SSL (461) (mg/kg)	GW_MCL-based SSL (461) (mg/kg)
Applicable depth interval	0-10'		0-2'		All depths			All depths		
Acenaphthene	1.86E+04	n	3.30E+04	n	1.69E+01	4.10E+00	-	7.79E+03	1.89E+03	-
Acenaphthylene	-	-	-	-	-	-	-	-	-	-
Acetone	2.21E+05	nls	6.30E+05	nms	3.86E+00	2.40E+00	-	1.78E+03	1.11E+03	-
Aniline	-	-	3.00E+02	c*	-	3.90E-03	-	-	1.80E+00	-
Anthracene	6.68E+04	n	1.70E+05	nm	2.71E+02	4.20E+01	-	1.25E+05	1.94E+04	-
Antimony	1.24E+02	n	4.10E+02	n	6.61E-01	2.70E-01	0.27	3.05E+02	1.24E+02	1.24E+02
Arsenic	5.30E+01	n	1.60E+00	c	1.31E-02	1.30E-03	0.29	6.05E+00	5.99E-01	1.34E+02
Azobenzene	-	-	2.30E+01	c	-	8.00E-04	-	-	3.69E-01	-
Barium	4.35E+03	n	1.90E+05	nm	3.01E+02	1.20E+02	82	1.39E+05	5.53E+04	3.78E+04
Benz(a)anthracene	2.13E+02	c	2.10E+00	c	7.83E-02	1.00E-02	-	3.61E+01	4.61E+00	-
Benzene	1.38E+02	n	5.40E+00	c*	1.73E-03	2.00E-04	0.0026	7.96E-01	9.22E-02	1.20E+00
Benzo(a)pyrene	2.13E+01	c	2.10E-01	c	2.60E-02	3.50E-03	0.24	1.20E+01	1.61E+00	1.11E+02
Benzo(b)fluoranthene	2.13E+02	c	2.10E+00	c	2.65E-01	3.50E-02	-	1.22E+02	1.61E+01	-
Benzo(g,h,i)perylene	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	2.06E+03	c	2.10E+01	c	2.60E+00	3.50E-01	-	1.20E+03	1.61E+02	-
Benzoic acid	-	-	2.50E+06	nm	-	1.40E+01	-	-	6.45E+03	-
Benzyl alcohol	-	-	6.20E+04	n	-	3.70E-01	-	-	1.71E+02	-
Beryllium	1.44E+02	n	2.00E+03	n	5.77E+01	1.30E+01	3.2	2.66E+04	5.99E+03	1.48E+03
Bis(2-chloroethoxy)methane	-	-	1.80E+03	n	-	1.10E-02	-	-	5.07E+00	-
Bis(2-chloroethyl)ether	7.78E+01	c	1.00E+00	c	2.63E-05	3.10E-06	-	1.21E-02	1.43E-03	-
Bis(2-chloroisopropyl)ether	3.10E+03	cs	2.20E+01	c	2.33E-03	1.10E-04	-	1.07E+00	5.07E-02	-
Bis(2-ethylhexyl)phthalate	4.76E+03	n	1.20E+02	c	8.62E+00	1.70E-02	1.4	3.97E+03	7.84E+00	6.45E+02
Bromobenzene	-	-	1.80E+03	ns	-	3.60E-02	-	-	1.66E+01	-
Bromodichloromethane	1.43E+02	c	1.40E+00	c	2.71E-04	3.20E-05	0.022	1.25E-01	1.48E-02	1.01E+01
Bromoform	4.76E+03	n	2.20E+02	c*	6.04E-01	2.10E-03	0.021	2.78E+02	9.68E-01	9.68E+00
Bromomethane	1.64E+01	n	3.20E+01	n	1.92E-03	1.80E-03	-	8.86E-01	8.30E-01	-
4-Bromophenyl phenyl ether	-	-	-	-	-	-	-	-	-	-
2-Butanone (MEK)	8.43E+04	nls	2.00E+05	nms	1.27E+00	1.00E+00	-	5.87E+02	4.61E+02	-
Butyl benzyl phthalate	-	-	9.10E+02	c	-	2.00E-01	-	-	9.22E+01	-
Cadmium	2.77E+02	n	8.00E+02	n	1.37E+00	-	-	6.33E+02	-	-
Carbazole	-	-	-	-	-	-	-	-	-	-
Carbon disulfide	1.58E+03	ns	3.70E+03	ns	2.83E-01	2.10E-01	-	1.30E+02	9.68E+01	-
Carbon tetrachloride	2.26E+02	ns	3.00E+00	c	1.60E-03	1.50E-04	0.0019	7.39E-01	6.92E-02	8.76E-01
Chlorobenzene	4.06E+02	ns	1.40E+03	ns	4.92E-02	4.90E-02	0.068	2.27E+01	2.26E+01	3.13E+01
Chloroethane	2.61E+04	nls	6.10E+04	ns	5.37E+00	5.90E+00	-	2.48E+03	2.72E+03	-
Chloroform	1.54E+02	c	1.50E+00	c	4.59E-04	5.30E-05	0.022	2.12E-01	2.44E-02	1.01E+01
Chloromethane	2.41E+02	n	5.00E+02	n	4.40E-02	4.90E-02	-	2.03E+01	2.26E+01	-
4-Chloro-3-methylphenol	-	-	6.20E+04	n	-	1.30E+00	-	-	5.99E+02	-
4-Chloroaniline	-	-	8.60E+00	c	-	1.30E-04	-	-	5.99E-02	-
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	-	-	-	-
4-Chlorotoluene	-	-	2.00E+04	ns	-	1.80E-01	-	-	8.30E+01	-
2-Chloronaphthalene	2.94E+02	n	8.20E+04	ns	8.69E-04	2.90E+00	-	4.01E-01	1.34E+03	-
2-Chlorophenol	1.55E+03	n	5.10E+03	n	1.16E-01	5.70E-02	-	5.33E+01	2.63E+01	-
2-Chlorotoluene	6.19E+03	ns	2.00E+04	ns	5.58E-01	1.70E-01	-	2.57E+02	7.84E+01	-
Chromium III	4.65E+05	nl	1.50E+06	nm	9.86E+07	2.80E+07	-	4.54E+10	1.29E+10	-
Chromium VI	6.56E+01	c	5.60E+00	c	8.31E-03	5.90E-04	-	3.83E+00	2.72E-01	-
Chrysene	2.06E+04	c	2.10E+02	c	7.99E+00	1.10E+00	-	3.68E+03	5.07E+02	-
cis-1,2-DCE	6.19E+02	c	2.00E+03	n	1.84E-02	8.20E-03	2.10E-02	8.47E+00	3.78E+00	9.68E+00
cis-1,3-Dichloropropene	2.09E+02	ns	-	-	1.24E-03	-	-	5.71E-01	-	-
Cobalt	-	-	3.00E+02	n	-	2.10E-01	-	-	9.68E+01	-
Cyanide	1.86E+02	n	6.10E+02	n	2.21E-01	9.40E-02	2	1.02E+02	4.33E+01	9.22E+02
1,1-Dichloroethane	1.70E+03	cs	1.70E+01	c	5.98E-03	6.80E-04	-	2.75E+00	3.13E-01	-
1,1-Dichloroethene	4.32E+02	ns	1.10E+03	n	1.16E-01	9.30E-02	0.0025	5.36E+01	4.29E+01	1.15E+00
1,1-Dichloropropene	-	-	-	-	-	-	-	-	-	-
1,2-Dibromo-3-chloropropane	5.07E+00	c	6.90E-02	c	1.10E-06	1.40E-07	8.60E-05	5.07E-04	6.45E-05	3.96E-02
1,2-Dibromoethane (EDB)	1.60E+01	c	1.70E-01	c	1.54E-05	1.80E-06	1.40E-05	7.10E-03	8.30E-04	6.45E-03
1,2-Dichlorobenzene	2.71E+03	ns	9.80E+03	ns	2.80E-01	2.70E-01	0.58	1.29E+02	1.24E+02	2.67E+02
3,3´-Dichlorobenzidine	3.64E+02	c	3.80E+00	c	7.40E-03	7.10E-04	-	3.41E+00	3.27E-01	-
1,2-Dichloroethane (EDC)	5.87E+01	n	2.20E+00	c*	3.56E-04	4.20E-05	0.0014	1.64E-01	1.94E-02	6.45E-01
1,2-Dichloropropane	2.50E+01	n	4.70E+00	c*	1.07E-03	1.30E-04	0.0017	4.94E-01	5.99E-02	7.84E-01

TABLE 5
Non-Residential Soil Screening Levels
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analyte	NMED		EPA		Cross Media Soil-to-Ground Water NMED	Cross Media Soil-to-Ground Water EPA		Cross Media Soil-to-Ground Water NMED	Cross Media Soil-to-Ground Water EPA	
	ConsWork (mg/kg)	ConsWork Soil (Endpoint)	Industrial (mg/kg)	IndSoil _key	DAF1 (mg/kg)	GW_Risk-based SSL (mg/kg)	GW_MCL-based SSL (mg/kg)	DAF (461) (mg/kg)	GW_Risk-based SSL (461) (mg/kg)	GW_MCL-based SSL (461) (mg/kg)
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	-	-
1,3-Dichloropropane	-	-	2.00E+04	ns	-	9.90E-02	-	-	4.56E+01	-
1,4-Dichlorobenzene	8.31E+02	cs	1.20E+01	c	3.19E-03	4.00E-04	0.072	1.47E+00	1.84E-01	3.32E+01
2,2-Dichloropropane	-	-	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	7.15E+02	n	1.80E+03	n	9.98E-02	4.10E-02	-	4.60E+01	1.89E+01	-
2,4-Dimethylphenol	4.76E+03	n	1.20E+04	n	6.65E-01	3.20E-01	-	3.07E+02	1.48E+02	-
4,6-Dinitro-2-methylphenol	-	-	4.90E+01	n	-	2.00E-03	-	-	9.22E-01	-
2,4-Dinitrophenol	4.76E+02	n	1.20E+03	n	6.31E-02	3.40E-02	-	2.91E+01	1.57E+01	-
2,4-Dinitrotoluene	4.76E+02	n	5.50E+00	c	2.25E-03	2.80E-04	-	1.04E+00	1.29E-01	-
2,6-Dinitrotoluene	2.38E+02	n	6.20E+02	n	3.85E-02	2.00E-02	-	1.77E+01	9.22E+00	-
Dibenz(a,h)anthracene	2.13E+01	c	2.10E-01	c	8.46E-02	1.10E-02	-	3.90E+01	5.07E+00	-
Dibenzofuran	-	-	1.00E+03	ns	-	1.10E-01	-	-	5.07E+01	-
Dibromochloromethane	3.32E+02	cs	3.30E+00	c	3.31E-04	3.90E-05	2.10E-02	1.52E-01	1.80E-02	9.68E+00
Dibromomethane	3.10E+03	ns	1.10E+02	n	1.71E-03	1.90E-03	-	7.89E-01	8.76E-01	-
Dichlorodifluoromethane	1.49E+02	ns	4.00E+02	n	3.72E-01	3.00E-01	-	1.71E+02	1.38E+02	-
Diethyl phthalate	1.91E+05	nl	4.90E+05	nm	9.66E+00	4.70E+00	-	4.45E+03	2.17E+03	-
Dimethyl phthalate	2.38E+06	nl	-	-	8.06E+01	-	-	3.71E+04	-	-
Di-n-butyl phthalate	2.38E+04	n	6.20E+04	n	6.97E+00	1.70E+00	-	3.21E+03	7.84E+02	-
Di-n-octyl phthalate	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	1.83E+03	cs	2.70E+01	c	1.30E-02	1.50E-03	7.80E-01	5.98E+00	6.92E-01	3.60E+02
Fluoranthene	8.91E+03	n	2.20E+04	n	1.22E+02	7.00E+01	-	5.61E+04	3.23E+04	-
Fluorene	8.91E+03	ns	2.20E+04	n	2.03E+01	4.00E+00	-	9.36E+03	1.84E+03	-
Hexachlorobenzene	1.03E+02	c	1.10E+00	c	3.98E-03	5.30E-04	1.30E-02	1.83E+00	2.44E-01	5.99E+00
Hexachlorobutadiene	2.38E+02	n	2.20E+01	c*	1.28E-02	5.00E-04	-	5.91E+00	2.31E-01	-
Hexachlorocyclopentadiene	8.11E+02	n	3.70E+03	n	5.27E-01	7.00E-02	1.60E-01	2.43E+02	3.23E+01	7.38E+01
Hexachloroethane	1.67E+02	n	4.30E+01	c*	8.18E-03	4.80E-04	-	3.77E+00	2.21E-01	-
2-Hexanone	9.73E+02	ns	1.40E+03	n	7.65E+00	7.90E-03	-	3.53E+03	3.64E+00	-
Indeno(1,2,3-cd)pyrene	2.13E+02	c	2.10E+00	c	8.63E-01	1.20E-01	-	3.98E+02	5.53E+01	-
Iron	2.17E+05	nl	7.20E+05	nm	6.46E+02	2.70E+02	-	2.98E+05	1.24E+05	-
Isophorone	4.75E+04	n	1.80E+03	c*	1.92E-01	2.20E-02	-	8.84E+01	1.01E+01	-
Isopropylbenzene (cumene)	2.81E+03	ns	1.10E+04	ns	8.65E-01	6.40E-01	-	3.99E+02	2.95E+02	-
4-Isopropyltoluene	-	-	-	-	-	-	-	-	-	-
Lead	8.00E+02	IEUBK	8.00E+02	L	-	-	1.40E+01	-	-	6.45E+03
Manganese	4.40E+02	n	-	-	5.72E+01	-	-	2.64E+04	-	-
Mercury	1.36E+01	ns	4.30E+01	ns	3.27E-02	3.30E-02	0.1	1.51E+01	1.52E+01	4.61E+01
Methyl tert-butyl ether (MTBE)	2.49E+04	cs	2.20E+02	c	2.41E-02	2.80E-03	-	1.11E+01	1.29E+00	-
Methylene chloride	1.12E+03	ns	9.60E+02	c**	4.12E-02	2.50E-03	1.30E-03	1.90E+01	1.15E+00	5.99E-01
1-Methylnaphthalene	-	-	5.30E+01	c	-	5.10E-03	-	-	2.35E+00	-
2-Methylnaphthalene	-	-	2.20E+03	ns	-	1.40E-01	-	-	6.45E+01	-
2-Methylphenol	-	-	3.10E+04	n	-	5.80E-01	-	-	2.67E+02	-
3+4-Methylphenol	-	-	-	-	-	-	-	-	-	-
4-Methyl-2-pentanone	-	-	5.30E+04	ns	-	2.30E-01	-	-	1.06E+02	-
2-Nitroaniline	-	-	6.00E+03	n	-	6.20E-02	-	-	2.86E+01	-
3-Nitroaniline	-	-	-	-	-	-	-	-	-	-
4-Nitroaniline	-	-	8.60E+01	c*	-	1.40E-03	-	-	6.45E-01	-
2-Nitrophenol	-	-	-	-	-	-	-	-	-	-
4-Nitrophenol	-	-	-	-	-	-	-	-	-	-
Naphthalene	1.58E+02	n	1.80E+01	c*	3.57E-03	4.70E-04	-	1.64E+00	2.17E-01	-
n-Butylbenzene	-	-	5.10E+04	ns	-	2.50E+00	-	-	1.15E+03	-
Nickel	6.19E+03	n	2.00E+04	n	4.77E+01	2.00E+01	-	2.20E+04	9.22E+03	-
Nitrobenzene	3.32E+02	n	2.40E+01	c*	6.24E-04	7.90E-05	-	2.88E-01	3.64E-02	-
N-Nitrosodi-n-propylamine	-	-	2.50E-01	c	-	7.00E-06	-	-	3.23E-03	-
N-Nitrosodiphenylamine	3.36E+04	c	3.50E+02	c	5.65E-01	5.70E-02	-	2.61E+02	2.63E+01	-
n-Propylbenzene	-	-	2.10E+04	ns	-	9.90E-01	-	-	4.56E+02	-
Pentachlorophenol	3.10E+02	c	2.70E+00	c	1.28E-02	3.60E-04	0.01	5.90E+00	1.66E-01	4.61E+00
Phenanthrene	7.15E+03	n	-	-	2.86E+01	-	-	1.32E+04	-	-
Phenol	6.88E+04	n	1.80E+05	nm	4.97E+00	2.60E+00	-	2.29E+03	1.20E+03	-
Pyrene	6.68E+03	n	1.70E+04	n	8.94E+01	9.50E+00	-	4.12E+04	4.38E+03	-
Pyridine	-	-	1.00E+03	n	-	5.30E-03	-	-	2.44E+00	-
sec-Butylbenzene	-	-	-	-	-	-	-	-	-	-
Selenium	1.55E+03	n	5.10E+03	n	9.65E-01	4.00E-01	2.60E-01	4.45E+02	1.84E+02	1.20E+02

TABLE 5
Non-Residential Soil Screening Levels
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analyte	NMED		EPA		Cross Media Soil-to-Ground Water NMED	Cross Media Soil-to-Ground Water EPA		Cross Media Soil-to-Ground Water NMED	Cross Media Soil-to-Ground Water EPA	
	ConsWork (mg/kg)	ConsWork Soil (Endpoint)	Industrial (mg/kg)	IndSoil _key	DAF1 (mg/kg)	GW_Risk-based SSL (mg/kg)	GW_MCL-based SSL (mg/kg)	DAF (461) (mg/kg)	GW_Risk-based SSL (461) (mg/kg)	GW_MCL-based SSL (461) (mg/kg)
Silver	1.55E+03	n	5.10E+03	n	1.57E+00	6.00E-01	-	7.22E+02	2.77E+02	-
Styrene	9.99E+03	ns	3.60E+04	ns	1.39E+00	1.20E+00	0.11	6.40E+02	5.53E+02	5.07E+01
1,2,3-Trichlorobenzene	-	-	4.90E+02	ns	-	1.50E-02	-	-	6.92E+00	-
1,1,1,2-Tetrachloroethane	7.79E+02	cs	9.30E+00	c	1.65E-03	1.90E-04	-	7.59E-01	8.76E-02	-
1,1,1-Trichloroethane	1.48E+04	ns	3.80E+04	ns	2.91E+00	2.60E+00	0.07	1.34E+03	1.20E+03	3.23E+01
1,1,2,2-Tetrachloroethane	2.21E+02	c	2.80E+00	c	2.13E-04	2.60E-05	-	9.82E-02	1.20E-02	-
1,1,2-Trichloroethane	4.72E+02	ns	5.30E+00	c**	1.12E-04	7.70E-05	0.0016	5.14E-02	3.55E-02	7.38E-01
2,4,5-Trichlorophenol	2.38E+04	n	6.20E+04	n	1.04E+01	3.30E+00	-	4.78E+03	1.52E+03	-
2,4,6-Trichlorophenol	2.38E+02	n	1.60E+02	c**	1.04E-01	1.30E-02	-	4.78E+01	5.99E+00	-
1,2,3-Trichloropropane	7.23E+00	c	9.50E-02	c	2.50E-06	2.80E-07	-	1.15E-03	1.29E-04	-
1,2,4-Trichlorobenzene	6.87E+01	ns	9.90E+01	c**	9.13E-03	2.90E-03	0.2	4.21E+00	1.34E+00	9.22E+01
1,2,4-Trimethylbenzene	-	-	2.60E+02	ns	-	2.10E-02	-	-	9.68E+00	-
1,3,5-Trimethylbenzene	-	-	1.00E+04	ns	-	1.20E-01	-	-	5.53E+01	-
tert-Butylbenzene	-	-	-	-	-	-	-	-	-	-
Tetrachloroethene (PCE)	2.12E+02	cs	1.10E+02	c**	4.30E-04	4.40E-03	0.0023	1.98E-01	2.03E+00	1.06E+00
Toluene	1.34E+04	ns	4.50E+04	ns	1.27E+00	5.90E-01	0.69	5.84E+02	2.72E+02	3.18E+02
trans-1,2-DCE	2.73E+02	ns	6.90E+02	n	2.69E-02	2.50E-02	2.90E-02	1.24E+01	1.15E+01	1.34E+01
trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-	-	-
Trichloroethene (TCE)	7.68E+00	cs	6.40E+00	c**	1.05E-03	1.60E-04	0.0018	4.85E-01	7.38E-02	8.30E-01
Trichlorofluoromethane	1.30E+03	ns	3.40E+03	ns	8.89E-01	6.90E-01	-	4.10E+02	3.18E+02	-
Vanadium	1.55E+03	n	5.20E+03	n	1.83E+02	7.80E+01	-	8.42E+04	3.60E+04	-
Vinyl chloride	1.49E+02	c	1.70E+00	c	5.42E-05	5.30E-06	0.00069	2.50E-02	2.44E-03	3.18E-01
Xylenes, Total	7.43E+02	ns	2.70E+03	ns	1.56E-01	1.90E-01	9.8	7.21E+01	8.76E+01	4.52E+03
Zinc	9.29E+04	n	3.10E+05	nm	6.82E+02	2.90E+02	-	3.14E+05	1.34E+05	-

c - carcinogen
n - noncarcinogen
cs - carcinogen, SSL November exceed saturation
ns - noncarcinogen, SSL November exceed saturation
nl - noncarcinogen, SSL may exceed ceiling limit
nls - noncarcinogen, SSL may exceed both saturation and ceiling limit
* = where n SL < 100X c SL, ** = where n SL < 10X c SL

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NMED - Risk Assessment Guidance for Site Investigations and Remediation (June 14, 2012)
EPA - Regional Screening Levels (November 2012)

Table 6
Groundwater Screening Levels
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	NMED			EPA		
Analyte	NMED WQCC Standards (mg/L)	NMED Tap Water mg/L	Tap Water key	EPA Screening Levels Tap Water (mg/L)	Tap Water key	MCL (mg/L)
Acenaphthene	-	**2.19**	n	4.00E-01	n	-
Acenaphthylene	-	-	-	-	-	-
Acetone	-	**21.78289**	n	1.20E+01	n	-
Aniline	-	-	-	**1.20E-01**	c**	-
Anthracene	-	**10.95**	n	1.30E+00	n	-
Antimony	-	0.0146	n	6.00E-03	n	**0.006**
Arsenic	0.1	0.000448	c	4.50E-04	c	**0.01**
Azobenzene	-	-	-	**1.00E-03**	c	-
Barium	**1**	7.3	n	2.90E+00	n	2
Benz(a)anthracene	-	**0.000295**	c	2.90E-04	c	-
Benzene	0.01	0.00413	c	3.90E-03	c*	**0.005**
Benzo(a)pyrene	0.0007	2.95E-05	c	2.90E-05	c	**0.0002**
Benzo(b)fluoranthene	-	**0.000295**	c	2.90E-04	c	-
Benzo(g,h,i)perylene	-	-	-	-	-	-
Benzo(k)fluoranthene	-	**0.00295**	c	2.90E-03	c	-
Benzoic acid	-	-	-	**5.80E+01**	n	-
Benzyl alcohol	-	-	-	**1.50E+00**	n	-
Beryllium	-	0.073	n	1.60E-02	n	**0.004**
Bis(2-chloroethoxy)methane	-	-	-	**4.60E-02**	n	-
Bis(2-chloroethyl)ether	-	**0.000119**	c	1.20E-04	c	-
Bis(2-chloroisopropyl)ether	-	**0.0096**	c	3.10E-03	c	-
Bis(2-ethylhexyl)phthalate	-	0.048	c	4.80E-02	c*	**0.006**
Bromobenzene	-	-	-	**5.40E-02**	n	-
Bromodichloromethane	-	0.001173	c	1.20E-03	c	**0.08**
Bromoform	-	0.085063	c	7.90E-02	c*	**0.08**
Bromomethane	-	**0.008661**	n	7.00E-03	n	-
4-Bromophenyl phenyl ether	-	-	-	-	-	-
Butyl benzyl phthalate	-	-	-	**1.40E-01**	c*	-
2-Butanone (MEK)	-	**7.064516**	n	4.90E+00	n	-
Cadmium	0.01	0.01825	n	-	-	-
Carbazole	-	-	-	-	-	-
Carbon disulfide	-	**1.042857**	n	7.20E-01	n	-
Carbon tetrachloride	0.01	0.004396	c	3.90E-03	c	**0.005**
Chlorobenzene	-	0.09125	n	7.20E-02	n	**0.1**
Chloroethane	-	**20.85714**	n	2.10E+01	n	-
Chloroform	0.1	0.001928	c	1.90E-03	c	**0.08**
Chloromethane	-	**0.187714**	n	1.90E-01	n	-
4-Chloro-3-methylphenol	-	-	-	**1.10E+00**	n	-
4-Chloroaniline	-	-	-	**3.20E-03**	c	-
4-Chlorophenyl phenyl ether	-	-	-	-	-	-
4-Chlorotoluene	-	-	-	**1.90E-01**	n	-
2-Chloronaphthalene	-	**0.00121**	n	5.50E-01	n	-
2-Chlorophenol	-	**0.1825**	n	7.10E-02	n	-
2-Chlorotoluene	-	**0.73**	n	1.80E-01	n	-

Table 6
Groundwater Screening Levels
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	NMED			EPA		
Analyte	NMED WQCC Standards (mg/L)	NMED Tap Water mg/L	Tap Water key	EPA Screening Levels Tap Water (mg/L)	Tap Water key	MCL (mg/L)
Chromium III	**0.05**	54.75	n	1.60E+00	n	-
Chromium VI	**0.05**	0.000431	c	3.10E-04	c	-
Chrysene	-	**0.029499**	c	2.90E-02	c	-
Cobalt	**0.05**	-	-	4.70E-03	n	-
Cyanide, Total	**0.2**	0.0219	n	1.40E-03	n	0.2
Dibenz(a,h)anthracene	-	**2.95E-05**	c	2.90E-05	c	-
Dibenzofuran	-	-	-	**5.80E-03**	n	-
Dibromochloromethane	-	0.001471	c	1.50E-03	c	**0.08**
cis-1,2-DCE	-	0.073	n	2.80E-02	n	**0.07**
trans-1,2-DCE	-	0.106829	n	8.60E-02	n	**0.1**
cis-1,3-Dichloropropene	-	**0.004329**	c	-	-	-
trans-1,3-Dichloropropene	-	-	-	-	-	-
Dibromomethane	-	**0.008156**	n	7.90E-03	n	-
1,2-Dibromo-3-chloropropane	-	3.16E-06	c	3.20E-06	c	**0.0002**
1,2-Dibromoethane (EDB)	0.0001	6.53E-05	c	6.50E-05	c	**0.00005**
1,2-Dichlorobenzene	-	0.370141	n	2.80E-01	n	**0.6**
1,3-Dichlorobenzene	-	-	-	-	-	-
1,4-Dichlorobenzene	-	0.004272	c	4.20E-03	c	**0.075**
3,3´-Dichlorobenzidine	-	**0.001493**	c	1.10E-03	c	-
Dichlorodifluoromethane	-	**0.202778**	n	1.90E-01	n	-
1,1-Dichloroethane	**0.025**	0.024176	c	2.40E-02	c	-
1,2-Dichloroethane (EDC)	0.01	0.001493	c	1.50E-03	c*	**0.005**
1,1-Dichloroethene	**0.005**	0.339535	n	2.60E-01	n	0.007
2,4-Dichlorophenol	-	**0.1095**	n	3.50E-02	n	-
1,2-Dichloropropane	-	0.00386	c	3.80E-03	c*	**0.005**
2,2-Dichloropropane	-	-	-	-	-	-
1,3-Dichloropropane	-	-	-	**2.90E-01**	n	-
1,1-Dichloropropene	-	-	-	-	-	-
Diethyl phthalate	-	**29.2**	n	1.10E+01	n	-
Dimethyl phthalate	-	**365**	n	-	-	-
2,4-Dimethylphenol	-	**0.73**	n	2.70E-01	n	-
4,6-Dinitro-2-methylphenol	-	-	-	**1.20E-03**	n	-
2,4-Dinitrophenol	-	**0.073**	n	3.00E-02	n	-
2,4-Dinitrotoluene	-	**0.002168**	c	2.00E-03	c	-
2,6-Dinitrotoluene	-	**0.0365**	n	1.50E-02	n	-
Di-n-butyl phthalate	-	**3.65**	n	6.70E-01	n	-
Di-n-octyl phthalate	-	-	-	-	-	-
Ethylbenzene	0.75	0.014761	c	1.30E-02	c	**0.7**
Fluoranthene	-	**1.46**	n	6.30E-01	n	-
Fluorene	-	**1.46**	n	2.20E-01	n	-
Hexachlorobenzene	-	0.00042	c	4.20E-04	c	**0.001**
Hexachlorobutadiene	-	**0.008615**	c	2.60E-03	c*	-
Hexachlorocyclopentadiene	-	0.219	n	2.20E-02	n	**0.05**
Hexachloroethane	-	**0.0168**	c	7.90E-03	c**	-

Table 6
Groundwater Screening Levels
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	NMED			EPA		
Analyte	NMED WQCC Standards (mg/L)	NMED Tap Water mg/L	Tap Water key	EPA Screening Levels Tap Water (mg/L)	Tap Water key	MCL (mg/L)
2-Hexanone	-	**0.876**	n	3.40E-02	n	-
Indeno(1,2,3-cd)pyrene	-	**0.000295**	c	2.90E-04	c	-
Iron, Total	**1**	25.55	n	1.10E+01	n	-
Isophorone	-	**0.707368**	c	6.70E-01	c*	-
Isopropylbenzene (Cumene)	-	**0.67907**	n	3.90E-01	n	-
4-Isopropyltoluene	-	-	-	-	-	-
Lead	0.05	-	-	-	L	**0.015**
Manganese	**0.2**	0.876	n	-	-	-
Mercury	**0.002**	0.000626	n	6.30E-04	n	**0.002**
Methyl tert-butyl ether (MTBE)	-	**0.124661**	c	1.20E-01	c	-
Methylene chloride	0.1	0.186383	n	9.90E-02	c**	**0.005**
1-Methylnaphthalene	-	-	-	**9.70E-03**	c	-
2-Methylnaphthalene	-	-	-	**2.70E-02**	n	-
2-Methylphenol	-	-	-	**7.20E-01**	n	-
3+4-Methylphenol	-	-	-	-	-	-
4-Methyl-2-pentanone	-	-	-	**1.00E+00**	n	-
Naphthalene	-	**0.001431**	c	1.40E-03	c*	-
n-Butylbenzene	-	-	-	**7.80E-01**	n	-
Nickel	**0.2**	0.73	n	3.00E+00	n	-
2-Nitroaniline	-	-	-	**1.50E-01**	n	-
3-Nitroaniline	-	-	-	-	-	-
4-Nitroaniline	-	-	-	**3.30E-02**	c*	-
2-Nitrophenol	-	-	-	-	-	-
4-Nitrophenol	-	-	-	-	-	-
Nitrobenzene	-	**0.001217**	c	1.20E-03	c*	-
N-Nitrosodimethylamine	-	**4.22E-06**	c	4.20E-06	c	
N-Nitrosodi-n-propylamine	-	-	-	**9.30E-05**	c	-
N-Nitrosodiphenylamine	-	**0.137143**	c	1.00E-01	c	-
n-Propylbenzene	-	-	-	**5.30E-01**	n	-
Pentachlorophenol	-	**0.00168**	c	3.50E-04	c	**0.001**
Phenanthrene	-	**1.095**	n	-	-	-
Phenol	**0.005**	10.95	n	4.50E+00	n	-
Pyrene	-	**1.095**	n	8.70E-02	n	-
Pyridine	-	-	-	**1.50E-02**	n	-
sec-Butylbenzene	-	-	-	-	-	-
Selenium	**0.05**	0.1825	n	7.80E-02	n	**0.05**
Silver	**0.05**	0.1825	n	7.10E-02	n	-
Styrene	-	1.622222	n	1.10E+00	n	**0.1**
tert-Butylbenzene	-	-	-	-	-	-
Tetrachloroethene (PCE)	0.02	0.001081	c	9.70E-02	c**	**0.005**
1,1,1,2-Tetrachloroethane	-	**0.005242**	c	5.00E-03	c	-
Toluene	**0.75**	2.28125	n	8.60E-01	n	1
1,2,3-Trichlorobenzene	-	-	-	**5.20E-02**	n	-
1,2,4-Trichlorobenzene	-	0.004124	n	9.90E-03	c**	**0.07**

Table 6
Groundwater Screening Levels
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

	NMED			EPA		
Analyte	NMED WQCC Standards (mg/L)	NMED Tap Water mg/L	Tap Water key	EPA Screening Levels Tap Water (mg/L)	Tap Water key	MCL (mg/L)
2,4,5-Trichlorophenol	-	**3.65**	n	8.90E-01	n	-
2,4,6-Trichlorophenol	-	**0.0365**	n	3.50E-02	c**	-
1,2,3-Trichloropropane	-	**7.18E-06**	c	6.50E-06	c	-
1,2,4-Trimethylbenzene	-	-	-	**1.50E-02**	n	-
1,1,1-Trichloroethane	**0.06**	9.125	n	7.50E+00	n	0.2
1,1,2,2-Tetrachloroethane	**0.02**	0.000671	c	6.60E-04	c	-
1,1,2-Trichloroethane	0.1	0.000416	n	2.40E-03	c**	**0.005**
Trichloroethene (TCE)	0.1	0.003395	n	4.40E-03	c**	**0.005**
Trichlorofluoromethane	-	**1.288235**	n	1.10E+00	n	-
1,3,5-Trimethylbenzene	-	-	-	**8.70E-02**	n	-
Vanadium	-	**0.1825**	n	7.80E-02	n	-
Vinyl chloride	**0.001**	0.000162	c	1.50E-04	c	0.002
Xylenes, Total	**0.62**	0.202778	n	1.90E-01	n	10
Zinc	**10**	10.95	n	4.70E+00	n	-
General Chemistry	-					
Chloride	-	-	-	-	-	-
Fluoride	**1.6**	1.46	n	0.93	n	-
Sulfate	-	-	-	-	-	-
Total Dissolved Solids	-	-	-	-	-	-
Diesel Range Organics (DRO)	-	-	-	-	-	-
Gasoline Range Organics (GRO)	-	-	-	-	-	-
Motor Oil Range Organics (MRO)	-	-	-	-	-	-

c - cancer, * = where n SL < 100X c SL, ** = where n SL < 10X c SL
n - noncancer
620 - Bolded value is applicable screening level
-
EPA - Regional Screening Levels (November 2012); carcs multiplied by 10
NMED WQCC standards - Title 20 Chapter 6, Part 2, - 20.6.2.3101 Standards for Ground Water of 10,000 mg/l TDS Concentration or less

Table 7
Aeration Basin Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	Units	SWMU 1-1 (10-12')	SWMU 1-1 (13-14')	SWMU 1-1 (2-4')	SWMU 1-2 (10-11')	SWMU 1-2 (14-16')	SWMU 1-2 (17-17.25')	SWMU 1-2 (19.5-20')	SWMU 1-2 (6-8')	SWMU 1-3 (10-11')	SWMU 1-3 (11-11.25')	SWMU 1-3 (18.5-19.5')	SWMU 1-3 (19.5-20')	SWMU 1-3 (2-4')	SWMU 1-4 (10-12')	SWMU 1-4 (17-18')
										1210372-002 10/5/2012	1210372-003 10/5/2012	1210372-001 10/5/2012	1210279-002 10/2/2012	1210279-003 10/2/2012	1210279-004 10/2/2012	1210279-005 10/2/2012	1210279-001 10/2/2012	1210279-009 10/2/2012	1210279-010 10/2/2012	1210279-011 10/2/2012	1210279-012 10/2/2012	1210279-008 10/2/2012	1210332-007 10/3/2012	1210332-002 10/3/2012
Metals (mg/kg)																								
Antimony	3.13E+01	(1)	1.24E+02	(4)	3.05E+02	(7)	3.13E+01	-	mg/Kg	<12.5	<25	<12.5	<4.9996	<4.9997	<5	<5	<5.0001	<5	<5	<5	<5	<2.5	<12.5	<12.5
Arsenic	3.90E+00	(1)	5.30E+01	(4)	6.05E+00	(7)	3.90E+00	-	mg/Kg	<12.5	<25	<12.5	<4.9996	<4.9997	<4.9998	<4.9999	<5.0001	<4.9996	<5.0005	<5.0002	<5.0003	<49.9963	<12.5	<12.5
Barium	1.56E+04	(1)	4.35E+03	(4)	1.39E+05	(7)	4.35E+03	-	mg/Kg	300	630	450	220	680	180	1300	39	220	110	270	400	770	360	370
Beryllium	1.56E+02	(1)	1.44E+02	(4)	2.66E+04	(7)	1.44E+02	-	mg/Kg	1.2	<1.5	<0.75	0.74	0.58	0.74	0.77	0.61	0.72	0.63	0.79	0.83	0.39	<0.75	<0.75
Cadmium	7.03E+01	(1)	2.77E+02	(4)	6.33E+02	(7)	7.03E+01	-	mg/Kg	<0.5	<1	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.5	<0.5
Chromium III	1.17E+05	(1)	4.65E+05	(4)	4.54E+10	(7)	1.17E+05	-	mg/Kg	16	6.8	400	6	6.3	6.9	12	8.1	7.6	4.8	9.3	10	3.8	3.7	7.9
Chromium VI	2.97E+00	(1)	6.56E+01	(4)	3.83E+00	(7)	2.97E+00	-	mg/Kg	16	6.8	400	6	6.3	6.9	12	8.1	7.6	4.8	9.3	10	3.8	3.7	7.9
Cobalt	2.30E+01	(2)	3.00E+02	(5)	9.68E+01	(8)	2.30E+01	-	mg/Kg	7.5	8	8.1	3.3	3.5	3.8	11	3.9	3.6	3.2	5.4	5.7	2.4	2	3.9
Cyanide	4.69E+01	(1)	1.86E+02	(4)	1.02E+02	(7)	4.69E+01	-	mg/Kg	<0.3	<0.3	1.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	1.6
Iron	5.48E+04	(1)	2.17E+05	(4)	2.98E+05	(7)	5.48E+04	-	mg/Kg	23000	8100	16000	11000	12000	12000	17000	12000	11000	10000	16000	16000	4800	5300	10000
Lead	4.00E+02	(1)	8.00E+02	(4)	6.45E+03	(8)	4.00E+02	-	mg/Kg	3.3	<2.5	80	3.9	3.5	4.8	3.9	3.5	3.4	4	4.8	2.8	<0.25	3.1	2.7
Manganese	1.86E+03	(1)	4.40E+02	(4)	2.64E+04	(7)	4.40E+02	-	mg/Kg	290	2800	480	310	360	280	1200	230	420	380	510	610	340	550	570
Mercury	1.56E+01	(1)	1.36E+01	(4)	1.51E+01	(7)	1.36E+01	-	mg/Kg	<0.033	<0.033	1.4	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033
Nickel	1.56E+03	(1)	6.19E+03	(4)	2.20E+04	(7)	1.56E+03	-	mg/Kg	15	8.3	15	5.6	5.7	6.7	16	6	5.7	5	10	12	3.8	2.9	6
Selenium	3.91E+02	(1)	1.55E+03	(4)	4.45E+02	(7)	3.91E+02	-	mg/Kg	<12.5	<25	<12.5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2.5	<12.5	<12.5
Silver	3.91E+02	(1)	1.55E+03	(4)	7.22E+02	(7)	3.91E+02	-	mg/Kg	<1.25	<2.5	<1.25	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.25	<1.25	<1.25
Vanadium	3.91E+02	(1)	1.55E+03	(4)	8.42E+04	(7)	3.91E+02	-	mg/Kg	25	30	20	12	13	12	14	16	15	10	11	10	11	<12.5	17
Zinc	2.35E+04	(1)	9.29E+04	(4)	3.14E+05	(7)	2.35E+04	-	mg/Kg	29	<25	720	13	13	13	30	16	11	10	15	16	9.1	<12.5	17
Volatile Organic Compounds - (EPA Method 8260) mg/kg																								
1,1,1,2-Tetrachloroethane	2.91E+01	(1)	7.79E+02	(4)	7.59E-01	(7)	7.59E-01	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
1,1,1-Trichloroethane	1.56E+04	(1)	1.48E+04	(4)	1.34E+03	(7)	1.34E+03	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
1,1,2,2-Tetrachloroethane	8.02E+00	(1)	2.21E+02	(4)	9.82E-02	(7)	9.82E-02	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
1,1,2-Trichloroethane	2.81E+00	(1)	4.72E+02	(4)	5.14E-02	(7)	5.14E-02	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
1,1-Dichloroethane	6.45E+01	(1)	1.70E+03	(4)	2.75E+00	(7)	2.75E+00	-	mg/Kg	<1	<0.1	<5	<0.0012	<0.0012	<0.0012	<0.001	<0.1	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.1
1,1-Dichloroethene	4.49E+02	(1)	4.32E+02	(4)	5.36E+01	(7)	5.36E+01	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
1,1-Dichloropropene	-	-	-	-	-	-	-	-	mg/Kg	<1	<0.1	<5	<0.0012	<0.0012	<0.0012	<0.001	<0.1	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.1
1,2,3-Trichlorobenzene	4.90E+01	(2)	4.90E+02	(5)	6.92E+00	(8)	6.92E+00	-	mg/Kg	<1	<0.1	<5	<0.0012	<0.0012	<0.0012	<0.001	<0.1	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.1
1,2,3-Trichloropropane	4.97E-02	(1)	7.23E+00	(4)	1.15E-03	(7)	1.15E-03	-	mg/Kg	<1	<0.1	<5	<0.0012	<0.0012	<0.0012	<0.001	<0.1	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.1
1,2,4-Trichlorobenzene	7.30E+01	(1)	6.87E+01	(4)	4.21E+00	(7)	4.21E+00	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
1,2,4-Trimethylbenzene	6.20E+01	(2)	2.60E+02	(5)	9.68E+00	(8)	9.68E+00	-	mg/Kg	<0.5	<0.05	17	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	0.00132	0.00128	<0.0011	0.25
1,2-Dibromo-3-chloropropane	1.86E+00	(1)	5.07E+00	(4)	5.07E-04	(7)	5.07E-04	-	mg/Kg	<1	<0.1	<5	<0.0012	<0.0012	<0.0012	<0.001	<0.1	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.1
1,2-Dibromoethane (EDB)	5.88E-01	(1)	1.60E+01	(4)	7.10E-03	(7)	7.10E-03	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
1,2-Dichlorobenzene	2.31E+03	(1)	2.71E+03	(4)	1.29E+02	(7)	1.29E+02	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
1,2-Dichloroethane (EDC)	7.89E+00	(1)	5.87E+01	(4)	1.64E-01	(7)	1.64E-01	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
1,2-Dichloropropane	1.52E+01	(1)	2.50E+01	(4)	4.94E-01	(7)	4.94E-01	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.00E+04	(5)	5.53E+01	(8)	5.53E+01	-	mg/Kg	<0.5	<0.05	5.8	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	0.073
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
1,3-Dichloropropane	1.60E+03	(2)	2.00E+04	(5)	4.56E+01	(8)	4.56E+01	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
1,4-Dichlorobenzene	3.17E+01	(1)	8.31E+02	(4)	1.47E+00	(7)	1.47E+00	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
1-Methylnaphthalene	1.60E+02	(3)	5.30E+02	(6)	2.35E+00	(8)	2.35E+00	-	mg/Kg	6.4	<0.2	35	<0.0046	<0.0048	<0.0047	<0.0042	<0.2	<0.0049	<0.0043	<0.0052	<0.0048	<0.0042	<0.0045	0.55
2,2-Dichloropropane	-	-	-	-	-	-	-	-	mg/Kg	<1	<0.1	<5	<0.0012	<0.0012	<0.0012	<0.001	<0.1	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.1
2-Butanone (MEK)	3.71E+04	(1)	8.43E+04	(4)	5.87E+02	(7)	5.87E+02	-	mg/Kg	<5	<0.5	<25	<0.0116	<0.0121	<0.0116	<0.0104	<0.5	<0.0123	<0.0108	<0.0129	<0.012	<0.0105	<0.0113	<0.5
2-Chlorotoluene	1.56E+03	(1)	6.19E+03	(4)	2.57E+02	(7)	2.57E+02	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
2-Hexanone	9.38E+02	(1)	9.73E+02	(4)	3.53E+03	(7)	9.38E+02	-	mg/Kg	<5	<0.5	<25	<0.0116	<0.0121	<0.0116	<0.0104	<0.5	<0.0123	<0.0108	<0.0129	<0.012	<0.0105	<0.0113	<0.5
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	6.45E+01	(8)	6.45E+01	-	mg/Kg	13	<0.2	48	<0.0046	<0.0048	<0.0047	<0.0042	<0.2	<0.0049	<0.0043	<0.0052	<0.0048	<0.0042	<0.0045	0.93
4-Chlorotoluene	1.60E+03	(2)	2.00E+04	(5)	8.30E+01	(8)	8.30E+01	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
4-Isopropyltoluene	-	-	-	-	-	-	-	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
4-Methyl-2-pentanone	5.30E+03	(2)	5.30E+04	(5)	1.06E+02	(8)	1.06E+02	-	mg/Kg	<5	<0.5	<25	<0.0116	<0.0121	<0.0116	<0.0104	<0.5	<0.0123	<0.0108	<0.0129	<0.012	<0.0105	<0.0113	<0.5
Acetone	6.66E+04	(1)	2.21E+05	(4)	1.78E+03	(7)	1.78E+03	-	mg/Kg	<7.5	<0.75	<37.5	0.0135	0.0158	0.0877	0.0127	<0.75	0.019	0.0469	<0.0129	<0.012	0.0418	0.0153	<0.75
Benzene	1.54E+01	(1)	1.38E+02	(4)	7.96E-01	(7)	7.96E-01	-	mg/Kg	<0.5	<0.05	3.2	<0.0012	0.00194	0.00139	0.00395	<0.05	<0.0012	<0.0011	0.00269	0.00855	<0.001	<0.0011	<0.05
Bromobenzene	3.00E+02	(2)	1.80E+03	(5)	1.66E+01	(8)	1.66E+01	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05

Table 7
Aeration Basin Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	Units	SWMU 1-1 (10-12')	SWMU 1-1 (13-14')	SWMU 1-1 (2-4')	SWMU 1-2 (10-11')	SWMU 1-2 (14-16')	SWMU 1-2 (17-17.25')	SWMU 1-2 (19.5-20')	SWMU 1-2 (6-8')	SWMU 1-3 (10-11')	SWMU 1-3 (11-11.25')	SWMU 1-3 (18.5-19.5')	SWMU 1-3 (19.5-20')	SWMU 1-3 (2-4')	SWMU 1-4 (10-12')	SWMU 1-4 (17-18')
										1210372-002 10/5/2012	1210372-003 10/5/2012	1210372-001 10/5/2012	1210279-002 10/2/2012	1210279-003 10/2/2012	1210279-004 10/2/2012	1210279-005 10/2/2012	1210279-001 10/2/2012	1210279-009 10/2/2012	1210279-010 10/2/2012	1210279-011 10/2/2012	1210279-012 10/2/2012	1210279-008 10/2/2012	1210332-007 10/3/2012	1210332-002 10/3/2012
Bromodichloromethane	5.41E+00	(1)	1.43E+02	(4)	1.25E-01	(7)	1.25E-01	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
Bromoform	6.16E+02	(1)	4.76E+03	(4)	2.78E+02	(7)	2.78E+02	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
Bromomethane	1.65E+01	(1)	1.64E+01	(4)	8.86E-01	(7)	8.86E-01	-	mg/Kg	<1.5	<0.15	<7.5	<0.0012	<0.0012	<0.0012	<0.001	<0.15	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.15
Carbon disulfide	1.53E+03	(1)	1.58E+03	(4)	1.30E+02	(7)	1.30E+02	-	mg/Kg	<5	<0.5	<25	<0.0116	<0.0121	<0.0116	<0.0104	<0.5	<0.0123	<0.0108	<0.0129	<0.012	<0.0105	<0.0113	<0.5
Carbon tetrachloride	1.08E+01	(1)	2.26E+02	(4)	7.39E-01	(7)	7.39E-01	-	mg/Kg	<1	<0.1	<5	<0.0012	<0.0012	<0.0012	<0.001	<0.1	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.1
Chlorobenzene	3.76E+02	(1)	4.06E+02	(4)	2.27E+01	(7)	2.27E+01	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
Chloroethane	2.98E+04	(1)	2.61E+04	(4)	2.48E+03	(7)	2.48E+03	-	mg/Kg	<1	<0.1	<5	<0.0012	<0.0012	<0.0012	<0.001	<0.1	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.1
Chloroform	5.86E+00	(1)	1.54E+02	(4)	2.12E-01	(7)	2.12E-01	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
Chloromethane	2.75E+02	(1)	2.41E+02	(4)	2.03E+01	(7)	2.03E+01	-	mg/Kg	<1.5	<0.15	<7.5	<0.0012	<0.0012	<0.0012	<0.001	<0.15	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.15
cis-1,2-DCE	1.56E+02	(1)	6.19E+02	(4)	8.47E+00	(7)	8.47E+00	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
cis-1,3-Dichloropropene	3.37E+01	(1)	2.09E+02	(4)	5.71E-01	(7)	5.71E-01	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
Dibromochloromethane	1.21E+01	(1)	3.32E+02	(4)	1.52E-01	(7)	1.52E-01	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
Dibromomethane	5.16E+01	(1)	3.10E+03	(4)	7.89E-01	(7)	7.89E-01	-	mg/Kg	<1	<0.1	<5	<0.0012	<0.0012	<0.0012	<0.001	<0.1	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.1
Dichlorodifluoromethane	1.68E+02	(1)	1.49E+02	(4)	1.71E+02	(7)	1.49E+02	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
Ethylbenzene	6.84E+01	(1)	1.83E+03	(4)	5.98E+00	(7)	5.98E+00	-	mg/Kg	<0.5	<0.05	5.8	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	0.00125	<0.001	<0.0011	0.05
Hexachlorobutadiene	6.11E+01	(1)	2.38E+02	(4)	5.91E+00	(7)	5.91E+00	-	mg/Kg	<1	<0.1	<5	<0.0012	<0.0012	<0.0012	<0.001	<0.1	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.1
Isopropylbenzene	2.43E+03	(1)	2.81E+03	(4)	3.99E+02	(7)	3.99E+02	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
Methyl tert-butyl ether (MTBE)	9.01E+02	(1)	2.49E+04	(4)	1.11E+01	(7)	1.11E+01	-	mg/Kg	<0.5	<0.05	<2.5	0.00148	0.00518	0.00412	<0.001	<0.05	<0.0012	0.00115	0.00256	<0.0012	<0.001	<0.0011	<0.05
Methylene chloride	4.09E+02	(1)	1.12E+03	(4)	1.90E+01	(7)	1.90E+01	-	mg/Kg	<1.5	<0.15	<7.5	<0.0035	<0.0036	<0.0035	<0.0031	<0.15	<0.0037	<0.0033	<0.0039	<0.0036	<0.0031	<0.0034	<0.15
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	1.64E+00	(7)	1.64E+00	-	mg/Kg	1.3	<0.1	13	<0.0023	<0.0024	<0.0023	<0.0021	<0.1	<0.0025	<0.0022	<0.0026	<0.0024	<0.0021	<0.0023	0.4
n-Butylbenzene	3.90E+03	(2)	5.10E+04	(5)	1.15E+03	(8)	1.15E+03	-	mg/Kg	<1.5	<0.15	<7.5	<0.0012	<0.0012	<0.0012	<0.001	<0.15	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.15
n-Propylbenzene	3.40E+03	(2)	2.10E+04	(5)	4.56E+02	(8)	4.56E+02	-	mg/Kg	<0.5	<0.05	2.8	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
sec-Butylbenzene	-	-	-	-	-	-	-	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
Styrene	7.28E+03	(1)	9.99E+03	(4)	6.40E+02	(7)	6.40E+02	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
tert-Butylbenzene	-	-	-	-	-	-	-	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
Tetrachloroethene (PCE)	7.02E+00	(1)	2.12E+02	(4)	1.98E-01	(7)	1.98E-01	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
Toluene	5.27E+03	(1)	1.34E+04	(4)	5.84E+02	(7)	5.84E+02	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	0.00151	<0.0012	0.00333	<0.05	<0.0012	<0.0011	0.00164	0.005	0.00187	<0.0011	<0.05
trans-1,2-DCE	2.70E+02	(1)	2.73E+02	(4)	1.24E+01	(7)	1.24E+01	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
Trichloroethene (TCE)	8.77E+00	(1)	7.68E+00	(4)	4.85E-01	(7)	4.85E-01	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
Trichlorofluoromethane	1.41E+03	(1)	1.30E+03	(4)	4.10E+02	(7)	4.10E+02	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
Vinyl chloride	7.28E-01	(1)	1.49E+02	(4)	2.50E-02	(7)	2.50E-02	-	mg/Kg	<0.5	<0.05	<2.5	<0.0012	<0.0012	<0.0012	<0.001	<0.05	<0.0012	<0.0011	<0.0013	<0.0012	<0.001	<0.0011	<0.05
Xylenes, Total	8.14E+02	(1)	7.43E+02	(4)	7.21E+01	(7)	7.21E+01	-	mg/Kg	<1	<0.1	24	<0.0023	<0.0024	<0.0023	0.00212	<0.1	<0.0025	<0.0022	<0.0026	0.00344	<0.0021	<0.0023	0.35
Semi Volatile Organics - (EPA Method 8270) mg/kg																								
1,2,4-Trichlorobenzene	7.30E+01	(1)	6.87E+01	(4)	4.21E+00	(7)	4.21E+00	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
1,2-Dichlorobenzene	2.31E+03	(1)	2.71E+03	(4)	1.29E+02	(7)	1.29E+02	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
1,4-Dichlorobenzene	3.17E+01	(1)	8.31E+02	(4)	1.47E+00	(7)	1.47E+00	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
1-Methylnaphthalene	1.60E+02	(3)	5.30E+02	(6)	2.35E+00	(8)	2.35E+00	-	mg/Kg	7.9	<0.1987	43	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
2,4,5-Trichlorophenol	6.11E+03	(1)	2.38E+04	(4)	4.78E+03	(7)	4.78E+03	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
2,4,6-Trichlorophenol	6.11E+01	(1)	2.38E+02	(4)	4.78E+01	(7)	4.78E+01	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
2,4-Dichlorophenol	1.83E+02	(1)	7.15E+02	(4)	4.60E+01	(7)	4.60E+01	-	mg/Kg	<0.4016	<0.3975	<2.006	<0.3995	<0.3962	<0.3989	<0.4009	<0.4025	<0.4079	<0.3987	<0.3956	<0.4031	<0.4013	<0.8	<0.4012
2,4-Dimethylphenol	1.22E+03	(1)	4.76E+03	(4)	3.07E+02	(7)	3.07E+02	-	mg/Kg	<0.3012	<0.2981	<1.5045	<0.2996	<0.2971	<0.2992	<0.3007	<0.3019	<0.3059	<0.299	<0.2967	<0.3023	<0.301	<0.6	0.64
2,4-Dinitrophenol	1.22E+02	(1)	4.76E+02	(4)	2.91E+01	(7)	2.91E+01	-	mg/Kg	<0.4016	<0.3975	<2.006	<0.3995	<0.3962	<0.3989	<0.4009	<0.4025	<0.4079	<0.3987	<0.3956	<0.4031	<0.4013	<0.8	<0.4012
2,4-Dinitrotoluene	1.57E+01	(1)	4.76E+02	(4)	1.04E+00	(7)	1.04E+00	-	mg/Kg	<0.502	<0.4969	<2.5075	<0.4993	<0.4952	<0.4987	<0.5012	<0.5032	<0.5099	<0.4983	<0.4946	<0.5039	<0.5017	<1	<0.5015
2,6-Dinitrotoluene	6.11E+01	(1)	2.38E+02	(4)	1.77E+01	(7)	1.77E+01	-	mg/Kg	<0.502	<0.4969	<2.5075	<0.4993	<0.4952	<0.4987	<0.5012	<0.5032	<0.5099	<0.4983	<0.4946	<0.5039	<0.5017	<1	<0.5015
2-Chloronaphthalene	6.11E+01	(1)	2.94E+02	(4)	4.01E-01	(7)	4.01E-01	-	mg/Kg	<0.251	<0.2484	<1.2538	<0.2497	<0.2476	<0.2493	<0.2506	<0.2516	<0.2549	<0.2492	<0.2473	<0.2519	<0.2508	<0.5	<0.2508
2-Chlorophenol	3.91E+02	(1)	1.55E+03	(4)	5.33E+01	(7)	5.33E+01	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	6.45E+01	(8)	6.45E+01	-	mg/Kg	14	<0.1987	55	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	0.27
2-Methylphenol	3.10E+03	(2)	3.10E+04	(5)	2.67E+02	(8)	2.67E+02	-	mg/Kg	<0.502	<0.4969	<2.5075	<0.4993	<0.4952	<0.4987	<0.5012	<0.5032	<0.5099	<0.4983	<0.4946	<0.5039	<0.5017	<1	<0.5015
2-Nitroaniline	6.10E+02	(2)	6.00E+03	(5)	2.86E+01	(8)	2.86E+01	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
2-Nitrophenol	-	-	-	-	-	-	-	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006

Table 7
Aeration Basin Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	Units	SWMU 1-1 (10-12')	SWMU 1-1 (13-14')	SWMU 1-1 (2-4')	SWMU 1-2 (10-11')	SWMU 1-2 (14-16')	SWMU 1-2 (17-17.25')	SWMU 1-2 (19.5-20')	SWMU 1-2 (6-8')	SWMU 1-3 (10-11')	SWMU 1-3 (11-11.25')	SWMU 1-3 (18.5-19.5')	SWMU 1-3 (19.5-20')	SWMU 1-3 (2-4')	SWMU 1-4 (10-12')	SWMU 1-4 (17-18')
										1210372-002 10/5/2012	1210372-003 10/5/2012	1210372-001 10/5/2012	1210279-002 10/2/2012	1210279-003 10/2/2012	1210279-004 10/2/2012	1210279-005 10/2/2012	1210279-001 10/2/2012	1210279-009 10/2/2012	1210279-010 10/2/2012	1210279-011 10/2/2012	1210279-012 10/2/2012	1210279-008 10/2/2012	1210332-007 10/3/2012	1210332-002 10/3/2012
3,3'-Dichlorobenzidine	1.08E+01	(1)	3.64E+02	(4)	3.41E+00	(7)	3.41E+00	-	mg/Kg	<0.251	<0.2484	<1.2538	<0.2497	<0.2476	<0.2493	<0.2506	<0.2516	<0.2549	<0.2492	<0.2473	<0.2519	<0.2508	<0.5	<0.2508
3+4-Methylphenol	-	-	-	-	-	-	-	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
3-Nitroaniline	-	-	-	-	-	-	-	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
4,6-Dinitro-2-methylphenol	4.90E+00	(2)	4.90E+01	(5)	9.22E-01	(8)	9.22E-01	-	mg/Kg	<0.502	<0.4969	<2.5075	<0.4993	<0.4952	<0.4987	<0.5012	<0.5032	<0.5099	<0.4983	<0.4946	<0.5039	<0.5017	<1	<0.5015
4-Bromophenyl phenyl ether	-	-	-	-	-	-	-	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
4-Chloro-3-methylphenol	6.10E+03	(2)	6.20E+04	(5)	5.99E+02	(8)	5.99E+02	-	mg/Kg	<0.502	<0.4969	<2.5075	<0.4993	<0.4952	<0.4987	<0.5012	<0.5032	<0.5099	<0.4983	<0.4946	<0.5039	<0.5017	<1	<0.5015
4-Chloroaniline	2.40E+01	(3)	8.60E+01	(6)	5.99E-02	(8)	5.99E-02	-	mg/Kg	<0.502	<0.4969	<2.5075	<0.4993	<0.4952	<0.4987	<0.5012	<0.5032	<0.5099	<0.4983	<0.4946	<0.5039	<0.5017	<1	<0.5015
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	-	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
4-Nitroaniline	2.40E+02	(3)	8.60E+02	(6)	6.45E-01	(8)	6.45E-01	-	mg/Kg	<0.4016	<0.3975	<2.006	<0.3995	<0.3962	<0.3989	<0.4009	<0.4025	<0.4079	<0.3987	<0.3956	<0.4031	<0.4013	<0.8	<0.4012
4-Nitrophenol	-	-	-	-	-	-	-	-	mg/Kg	<0.251	<0.2484	<1.2538	<0.2497	<0.2476	<0.2493	<0.2506	<0.2516	<0.2549	<0.2492	<0.2473	<0.2519	<0.2508	<0.5	<0.2508
Acenaphthene	3.44E+03	(1)	1.86E+04	(4)	7.79E+03	(7)	3.44E+03	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Acenaphthylene	-	-	-	-	-	-	-	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Aniline	8.50E+02	(3)	3.00E+03	(6)	1.80E+00	(8)	1.80E+00	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Anthracene	1.72E+04	(1)	6.68E+04	(4)	1.25E+05	(7)	1.72E+04	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Azobenzene	5.10E+01	(3)	2.30E+02	(6)	3.69E-01	(8)	3.69E-01	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Benz(a)anthracene	1.48E+00	(1)	2.13E+02	(4)	3.61E+01	(7)	1.48E+00	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Benzo(a)pyrene	1.48E-01	(1)	2.13E+01	(4)	1.20E+01	(7)	1.48E-01	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Benzo(b)fluoranthene	1.48E+00	(1)	2.13E+02	(4)	1.22E+02	(7)	1.48E+00	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Benzo(g,h,i)perylene	-	-	-	-	-	-	-	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Benzo(k)fluoranthene	1.48E+01	(1)	2.06E+03	(4)	1.20E+03	(7)	1.48E+01	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Benzoic acid	2.40E+05	(2)	2.50E+06	(5)	6.45E+03	(8)	6.45E+03	-	mg/Kg	<0.502	<0.4969	<2.5075	<0.4993	<0.4952	<0.4987	<0.5012	<0.5032	<0.5099	<0.4983	<0.4946	<0.5039	<0.5017	<1	<0.5015
Benzyl alcohol	6.10E+03	(2)	6.20E+04	(5)	1.71E+02	(8)	1.71E+02	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Bis(2-chloroethoxy)methane	1.80E+02	(2)	1.80E+03	(5)	5.07E+00	(8)	5.07E+00	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Bis(2-chloroethyl)ether	2.68E+00	(1)	7.78E+01	(4)	1.21E-02	(7)	1.21E-02	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Bis(2-chloroisopropyl)ether	9.15E+01	(1)	3.10E+03	(4)	1.07E+00	(7)	1.07E+00	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Bis(2-ethylhexyl)phthalate	3.47E+02	(1)	4.76E+03	(4)	3.97E+03	(7)	3.47E+02	-	mg/Kg	<0.502	<0.4969	<2.5075	<0.4993	<0.4952	<0.4987	<0.5012	<0.5032	<0.5099	<0.4983	<0.4946	<0.5039	<0.5017	<1	<0.5015
Butyl benzyl phthalate	2.60E+03	(3)	9.10E+03	(6)	9.22E+01	(8)	9.22E+01	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Carbazole	-	-	-	-	-	-	-	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Chrysene	1.48E+02	(1)	2.06E+04	(4)	3.68E+03	(7)	1.48E+02	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Dibenz(a,h)anthracene	1.48E-01	(1)	2.13E+01	(4)	3.90E+01	(7)	1.48E-01	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Dibenzofuran	7.80E+01	(2)	1.00E+03	(5)	5.07E+01	(8)	5.07E+01	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Diethyl phthalate	4.89E+04	(1)	1.91E+05	(4)	4.45E+03	(7)	4.45E+03	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(4)	3.71E+04	(7)	3.71E+04	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Di-n-butyl phthalate	6.11E+03	(1)	2.38E+04	(4)	3.21E+03	(7)	3.21E+03	-	mg/Kg	<0.502	<0.4969	<2.5075	<0.4993	<0.4952	<0.4987	<0.5012	<0.5032	<0.5099	<0.4983	<0.4946	<0.5039	<0.5017	<1	<0.5015
Di-n-octyl phthalate	-	-	-	-	-	-	-	-	mg/Kg	<0.251	<0.2484	<1.2538	<0.2497	<0.2476	<0.2493	<0.2506	<0.2516	<0.2549	<0.2492	<0.2473	<0.2519	<0.2508	<0.5	<0.2508
Fluoranthene	2.29E+03	(1)	8.91E+03	(4)	5.61E+04	(7)	2.29E+03	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Fluorene	2.29E+03	(1)	8.91E+03	(4)	9.36E+03	(7)	2.29E+03	-	mg/Kg	0.68	<0.1987	3.7	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Hexachlorobenzene	3.04E+00	(1)	1.03E+02	(4)	1.83E+00	(7)	1.83E+00	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Hexachlorobutadiene	6.11E+01	(1)	2.38E+02	(4)	5.91E+00	(7)	5.91E+00	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Hexachlorocyclopentadiene	3.67E+02	(1)	8.11E+02	(4)	2.43E+02	(7)	2.43E+02	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Hexachloroethane	4.28E+01	(1)	1.67E+02	(4)	3.77E+00	(7)	3.77E+00	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Indeno(1,2,3-cd)pyrene	1.48E+00	(1)	2.13E+02	(4)	3.98E+02	(7)	1.48E+00	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Isophorone	5.12E+03	(1)	4.75E+04	(4)	8.84E+01	(7)	8.84E+01	-	mg/Kg	<0.502	<0.4969	<2.5075	<0.4993	<0.4952	<0.4987	<0.5012	<0.5032	<0.5099	<0.4983	<0.4946	<0.5039	<0.5017	<1	<0.5015
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	1.64E+00	(7)	1.64E+00	-	mg/Kg	1.1	<0.1987	7.9	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Nitrobenzene	5.35E+01	(1)	3.32E+02	(4)	2.88E-01	(7)	2.88E-01	-	mg/Kg	<0.502	<0.4969	<2.5075	<0.4993	<0.4952	<0.4987	<0.5012	<0.5032	<0.5099	<0.4983	<0.4946	<0.5039	<0.5017	<1	<0.5015
N-Nitrosodi-n-propylamine	6.90E-01	(3)	2.50E+00	(6)	3.23E-03	(8)	3.23E-03	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
N-Nitrosodiphenylamine	9.93E+02	(1)	3.36E+04	(4)	2.61E+02	(7)	2.61E+02	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Pentachlorophenol	8.94E+00	(1)	3.10E+02	(4)	5.90E+00	(7)	5.90E+00	-	mg/Kg	<0.4016	<0.3975	<2.006	<0.3995	<0.3962	<0.3989	<0.4009	<0.4025	<0.4079	<0.3987	<0.3956	<0.4031	<0.4013	<0.8	<0.4012
Phenanthrene	1.83E+03	(1)	7.15E+03	(4)	1.32E+04	(7)	1.83E+03	-	mg/Kg	1.5	<0.1987	11	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Phenol	1.83E+04	(1)	6.88E+04	(4)	2.29E+03	(7)	2.29E+03	-	mg/Kg	<0.2008	<0.1987	<1.003	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Pyrene	1.72E+03	(1)	6.68E+03	(4)	4.12E+04	(7)	1.72E+03	-	mg/Kg	<0.2008	<0.1987	1.5	<0.1997	<0.1981	<0.1995	<0.2005	<0.2013	<0.2039	<0.1993	<0.1978	<0.2015	<0.2007	<0.4	<0.2006
Pyridine	7.80E+01	(2)	1.00E+03	(5)	2.44E+00	(8)	2.44E+00	-	mg/Kg	<0.502	<0.4969	<2.5075	<0.4993	<0.4952	<0.4987	<0.5012	<0.5032	<0.5099	<0.4983	<0.4946	<0.5039	<0.5017	<1	<0.5015

Table 7
Aeration Basin Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	Units	SWMU 1-1 (10-12')	SWMU 1-1 (13-14')	SWMU 1-1 (2-4')	SWMU 1-2 (10-11')	SWMU 1-2 (14-16')	SWMU 1-2 (17-17.25')	SWMU 1-2 (19.5-20')	SWMU 1-2 (6-8')	SWMU 1-3 (10-11')	SWMU 1-3 (11-11.25')	SWMU 1-3 (18.5-19.5')	SWMU 1-3 (19.5-20')	SWMU 1-3 (2-4')	SWMU 1-4 (10-12')	SWMU 1-4 (17-18')
										1210372-002 10/5/2012	1210372-003 10/5/2012	1210372-001 10/5/2012	1210279-002 10/2/2012	1210279-003 10/2/2012	1210279-004 10/2/2012	1210279-005 10/2/2012	1210279-001 10/2/2012	1210279-009 10/2/2012	1210279-010 10/2/2012	1210279-011 10/2/2012	1210279-012 10/2/2012	1210279-008 10/2/2012	1210332-007 10/3/2012	1210332-002 10/3/2012
Total Petroleum Hydrocarbons - (EPA Method 8015B) mg/kg																								
Diesel Range Organics (DRO)	1.00E+03	(10)	1.00E+03	(10)	1.00E+03	(10)	-	-	mg/Kg	820	55	**4700**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<16	<10
Gasoline Range Organics (GRO)	-	-	-	-	-	-	-	-	mg/Kg	<25	<5	410	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	13
Motor Oil Range Organics (MRO)	3.00E+03	(11)	3.00E+03	(11)	3.00E+03	(11)	-	-	mg/Kg	<510	<51	<5045	<52	<50	<48	<50	<49	<48	<50	<49	<50	<51	<82	<51

-- No screening level or analytical result available

NMED - Risk Assessment Guidance for Site Investigations and Remediation (June 14, 2012)

EPA - Regional Screening Levels (May 2012)

(1) NMED Residential Screening Level

(2) EPA Residential Screening Level

(3) EPA Residential - Screening Levels (May 2012) multiplied by 10 because the constituent is listed as carcinogenic

(4) NMED Construction Worker Screening Level

(5) EPA Industrial - Screening Levels (May 2012)

(6) EPA Industrial - Screening Levels (May 2012) multiplied by 10 pursuant to Provision VII.B. of the July 7, 2007 NMED Order because the constituent is listed as carcinogenic

(7) SoilGW NMED Dilution Attenuation Factor (DAF) = 461

(8) SoilGW Risk-based EPA DAF = 461

(9) SoilGW MCL-based EPA DAF = 461

(10) NMED Table 6-2 TPH Screening Guidelines for Potable Groundwater "uknown oil" with DAF = 1.0 - see report Section 5 for use of screening levels

(11) NMED Table 6-2 TPH Screening Guidelines for Potable Groundwater "waste oil" with DAF = 1.0 - see report Section 5 for use of screening levels

(12) Background concentrations to be determined

Bold represents value above Residential Screening Level
yellow highlight represents value above Leachate (DAF) Screening Level
Bold with yellow - value exceeds Residential Screening Level and DAF

Table 7
Aeration Basin Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	Units	SWMU 1-4 (23-24')	SWMU 1-4 (8-10')	SWMU 1-5 (10-12')	SWMU 1-5 (14-16')	SWMU 1-5 (16-18')	SWMU 1-5 (24-25')	SWMU 1-5 (26-27')	SWMU 1-5 (27-28')	SWMU 1-6 (10-11')	SWMU 1-6 (11-12')	SWMU 1-6 (2-4')	SWMU 1-6 (4-6')	SWMU 1-6 (7.5-8')	SWMU 1-7 (12-14')	SWMU 1-7 (14-16')
										1210332-003	1210332-006	1210332-012	1210332-013	1210332-014	1210332-015	1210332-008	1210332-009	1210372-016	1210372-017	1210372-020	1210372-022	1210372-023	1210372-018	1210372-019
										10/3/2012	10/3/2012	10/3/2012	10/3/2012	10/3/2012	10/3/2012	10/3/2012	10/3/2012	10/4/2012	10/4/2012	10/4/2012	10/4/2012	10/4/2012	10/4/2012	10/4/2012
Metals (mg/kg)																								
Antimony	3.13E+01	(1)	1.24E+02	(4)	3.05E+02	(7)	3.13E+01	-	mg/Kg	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<2.5	<12.5	<12.5	<12.5	<25	<12.5	<12.5	<12.5	<12.5
Arsenic	3.90E+00	(1)	5.30E+01	(4)	6.05E+00	(7)	3.90E+00	-	mg/Kg	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<2.5	<12.5	<12.5	<12.5	<25	<12.5	<12.5	<12.5	<12.5
Barium	1.56E+04	(1)	4.35E+03	(4)	1.39E+05	(7)	4.35E+03	-	mg/Kg	200	590	610	640	690	630	230	380	380	700	660	870	110	87	290
Beryllium	1.56E+02	(1)	1.44E+02	(4)	2.66E+04	(7)	1.44E+02	-	mg/Kg	1.1	<0.75	<0.75	<0.75	<0.75	<0.75	0.3	1.1	<0.75	0.96	<1.5	<0.75	0.83	1.1	0.95
Cadmium	7.03E+01	(1)	2.77E+02	(4)	6.33E+02	(7)	7.03E+01	-	mg/Kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5
Chromium III	1.17E+05	(1)	4.65E+05	(4)	4.54E+10	(7)	1.17E+05	-	mg/Kg	14	7.9	11	11	7.9	7.7	5.1	15	7.2	14	6.1	7	8.3	12	11
Chromium VI	2.97E+00	(1)	6.56E+01	(4)	3.83E+00	(7)	2.97E+00	-	mg/Kg	14	7.9	11	11	7.9	7.7	5.1	15	7.2	14	6.1	7	8.3	12	11
Cobalt	2.30E+01	(2)	3.00E+02	(5)	9.68E+01	(8)	2.30E+01	-	mg/Kg	5.9	4	3.3	3.9	3.7	3.5	2.1	7.8	3.8	6.2	3.5	5.7	4.1	5.4	6
Cyanide	4.69E+01	(1)	1.86E+02	(4)	1.02E+02	(7)	4.69E+01	-	mg/Kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Iron	5.48E+04	(1)	2.17E+05	(4)	2.98E+05	(7)	5.48E+04	-	mg/Kg	18000	11000	9200	11000	15000	8700	5900	17000	11000	18000	9600	9500	13000	16000	15000
Lead	4.00E+02	(1)	8.00E+02	(4)	6.45E+03	(8)	4.00E+02	-	mg/Kg	2.1	4.2	3.9	4.4	7.7	3.5	0.57	<1.25	3.6	<1.25	5.4	5.6	4.1	4	3.3
Manganese	1.86E+03	(1)	4.40E+02	(4)	2.64E+04	(7)	4.40E+02	-	mg/Kg	340	720	1300	1200	1400	1200	200	640	750	480	1000	1100	390	360	790
Mercury	1.56E+01	(1)	1.36E+01	(4)	1.51E+01	(7)	1.36E+01	-	mg/Kg	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033
Nickel	1.56E+03	(1)	6.19E+03	(4)	2.20E+04	(7)	1.56E+03	-	mg/Kg	12	6.3	4.5	5.9	5.1	4.9	3.5	12	5.5	12	<5	5.2	6.7	9.3	9.7
Selenium	3.91E+02	(1)	1.55E+03	(4)	4.45E+02	(7)	3.91E+02	-	mg/Kg	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<2.5	<12.5	<12.5	<12.5	<25	<12.5	<12.5	<12.5	<12.5
Silver	3.91E+02	(1)	1.55E+03	(4)	7.22E+02	(7)	3.91E+02	-	mg/Kg	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<0.25	<1.25	<1.25	<1.25	<2.5	<1.25	<1.25	<1.25	<1.25
Vanadium	3.91E+02	(1)	1.55E+03	(4)	8.42E+04	(7)	3.91E+02	-	mg/Kg	15	16	15	19	34	14	8.6	22	16	16	<25	16	14	20	16
Zinc	2.35E+04	(1)	9.29E+04	(4)	3.14E+05	(7)	2.35E+04	-	mg/Kg	26	16	<12.5	14	<12.5	<12.5	8.5	31	13	25	<25	15	14	18	18
Volatile Organic Compounds - (EPA Method 8260) mg/kg																								
1,1,1,2-Tetrachloroethane	2.91E+01	(1)	7.79E+02	(4)	7.59E-01	(7)	7.59E-01	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
1,1,1-Trichloroethane	1.56E+04	(1)	1.48E+04	(4)	1.34E+03	(7)	1.34E+03	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
1,1,2,2-Tetrachloroethane	8.02E+00	(1)	2.21E+02	(4)	9.82E-02	(7)	9.82E-02	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
1,1,2-Trichloroethane	2.81E+00	(1)	4.72E+02	(4)	5.14E-02	(7)	5.14E-02	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
1,1-Dichloroethane	6.45E+01	(1)	1.70E+03	(4)	2.75E+00	(7)	2.75E+00	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
1,1-Dichloroethene	4.49E+02	(1)	4.32E+02	(4)	5.36E+01	(7)	5.36E+01	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
1,1-Dichloropropene	-	-	-	-	-	-	-	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
1,2,3-Trichlorobenzene	4.90E+01	(2)	4.90E+02	(5)	6.92E+00	(8)	6.92E+00	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
1,2,3-Trichloropropane	4.97E-02	(1)	7.23E+00	(4)	1.15E-03	(7)	1.15E-03	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
1,2,4-Trichlorobenzene	7.30E+01	(1)	6.87E+01	(4)	4.21E+00	(7)	4.21E+00	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
1,2,4-Trimethylbenzene	6.20E+01	(2)	2.60E+02	(5)	9.68E+00	(8)	9.68E+00	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
1,2-Dibromo-3-chloropropane	1.86E+00	(1)	5.07E+00	(4)	5.07E-04	(7)	5.07E-04	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
1,2-Dibromoethane (EDB)	5.88E-01	(1)	1.60E+01	(4)	7.10E-03	(7)	7.10E-03	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
1,2-Dichlorobenzene	2.31E+03	(1)	2.71E+03	(4)	1.29E+02	(7)	1.29E+02	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
1,2-Dichloroethane (EDC)	7.89E+00	(1)	5.87E+01	(4)	1.64E-01	(7)	1.64E-01	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
1,2-Dichloropropane	1.52E+01	(1)	2.50E+01	(4)	4.94E-01	(7)	4.94E-01	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.00E+04	(5)	5.53E+01	(8)	5.53E+01	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
1,3-Dichloropropane	1.60E+03	(2)	2.00E+04	(5)	4.56E+01	(8)	4.56E+01	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
1,4-Dichlorobenzene	3.17E+01	(1)	8.31E+02	(4)	1.47E+00	(7)	1.47E+00	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
1-Methylnaphthalene	1.60E+02	(3)	5.30E+02	(6)	2.35E+00	(8)	2.35E+00	-	mg/Kg	<0.0037	<0.0036	<0.0036	<0.0038	<0.0042	<0.0041	<0.004	<0.004	<0.0043	<0.0055	<0.0043	<0.0041	<0.0049	<0.0047	<0.0058
2,2-Dichloropropane	-	-	-	-	-	-	-	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
2-Butanone (MEK)	3.71E+04	(1)	8.43E+04	(4)	5.87E+02	(7)	5.87E+02	-	mg/Kg	<0.0092	<0.0091	0.0142	0.0179	<0.0104	<0.0104	<0.0101	<0.01	<0.0107	<0.0136	<0.0107	<0.0103	<0.0123	<0.0119	<0.0145
2-Chlorotoluene	1.56E+03	(1)	6.19E+03	(4)	2.57E+02	(7)	2.57E+02	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
2-Hexanone	9.38E+02	(1)	9.73E+02	(4)	3.53E+03	(7)	9.38E+02	-	mg/Kg	<0.0092	<0.0091	<0.0091	<0.0095	<0.0104	<0.0104	<0.0101	<0.01	<0.0107	<0.0136	<0.0107	<0.0103	<0.0123	<0.0119	<0.0145
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	6.45E+01	(8)	6.45E+01	-	mg/Kg	<0.0037	<0.0036	<0.0036	<0.0038	<0.0042	<0.0041	<0.004	<0.004	<0.0043	<0.0055	<0.0043	<0.0041	<0.0049	<0.0047	<0.0058
4-Chlorotoluene	1.60E+03	(2)	2.00E+04	(5)	8.30E+01	(8)	8.30E+01	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
4-Isopropyltoluene	-	-	-	-	-	-	-	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
4-Methyl-2-pentanone	5.30E+03	(2)	5.30E+04	(5)	1.06E+02	(8)	1.06E+02	-	mg/Kg	<0.0092	<0.0091	<0.0091	<0.0095	<0.0104	<0.0104	<0.0101	<0.01	<0.0107	<0.0136	<0.0107	<0.0103	<0.0123	<0.0119	<0.0145
Acetone	6.66E+04	(1)	2.21E+05	(4)	1.78E+03	(7)	1.78E+03	-	mg/Kg	0.0173	0.0314	0.0614	0.0891	0.0379	0.0485	0.0233	<0.01	0.0539	<0.0136	0.477	0.0625	<0.0123	0.0138	<0.0145
Benzene	1.54E+01	(1)	1.38E+02	(4)	7.96E-01	(7)	7.96E-01	-	mg/Kg	0.00566	<0.0009	<0.0009	<0.0009	<0.001	0.00403	0.00594	0.00158	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
Bromobenzene	3.00E+02	(2)	1.80E+03	(5)	1.66E+01	(8)	1.66E+01	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015

Table 7
Aeration Basin Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	Units	SWMU 1-4 (23-24')	SWMU 1-4 (8-10')	SWMU 1-5 (10-12')	SWMU 1-5 (14-16')	SWMU 1-5 (16-18')	SWMU 1-5 (24-25')	SWMU 1-5 (26-27')	SWMU 1-5 (27-28')	SWMU 1-6 (10-11')	SWMU 1-6 (11-12')	SWMU 1-6 (2-4')	SWMU 1-6 (4-6')	SWMU 1-6 (7.5-8')	SWMU 1-7 (12-14')	SWMU 1-7 (14-16')
										1210332-003	1210332-006	1210332-012	1210332-013	1210332-014	1210332-015	1210332-008	1210332-009	1210372-016	1210372-017	1210372-020	1210372-022	1210372-023	1210372-018	1210372-019
										10/3/2012	10/3/2012	10/3/2012	10/3/2012	10/3/2012	10/3/2012	10/3/2012	10/3/2012	10/4/2012	10/4/2012	10/4/2012	10/4/2012	10/4/2012	10/4/2012	10/4/2012
Bromodichloromethane	5.41E+00	(1)	1.43E+02	(4)	1.25E-01	(7)	1.25E-01	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
Bromoform	6.16E+02	(1)	4.76E+03	(4)	2.78E+02	(7)	2.78E+02	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
Bromomethane	1.65E+01	(1)	1.64E+01	(4)	8.86E-01	(7)	8.86E-01	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
Carbon disulfide	1.53E+03	(1)	1.58E+03	(4)	1.30E+02	(7)	1.30E+02	-	mg/Kg	<0.0092	<0.0091	<0.0091	<0.0095	<0.0104	<0.0104	<0.0101	<0.01	<0.0107	<0.0136	<0.0107	<0.0103	<0.0123	<0.0119	<0.0145
Carbon tetrachloride	1.08E+01	(1)	2.26E+02	(4)	7.39E-01	(7)	7.39E-01	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
Chlorobenzene	3.76E+02	(1)	4.06E+02	(4)	2.27E+01	(7)	2.27E+01	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
Chloroethane	2.98E+04	(1)	2.61E+04	(4)	2.48E+03	(7)	2.48E+03	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
Chloroform	5.86E+00	(1)	1.54E+02	(4)	2.12E-01	(7)	2.12E-01	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
Chloromethane	2.75E+02	(1)	2.41E+02	(4)	2.03E+01	(7)	2.03E+01	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
cis-1,2-DCE	1.56E+02	(1)	6.19E+02	(4)	8.47E+00	(7)	8.47E+00	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
cis-1,3-Dichloropropene	3.37E+01	(1)	2.09E+02	(4)	5.71E-01	(7)	5.71E-01	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
Dibromochloromethane	1.21E+01	(1)	3.32E+02	(4)	1.52E-01	(7)	1.52E-01	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
Dibromomethane	5.16E+01	(1)	3.10E+03	(4)	7.89E-01	(7)	7.89E-01	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
Dichlorodifluoromethane	1.68E+02	(1)	1.49E+02	(4)	1.71E+02	(7)	1.49E+02	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
Ethylbenzene	6.84E+01	(1)	1.83E+03	(4)	5.98E+00	(7)	5.98E+00	-	mg/Kg	0.00125	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	0.00563	<0.001	<0.0012	<0.0012	<0.0015
Hexachlorobutadiene	6.11E+01	(1)	2.38E+02	(4)	5.91E+00	(7)	5.91E+00	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
Isopropylbenzene	2.43E+03	(1)	2.81E+03	(4)	3.99E+02	(7)	3.99E+02	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
Methyl tert-butyl ether (MTBE)	9.01E+02	(1)	2.49E+04	(4)	1.11E+01	(7)	1.11E+01	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	0.0019
Methylene chloride	4.09E+02	(1)	1.12E+03	(4)	1.90E+01	(7)	1.90E+01	-	mg/Kg	<0.0027	<0.0027	<0.0027	<0.0028	<0.0031	<0.0031	<0.003	<0.003	<0.0032	<0.0041	<0.0032	<0.0031	<0.0037	<0.0036	<0.0044
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	1.64E+00	(7)	1.64E+00	-	mg/Kg	<0.0018	<0.0018	<0.0018	<0.0019	<0.0021	<0.0021	<0.002	<0.002	<0.0021	<0.0027	<0.0021	<0.0021	<0.0025	<0.0024	<0.0029
n-Butylbenzene	3.90E+03	(2)	5.10E+04	(5)	1.15E+03	(8)	1.15E+03	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
n-Propylbenzene	3.40E+03	(2)	2.10E+04	(5)	4.56E+02	(8)	4.56E+02	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
sec-Butylbenzene	-	-	-	-	-	-	-	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
Styrene	7.28E+03	(1)	9.99E+03	(4)	6.40E+02	(7)	6.40E+02	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
tert-Butylbenzene	-	-	-	-	-	-	-	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
Tetrachloroethene (PCE)	7.02E+00	(1)	2.12E+02	(4)	1.98E-01	(7)	1.98E-01	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
Toluene	5.27E+03	(1)	1.34E+04	(4)	5.84E+02	(7)	5.84E+02	-	mg/Kg	0.00275	<0.0009	<0.0009	<0.0009	<0.001	0.0091	0.00831	0.00101	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
trans-1,2-DCE	2.70E+02	(1)	2.73E+02	(4)	1.24E+01	(7)	1.24E+01	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
Trichloroethene (TCE)	8.77E+00	(1)	7.68E+00	(4)	4.85E-01	(7)	4.85E-01	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
Trichlorofluoromethane	1.41E+03	(1)	1.30E+03	(4)	4.10E+02	(7)	4.10E+02	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
Vinyl chloride	7.28E-01	(1)	1.49E+02	(4)	2.50E-02	(7)	2.50E-02	-	mg/Kg	<0.0009	<0.0009	<0.0009	<0.0009	<0.001	<0.001	<0.001	<0.001	<0.0011	<0.0014	<0.0011	<0.001	<0.0012	<0.0012	<0.0015
Xylenes, Total	8.14E+02	(1)	7.43E+02	(4)	7.21E+01	(7)	7.21E+01	-	mg/Kg	0.00218	<0.0018	<0.0018	<0.0019	<0.0021	<0.0021	<0.002	<0.002	<0.0021	<0.0027	0.0431	<0.0021	<0.0025	<0.0024	<0.0029
Semi Volatile Organics - (EPA Method 8270) mg/kg																								
1,2,4-Trichlorobenzene	7.30E+01	(1)	6.87E+01	(4)	4.21E+00	(7)	4.21E+00	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
1,2-Dichlorobenzene	2.31E+03	(1)	2.71E+03	(4)	1.29E+02	(7)	1.29E+02	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
1,4-Dichlorobenzene	3.17E+01	(1)	8.31E+02	(4)	1.47E+00	(7)	1.47E+00	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
1-Methylnaphthalene	1.60E+02	(3)	5.30E+02	(6)	2.35E+00	(8)	2.35E+00	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
2,4,5-Trichlorophenol	6.11E+03	(1)	2.38E+04	(4)	4.78E+03	(7)	4.78E+03	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
2,4,6-Trichlorophenol	6.11E+01	(1)	2.38E+02	(4)	4.78E+01	(7)	4.78E+01	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
2,4-Dichlorophenol	1.83E+02	(1)	7.15E+02	(4)	4.60E+01	(7)	4.60E+01	-	mg/Kg	<0.3971	<0.4013	<0.4038	<0.4	<0.3985	<0.4013	<0.7895	<0.3981	<0.3997	<0.4013	<0.3992	<0.4023	<0.397	<0.4021	<0.4044
2,4-Dimethylphenol	1.22E+03	(1)	4.76E+03	(4)	3.07E+02	(7)	3.07E+02	-	mg/Kg	<0.2978	<0.301	<0.3028	<0.3	<0.2989	<0.301	<0.5921	<0.2986	<0.2998	<0.301	<0.2994	<0.3017	<0.2977	<0.3016	<0.3033
2,4-Dinitrophenol	1.22E+02	(1)	4.76E+02	(4)	2.91E+01	(7)	2.91E+01	-	mg/Kg	<0.3971	<0.4013	<0.4038	<0.4	<0.3985	<0.4013	<0.7895	<0.3981	<0.3997	<0.4013	<0.3992	<0.4023	<0.397	<0.4021	<0.4044
2,4-Dinitrotoluene	1.57E+01	(1)	4.76E+02	(4)	1.04E+00	(7)	1.04E+00	-	mg/Kg	<0.4964	<0.5017	<0.5047	<0.5	<0.4982	<0.5017	<0.9868	<0.4977	<0.4997	<0.5017	<0.499	<0.5028	<0.4962	<0.5027	<0.5056
2,6-Dinitrotoluene	6.11E+01	(1)	2.38E+02	(4)	1.77E+01	(7)	1.77E+01	-	mg/Kg	<0.4964	<0.5017	<0.5047	<0.5	<0.4982	<0.5017	<0.9868	<0.4977	<0.4997	<0.5017	<0.499	<0.5028	<0.4962	<0.5027	<0.5056
2-Chloronaphthalene	6.11E+01	(1)	2.94E+02	(4)	4.01E-01	(7)	4.01E-01	-	mg/Kg	<0.2482	<0.2508	<0.2524	<0.25	<0.2491	<0.2508	<0.4934	<0.2488	<0.2498	<0.2508	<0.2495	<0.2514	<0.2481	<0.2513	<0.2528
2-Chlorophenol	3.91E+02	(1)	1.55E+03	(4)	5.33E+01	(7)	5.33E+01	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	6.45E+01	(8)	6.45E+01	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
2-Methylphenol	3.10E+03	(2)	3.10E+04	(5)	2.67E+02	(8)	2.67E+02	-	mg/Kg	<0.4964	<0.5017	<0.5047	<0.5	<0.4982	<0.5017	<0.9868	<0.4977	<0.4997	<0.5017	<0.499	<0.5028	<0.4962	<0.5027	<0.5056
2-Nitroaniline	6.10E+02	(2)	6.00E+03	(5)	2.86E+01	(8)	2.86E+01	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
2-Nitrophenol	-	-	-	-	-	-	-	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022

Table 7
Aeration Basin Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	Units	SWMU 1-4 (23-24')	SWMU 1-4 (8-10')	SWMU 1-5 (10-12')	SWMU 1-5 (14-16')	SWMU 1-5 (16-18')	SWMU 1-5 (24-25')	SWMU 1-5 (26-27')	SWMU 1-5 (27-28')	SWMU 1-6 (10-11')	SWMU 1-6 (11-12')	SWMU 1-6 (2-4')	SWMU 1-6 (4-6')	SWMU 1-6 (7.5-8')	SWMU 1-7 (12-14')	SWMU 1-7 (14-16')
										1210332-003	1210332-006	1210332-012	1210332-013	1210332-014	1210332-015	1210332-008	1210332-009	1210372-016	1210372-017	1210372-020	1210372-022	1210372-023	1210372-018	1210372-019
										10/3/2012	10/3/2012	10/3/2012	10/3/2012	10/3/2012	10/3/2012	10/3/2012	10/3/2012	10/4/2012	10/4/2012	10/4/2012	10/4/2012	10/4/2012	10/4/2012	10/4/2012
3,3'-Dichlorobenzidine	1.08E+01	(1)	3.64E+02	(4)	3.41E+00	(7)	3.41E+00	-	mg/Kg	<0.2482	<0.2508	<0.2524	<0.25	<0.2491	<0.2508	<0.4934	<0.2488	<0.2498	<0.2508	<0.2495	<0.2514	<0.2481	<0.2513	<0.2528
3+4-Methylphenol	-	-	-	-	-	-	-	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
3-Nitroaniline	-	-	-	-	-	-	-	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
4,6-Dinitro-2-methylphenol	4.90E+00	(2)	4.90E+01	(5)	9.22E-01	(8)	9.22E-01	-	mg/Kg	<0.4964	<0.5017	<0.5047	<0.5	<0.4982	<0.5017	<0.9868	<0.4977	<0.4997	<0.5017	<0.499	<0.5028	<0.4962	<0.5027	<0.5056
4-Bromophenyl phenyl ether	-	-	-	-	-	-	-	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
4-Chloro-3-methylphenol	6.10E+03	(2)	6.20E+04	(5)	5.99E+02	(8)	5.99E+02	-	mg/Kg	<0.4964	<0.5017	<0.5047	<0.5	<0.4982	<0.5017	<0.9868	<0.4977	<0.4997	<0.5017	<0.499	<0.5028	<0.4962	<0.5027	<0.5056
4-Chloroaniline	2.40E+01	(3)	8.60E+01	(6)	5.99E-02	(8)	5.99E-02	-	mg/Kg	<0.4964	<0.5017	<0.5047	<0.5	<0.4982	<0.5017	<0.9868	<0.4977	<0.4997	<0.5017	<0.499	<0.5028	<0.4962	<0.5027	<0.5056
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	-	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
4-Nitroaniline	2.40E+02	(3)	8.60E+02	(6)	6.45E-01	(8)	6.45E-01	-	mg/Kg	<0.3971	<0.4013	<0.4038	<0.4	<0.3985	<0.4013	<0.7895	<0.3981	<0.3997	<0.4013	<0.3992	<0.4023	<0.397	<0.4021	<0.4044
4-Nitrophenol	-	-	-	-	-	-	-	-	mg/Kg	<0.2482	<0.2508	<0.2524	<0.25	<0.2491	<0.2508	<0.4934	<0.2488	<0.2498	<0.2508	<0.2495	<0.2514	<0.2481	<0.2513	<0.2528
Acenaphthene	3.44E+03	(1)	1.86E+04	(4)	7.79E+03	(7)	3.44E+03	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Acenaphthylene	-	-	-	-	-	-	-	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Aniline	8.50E+02	(3)	3.00E+03	(6)	1.80E+00	(8)	1.80E+00	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Anthracene	1.72E+04	(1)	6.68E+04	(4)	1.25E+05	(7)	1.72E+04	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Azobenzene	5.10E+01	(3)	2.30E+02	(6)	3.69E-01	(8)	3.69E-01	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Benz(a)anthracene	1.48E+00	(1)	2.13E+02	(4)	3.61E+01	(7)	1.48E+00	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Benzo(a)pyrene	1.48E-01	(1)	2.13E+01	(4)	1.20E+01	(7)	1.48E-01	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Benzo(b)fluoranthene	1.48E+00	(1)	2.13E+02	(4)	1.22E+02	(7)	1.48E+00	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Benzo(g,h,i)perylene	-	-	-	-	-	-	-	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Benzo(k)fluoranthene	1.48E+01	(1)	2.06E+03	(4)	1.20E+03	(7)	1.48E+01	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Benzoic acid	2.40E+05	(2)	2.50E+06	(5)	6.45E+03	(8)	6.45E+03	-	mg/Kg	<0.4964	<0.5017	<0.5047	<0.5	<0.4982	<0.5017	<0.9868	<0.4977	<0.4997	<0.5017	<0.499	<0.5028	<0.4962	<0.5027	<0.5056
Benzyl alcohol	6.10E+03	(2)	6.20E+04	(5)	1.71E+02	(8)	1.71E+02	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Bis(2-chloroethoxy)methane	1.80E+02	(2)	1.80E+03	(5)	5.07E+00	(8)	5.07E+00	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Bis(2-chloroethyl)ether	2.68E+00	(1)	7.78E+01	(4)	1.21E-02	(7)	1.21E-02	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Bis(2-chloroisopropyl)ether	9.15E+01	(1)	3.10E+03	(4)	1.07E+00	(7)	1.07E+00	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Bis(2-ethylhexyl)phthalate	3.47E+02	(1)	4.76E+03	(4)	3.97E+03	(7)	3.47E+02	-	mg/Kg	<0.4964	<0.5017	<0.5047	<0.5	<0.4982	<0.5017	<0.9868	<0.4977	<0.4997	<0.5017	<0.499	<0.5028	<0.4962	<0.5027	<0.5056
Butyl benzyl phthalate	2.60E+03	(3)	9.10E+03	(6)	9.22E+01	(8)	9.22E+01	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Carbazole	-	-	-	-	-	-	-	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Chrysene	1.48E+02	(1)	2.06E+04	(4)	3.68E+03	(7)	1.48E+02	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Dibenz(a,h)anthracene	1.48E-01	(1)	2.13E+01	(4)	3.90E+01	(7)	1.48E-01	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Dibenzofuran	7.80E+01	(2)	1.00E+03	(5)	5.07E+01	(8)	5.07E+01	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Diethyl phthalate	4.89E+04	(1)	1.91E+05	(4)	4.45E+03	(7)	4.45E+03	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(4)	3.71E+04	(7)	3.71E+04	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Di-n-butyl phthalate	6.11E+03	(1)	2.38E+04	(4)	3.21E+03	(7)	3.21E+03	-	mg/Kg	<0.4964	<0.5017	<0.5047	<0.5	<0.4982	<0.5017	<0.9868	<0.4977	<0.4997	<0.5017	<0.499	<0.5028	<0.4962	<0.5027	<0.5056
Di-n-octyl phthalate	-	-	-	-	-	-	-	-	mg/Kg	<0.2482	<0.2508	<0.2524	<0.25	<0.2491	<0.2508	<0.4934	<0.2488	<0.2498	<0.2508	<0.2495	<0.2514	<0.2481	<0.2513	<0.2528
Fluoranthene	2.29E+03	(1)	8.91E+03	(4)	5.61E+04	(7)	2.29E+03	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Fluorene	2.29E+03	(1)	8.91E+03	(4)	9.36E+03	(7)	2.29E+03	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Hexachlorobenzene	3.04E+00	(1)	1.03E+02	(4)	1.83E+00	(7)	1.83E+00	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Hexachlorobutadiene	6.11E+01	(1)	2.38E+02	(4)	5.91E+00	(7)	5.91E+00	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Hexachlorocyclopentadiene	3.67E+02	(1)	8.11E+02	(4)	2.43E+02	(7)	2.43E+02	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Hexachloroethane	4.28E+01	(1)	1.67E+02	(4)	3.77E+00	(7)	3.77E+00	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Indeno(1,2,3-cd)pyrene	1.48E+00	(1)	2.13E+02	(4)	3.98E+02	(7)	1.48E+00	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Isophorone	5.12E+03	(1)	4.75E+04	(4)	8.84E+01	(7)	8.84E+01	-	mg/Kg	<0.4964	<0.5017	<0.5047	<0.5	<0.4982	<0.5017	<0.9868	<0.4977	<0.4997	<0.5017	<0.499	<0.5028	<0.4962	<0.5027	<0.5056
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	1.64E+00	(7)	1.64E+00	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Nitrobenzene	5.35E+01	(1)	3.32E+02	(4)	2.88E-01	(7)	2.88E-01	-	mg/Kg	<0.4964	<0.5017	<0.5047	<0.5	<0.4982	<0.5017	<0.9868	<0.4977	<0.4997	<0.5017	<0.499	<0.5028	<0.4962	<0.5027	<0.5056
N-Nitrosodi-n-propylamine	6.90E-01	(3)	2.50E+00	(6)	3.23E-03	(8)	3.23E-03	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
N-Nitrosodiphenylamine	9.93E+02	(1)	3.36E+04	(4)	2.61E+02	(7)	2.61E+02	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Pentachlorophenol	8.94E+00	(1)	3.10E+02	(4)	5.90E+00	(7)	5.90E+00	-	mg/Kg	<0.3971	<0.4013	<0.4038	<0.4	<0.3985	<0.4013	<0.7895	<0.3981	<0.3997	<0.4013	<0.3992	<0.4023	<0.397	<0.4021	<0.4044
Phenanthrene	1.83E+03	(1)	7.15E+03	(4)	1.32E+04	(7)	1.83E+03	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Phenol	1.83E+04	(1)	6.88E+04	(4)	2.29E+03	(7)	2.29E+03	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Pyrene	1.72E+03	(1)	6.68E+03	(4)	4.12E+04	(7)	1.72E+03	-	mg/Kg	<0.1985	<0.2007	<0.2019	<0.2	<0.1993	<0.2007	<0.3947	<0.1991	<0.1999	<0.2007	<0.1996	<0.2011	<0.1985	<0.2011	<0.2022
Pyridine	7.80E+01	(2)	1.00E+03	(5)	2.44E+00	(8)	2.44E+00	-	mg/Kg	<0.4964	<0.5017	<0.5047	<0.5	<0.4982	<0.5017	<0.9868	<0.4977	<0.4997	<0.5017	<0.499	<0.5028	<0.4962	<0.5027	<0.5056

Table 7
Aeration Basin Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	Units	SWMU 1-4 (23-24')	SWMU 1-4 (8-10')	SWMU 1-5 (10-12')	SWMU 1-5 (14-16')	SWMU 1-5 (16-18')	SWMU 1-5 (24-25')	SWMU 1-5 (26-27')	SWMU 1-5 (27-28')	SWMU 1-6 (10-11')	SWMU 1-6 (11-12')	SWMU 1-6 (2-4')	SWMU 1-6 (4-6')	SWMU 1-6 (7.5-8')	SWMU 1-7 (12-14')	SWMU 1-7 (14-16')
										1210332-003 10/3/2012	1210332-006 10/3/2012	1210332-012 10/3/2012	1210332-013 10/3/2012	1210332-014 10/3/2012	1210332-015 10/3/2012	1210332-008 10/3/2012	1210332-009 10/3/2012	1210372-016 10/4/2012	1210372-017 10/4/2012	1210372-020 10/4/2012	1210372-022 10/4/2012	1210372-023 10/4/2012	1210372-018 10/4/2012	1210372-019 10/4/2012
Total Petroleum Hydrocarbons - (EPA Method 8015B) mg/kg																								
Diesel Range Organics (DRO)	1.00E+03	(10)	1.00E+03	(10)	1.00E+03	(10)	-	-	mg/Kg	<10	<10	<10	<10	<10	<10	<12	<10	<10	<10	<10	<10	<10	<10	<10
Gasoline Range Organics (GRO)	-	-	-	-	-	-	-	-	mg/Kg	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Motor Oil Range Organics (MRO)	3.00E+03	(11)	3.00E+03	(11)	3.00E+03	(11)	-	-	mg/Kg	<48	<50	<49	<48	<50	<50	<60	<50	<50	<50	<50	<49	<50	<50	<49

-- No screening level or analytical result available

NMED - Risk Assessment Guidance for Site Investigations and Remediation (June 14, 2012)

EPA - Regional Screening Levels (May 2012)

(1) NMED Residential Screening Level

(2) EPA Residential Screening Level

(3) EPA Residential - Screening Levels (May 2012) multiplied by 10 because the constituent is listed as carcinogenic

(4) NMED Construction Worker Screening Level

(5) EPA Industrial - Screening Levels (May 2012)

(6) EPA Industrial - Screening Levels (May 2012) multiplied by 10 pursuant to Provision VII.B. of the July 7, 2007 NMED Order because the constituent is listed as carcinogenic

(7) SoilGW NMED Dilution Attenuation Factor (DAF) = 461

(8) SoilGW Risk-based EPA DAF = 461

(9) SoilGW MCL-based EPA DAF = 461

(10) NMED Table 6-2 TPH Screening Guidelines for Potable Groundwater "uknown oil" with DAF = 1.0 - see report Section 5 for use of screening levels

(11) NMED Table 6-2 TPH Screening Guidelines for Potable Groundwater "waste oil" with DAF = 1.0 - see report Section 5 for use of screening levels

(12) Background concentrations to be determined

Bold represents value above Residential Screening Level
yellow highlight represents value above Leachate (DAF) Screening Level
Bold with yellow - value exceeds Residential Screening Level and DAF

Table 7
Aeration Basin Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	Units	SWMU 1-7 (16-18')	SWMU 1-8 (10-12')	SWMU 1-8 (12-14')	SWMU 1-8 (16-18')	SWMU 1-8 (19-20')	SWMU 1-8 (4-6')	SWMU 1-9 (0-0.5')	SWMU 1-9 (1.5-2')	SWMU 1-10 (0-0.5')	SWMU 1-10 (1.5-2')	SWMU 1-11 (0-0.5')	SWMU 1-11 (1.5-2')	SWMU 1-12 (0.5-1')	SWMU 1-12 (0-0.5')	SWMU 1-13 (0-0.5')
										1210372-015	1210372-007	1210372-008	1210372-009	1210372-005	1210372-006	1210811-001	1210811-002	1210811-003	1210811-004	1210811-005	1210811-006	1210811-008	1210811-007	1210692-021
										10/4/2012	10/5/2012	10/5/2012	10/5/2012	10/5/2012	10/5/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/12/2012
Metals (mg/kg)																								
Antimony	3.13E+01	(1)	1.24E+02	(4)	3.05E+02	(7)	3.13E+01	-	mg/Kg	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<4.9999	<5.0001	<5	<5.0004	<5.0004	<5.0002	<5.0004	<4.9995	<5
Arsenic	3.90E+00	(1)	5.30E+01	(4)	6.05E+00	(7)	3.90E+00	-	mg/Kg	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<4.9999	<5.0001	<5	<5.0004	<5.0004	<5.0002	<5.0004	<4.9995	<5
Barium	1.56E+04	(1)	4.35E+03	(4)	1.39E+05	(7)	4.35E+03	-	mg/Kg	330	620	370	550	300	540	620	200	590	580	510	590	440	400	600
Beryllium	1.56E+02	(1)	1.44E+02	(4)	2.66E+04	(7)	1.44E+02	-	mg/Kg	1.1	<0.75	<0.75	<0.75	0.95	<0.75	0.71	0.84	0.65	0.54	0.77	0.61	0.76	0.95	0.56
Cadmium	7.03E+01	(1)	2.77E+02	(4)	6.33E+02	(7)	7.03E+01	-	mg/Kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium III	1.17E+05	(1)	4.65E+05	(4)	4.54E+10	(7)	1.17E+05	-	mg/Kg	15	21	10	6.9	14	5.3	24	8.7	24	15	15	12	14	15	11
Chromium VI	2.97E+00	(1)	6.56E+01	(4)	3.83E+00	(7)	2.97E+00	-	mg/Kg	15	21	10	6.9	14	5.3	24	8.7	24	15	15	12	14	15	11
Cobalt	2.30E+01	(2)	3.00E+02	(5)	9.68E+01	(8)	2.30E+01	-	mg/Kg	6.4	6.6	4.1	4.4	8.2	3	5	4.3	5	4.2	5.4	4	4.9	5.4	3.6
Cyanide	4.69E+01	(1)	1.86E+02	(4)	1.02E+02	(7)	4.69E+01	-	mg/Kg	<0.3	0.61	0.4	<0.3	<0.3	<0.3	1.4	<0.285	1.8	0.4	0.72	1.7	1.2	<0.25	0.33
Iron	5.48E+04	(1)	2.17E+05	(4)	2.98E+05	(7)	5.48E+04	-	mg/Kg	22000	15000	8000	11000	19000	7900	12000	12000	14000	7400	14000	7400	13000	15000	13000
Lead	4.00E+02	(1)	8.00E+02	(4)	6.45E+03	(8)	4.00E+02	-	mg/Kg	1.7	8.2	2	2.8	<1.25	3.4	7	2.7	9.1	3	3.5	1.4	1.6	1.6	3.5
Manganese	1.86E+03	(1)	4.40E+02	(4)	2.64E+04	(7)	4.40E+02	-	mg/Kg	510	810	540	740	300	390	600	300	560	790	620	400	460	390	590
Mercury	1.56E+01	(1)	1.36E+01	(4)	1.51E+01	(7)	1.36E+01	-	mg/Kg	<0.033	0.16	0.044	<0.033	<0.033	<0.033	0.18	<0.033	0.2	0.091	0.84	0.19	0.12	0.16	0.12
Nickel	1.56E+03	(1)	6.19E+03	(4)	2.20E+04	(7)	1.56E+03	-	mg/Kg	13	16	6.8	6.1	12	4.5	15	7.1	14	11	8.8	7.1	8	9.9	6.3
Selenium	3.91E+02	(1)	1.55E+03	(4)	4.45E+02	(7)	3.91E+02	-	mg/Kg	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<4.9999	<5.0001	<5	<5.0004	<5.0004	<5.0002	<5.0004	<4.9995	<5
Silver	3.91E+02	(1)	1.55E+03	(4)	7.22E+02	(7)	3.91E+02	-	mg/Kg	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	3.91E+02	(1)	1.55E+03	(4)	8.42E+04	(7)	3.91E+02	-	mg/Kg	28	26	15	16	26	19	21	16	24	22	25	18	24	24	18
Zinc	2.35E+04	(1)	9.29E+04	(4)	3.14E+05	(7)	2.35E+04	-	mg/Kg	25	60	18	14	29	<12.5	53	14	70	26	39	44	40	61	30
Volatile Organic Compounds - (EPA Method 8260) mg/kg																								
1,1,1,2-Tetrachloroethane	2.91E+01	(1)	7.79E+02	(4)	7.59E-01	(7)	7.59E-01	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
1,1,1-Trichloroethane	1.56E+04	(1)	1.48E+04	(4)	1.34E+03	(7)	1.34E+03	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
1,1,2,2-Tetrachloroethane	8.02E+00	(1)	2.21E+02	(4)	9.82E-02	(7)	9.82E-02	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
1,1,2-Trichloroethane	2.81E+00	(1)	4.72E+02	(4)	5.14E-02	(7)	5.14E-02	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
1,1-Dichloroethane	6.45E+01	(1)	1.70E+03	(4)	2.75E+00	(7)	2.75E+00	-	mg/Kg	<0.001	<0.0009	<0.1	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
1,1-Dichloroethene	4.49E+02	(1)	4.32E+02	(4)	5.36E+01	(7)	5.36E+01	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
1,1-Dichloropropene	-	-	-	-	-	-	-	-	mg/Kg	<0.001	<0.0009	<0.1	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
1,2,3-Trichlorobenzene	4.90E+01	(2)	4.90E+02	(5)	6.92E+00	(8)	6.92E+00	-	mg/Kg	<0.001	<0.0009	<0.1	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
1,2,3-Trichloropropane	4.97E-02	(1)	7.23E+00	(4)	1.15E-03	(7)	1.15E-03	-	mg/Kg	<0.001	<0.0009	<0.1	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
1,2,4-Trichlorobenzene	7.30E+01	(1)	6.87E+01	(4)	4.21E+00	(7)	4.21E+00	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
1,2,4-Trimethylbenzene	6.20E+01	(2)	2.60E+02	(5)	9.68E+00	(8)	9.68E+00	-	mg/Kg	<0.001	0.00358	<0.05	<0.0011	<0.0011	0.0102	<0.0008	<0.0008	0.00282	0.00143	0.00219	0.00449	0.00382	0.00394	0.0031
1,2-Dibromo-3-chloropropane	1.86E+00	(1)	5.07E+00	(4)	5.07E-04	(7)	5.07E-04	-	mg/Kg	<0.001	<0.0009	<0.1	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
1,2-Dibromoethane (EDB)	5.88E-01	(1)	1.60E+01	(4)	7.10E-03	(7)	7.10E-03	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
1,2-Dichlorobenzene	2.31E+03	(1)	2.71E+03	(4)	1.29E+02	(7)	1.29E+02	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
1,2-Dichloroethane (EDC)	7.89E+00	(1)	5.87E+01	(4)	1.64E-01	(7)	1.64E-01	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
1,2-Dichloropropane	1.52E+01	(1)	2.50E+01	(4)	4.94E-01	(7)	4.94E-01	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.00E+04	(5)	5.53E+01	(8)	5.53E+01	-	mg/Kg	<0.001	0.000978	<0.05	<0.0011	<0.0011	0.00249	<0.0008	<0.0008	0.00105	<0.0008	<0.001	0.00165	0.00149	0.00161	0.00111
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
1,3-Dichloropropane	1.60E+03	(2)	2.00E+04	(5)	4.56E+01	(8)	4.56E+01	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
1,4-Dichlorobenzene	3.17E+01	(1)	8.31E+02	(4)	1.47E+00	(7)	1.47E+00	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
1-Methylnaphthalene	1.60E+02	(3)	5.30E+02	(6)	2.35E+00	(8)	2.35E+00	-	mg/Kg	<0.0039	<0.0037	<0.2	<0.0044	<0.0044	0.0164	<0.0031	<0.0031	<0.0036	<0.0033	<0.0039	<0.0031	<0.0029	<0.0036	<0.0044
2,2-Dichloropropane	-	-	-	-	-	-	-	-	mg/Kg	<0.001	<0.0009	<0.1	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
2-Butanone (MEK)	3.71E+04	(1)	8.43E+04	(4)	5.87E+02	(7)	5.87E+02	-	mg/Kg	<0.0098	<0.0093	<0.5	<0.0111	<0.0109	0.0177	<0.0077	<0.0077	<0.0089	<0.0083	0.0102	<0.0077	<0.0073	0.0132	<0.011
2-Chlorotoluene	1.56E+03	(1)	6.19E+03	(4)	2.57E+02	(7)	2.57E+02	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
2-Hexanone	9.38E+02	(1)	9.73E+02	(4)	3.53E+03	(7)	9.38E+02	-	mg/Kg	<0.0098	<0.0093	<0.5	<0.0111	<0.0109	<0.0081	<0.0077	<0.0077	<0.0089	<0.0083	<0.0098	<0.0077	<0.0073	<0.0089	<0.011
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	6.45E+01	(8)	6.45E+01	-	mg/Kg	<0.0039	<0.0037	<0.2	<0.0044	<0.0044	0.0168	<0.0031	<0.0031	<0.0036	<0.0033	<0.0039	<0.0031	<0.0029	<0.0036	<0.0044
4-Chlorotoluene	1.60E+03	(2)	2.00E+04	(5)	8.30E+01	(8)	8.30E+01	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
4-Isopropyltoluene	-	-	-	-	-	-	-	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
4-Methyl-2-pentanone	5.30E+03	(2)	5.30E+04	(5)	1.06E+02	(8)	1.06E+02	-	mg/Kg	<0.0098	<0.0093	<0.5	<0.0111	<0.0109	<0.0081	<0.0077	<0.0077	<0.0089	<0.0083	<0.0098	<0.0077	<0.0073	<0.0089	<0.011
Acetone	6.66E+04	(1)	2.21E+05	(4)	1.78E+03	(7)	1.78E+03	-	mg/Kg	0.00987	0.145	<0.75	0.0364	0.0272	0.114	0.0395	0.0326	0.146	0.0464	0.329	0.0686	0.0917	3.23	0.128
Benzene	1.54E+01	(1)	1.38E+02	(4)	7.96E-01	(7)	7.96E-01	-	mg/Kg	0.00136	0.00119	<0.05	<0.0011	<0.0011	0.0024	0.00139	0.00193	0.00176	0.000934	0.00207	0.00131	0.00191	0.00232	0.00154
Bromobenzene	3.00E+02	(2)	1.80E+03	(5)	1.66E+01	(8)	1.66E+01	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011

Table 7
Aeration Basin Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	Units	SWMU 1-7 (16-18')	SWMU 1-8 (10-12')	SWMU 1-8 (12-14')	SWMU 1-8 (18-18')	SWMU 1-8 (19-20')	SWMU 1-8 (4-6')	SWMU 1-9 (0-0.5')	SWMU 1-9 (1.5-2')	SWMU 1-10 (0-0.5')	SWMU 1-10 (1.5-2')	SWMU 1-11 (0-0.5')	SWMU 1-11 (1.5-2')	SWMU 1-12 (0.5-1')	SWMU 1-12 (0-0.5')	SWMU 1-13 (0-0.5')
										1210372-015	1210372-007	1210372-008	1210372-009	1210372-005	1210372-006	1210811-001	1210811-002	1210811-003	1210811-004	1210811-005	1210811-006	1210811-008	1210811-007	1210692-021
										10/4/2012	10/5/2012	10/5/2012	10/5/2012	10/5/2012	10/5/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/12/2012
Bromodichloromethane	5.41E+00	(1)	1.43E+02	(4)	1.25E-01	(7)	1.25E-01	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
Bromoform	6.16E+02	(1)	4.76E+03	(4)	2.78E+02	(7)	2.78E+02	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
Bromomethane	1.65E+01	(1)	1.64E+01	(4)	8.86E-01	(7)	8.86E-01	-	mg/Kg	<0.001	<0.0009	<0.15	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
Carbon disulfide	1.53E+03	(1)	1.58E+03	(4)	1.30E+02	(7)	1.30E+02	-	mg/Kg	<0.0098	<0.0093	<0.5	<0.0111	<0.0109	<0.0081	<0.0077	<0.0077	<0.0089	<0.0083	<0.0098	<0.0077	<0.0073	<0.0089	<0.011
Carbon tetrachloride	1.08E+01	(1)	2.26E+02	(4)	7.39E-01	(7)	7.39E-01	-	mg/Kg	<0.001	<0.0009	<0.1	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
Chlorobenzene	3.76E+02	(1)	4.06E+02	(4)	2.27E+01	(7)	2.27E+01	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
Chloroethane	2.98E+04	(1)	2.61E+04	(4)	2.48E+03	(7)	2.48E+03	-	mg/Kg	<0.001	<0.0009	<0.1	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
Chloroform	5.86E+00	(1)	1.54E+02	(4)	2.12E-01	(7)	2.12E-01	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
Chloromethane	2.75E+02	(1)	2.41E+02	(4)	2.03E+01	(7)	2.03E+01	-	mg/Kg	<0.001	<0.0009	<0.15	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
cis-1,2-DCE	1.56E+02	(1)	6.19E+02	(4)	8.47E+00	(7)	8.47E+00	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
cis-1,3-Dichloropropene	3.37E+01	(1)	2.09E+02	(4)	5.71E-01	(7)	5.71E-01	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
Dibromochloromethane	1.21E+01	(1)	3.32E+02	(4)	1.52E-01	(7)	1.52E-01	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
Dibromomethane	5.16E+01	(1)	3.10E+03	(4)	7.89E-01	(7)	7.89E-01	-	mg/Kg	<0.001	<0.0009	<0.1	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
Dichlorodifluoromethane	1.68E+02	(1)	1.49E+02	(4)	1.71E+02	(7)	1.49E+02	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
Ethylbenzene	6.84E+01	(1)	1.83E+03	(4)	5.98E+00	(7)	5.98E+00	-	mg/Kg	<0.001	0.0047	<0.05	<0.0011	<0.0011	0.00249	<0.0008	<0.0008	0.00322	0.000992	0.00933	0.00229	0.00131	0.0233	0.00224
Hexachlorobutadiene	6.11E+01	(1)	2.38E+02	(4)	5.91E+00	(7)	5.91E+00	-	mg/Kg	<0.001	<0.0009	<0.1	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
Isopropylbenzene	2.43E+03	(1)	2.81E+03	(4)	3.99E+02	(7)	3.99E+02	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	0.00144	<0.0011
Methyl tert-butyl ether (MTBE)	9.01E+02	(1)	2.49E+04	(4)	1.11E+01	(7)	1.11E+01	-	mg/Kg	<0.001	<0.0009	<0.05	0.0241	<0.0011	0.0081	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
Methylene chloride	4.09E+02	(1)	1.12E+03	(4)	1.90E+01	(7)	1.90E+01	-	mg/Kg	<0.0029	<0.0028	<0.15	<0.0033	<0.0033	<0.0024	<0.0023	<0.0023	<0.0027	<0.0025	<0.0029	<0.0023	<0.0022	<0.0027	<0.0033
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	1.64E+00	(7)	1.64E+00	-	mg/Kg	<0.002	<0.0019	<0.1	<0.0022	<0.0022	0.0113	<0.0015	<0.0015	<0.0018	<0.0017	<0.002	<0.0015	<0.0015	<0.0018	<0.0022
n-Butylbenzene	3.90E+03	(2)	5.10E+04	(5)	1.15E+03	(8)	1.15E+03	-	mg/Kg	<0.001	<0.0009	<0.15	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
n-Propylbenzene	3.40E+03	(2)	2.10E+04	(5)	4.56E+02	(8)	4.56E+02	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	0.00136	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
sec-Butylbenzene	-	-	-	-	-	-	-	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
Styrene	7.28E+03	(1)	9.99E+03	(4)	6.40E+02	(7)	6.40E+02	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
tert-Butylbenzene	-	-	-	-	-	-	-	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
Tetrachloroethene (PCE)	7.02E+00	(1)	2.12E+02	(4)	1.98E-01	(7)	1.98E-01	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
Toluene	5.27E+03	(1)	1.34E+04	(4)	5.84E+02	(7)	5.84E+02	-	mg/Kg	<0.001	0.00426	<0.05	<0.0011	<0.0011	0.00218	0.00215	0.00164	0.00562	0.00346	0.00414	0.00804	0.0047	0.00554	0.00597
trans-1,2-DCE	2.70E+02	(1)	2.73E+02	(4)	1.24E+01	(7)	1.24E+01	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
Trichloroethene (TCE)	8.77E+00	(1)	7.68E+00	(4)	4.85E-01	(7)	4.85E-01	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
Trichlorofluoromethane	1.41E+03	(1)	1.30E+03	(4)	4.10E+02	(7)	4.10E+02	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
Vinyl chloride	7.28E-01	(1)	1.49E+02	(4)	2.50E-02	(7)	2.50E-02	-	mg/Kg	<0.001	<0.0009	<0.05	<0.0011	<0.0011	<0.0008	<0.0008	<0.0008	<0.0009	<0.0008	<0.001	<0.0008	<0.0007	<0.0009	<0.0011
Xylenes, Total	8.14E+02	(1)	7.43E+02	(4)	7.21E+01	(7)	7.21E+01	-	mg/Kg	<0.002	0.0262	<0.1	<0.0022	<0.0022	0.0128	<0.0015	<0.0015	0.0189	0.00384	0.0565	0.00902	0.00699	0.186	0.0112
Semi Volatile Organics - (EPA Method 8270) mg/kg																								
1,2,4-Trichlorobenzene	7.30E+01	(1)	6.87E+01	(4)	4.21E+00	(7)	4.21E+00	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
1,2-Dichlorobenzene	2.31E+03	(1)	2.71E+03	(4)	1.29E+02	(7)	1.29E+02	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
1,4-Dichlorobenzene	3.17E+01	(1)	8.31E+02	(4)	1.47E+00	(7)	1.47E+00	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
1-Methylnaphthalene	1.60E+02	(3)	5.30E+02	(6)	2.35E+00	(8)	2.35E+00	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
2,4,5-Trichlorophenol	6.11E+03	(1)	2.38E+04	(4)	4.78E+03	(7)	4.78E+03	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
2,4,6-Trichlorophenol	6.11E+01	(1)	2.38E+02	(4)	4.78E+01	(7)	4.78E+01	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
2,4-Dichlorophenol	1.83E+02	(1)	7.15E+02	(4)	4.60E+01	(7)	4.60E+01	-	mg/Kg	<0.3991	<2.0053	<2.0074	<0.397	<0.4023	<0.3981	<4.0268	<0.3979	<1.9987	<4.0013	<0.7989	<0.8008	<0.7987	<0.8051	<0.8048
2,4-Dimethylphenol	1.22E+03	(1)	4.76E+03	(4)	3.07E+02	(7)	3.07E+02	-	mg/Kg	<0.2993	<1.504	<1.5055	<0.2977	<0.3017	<0.2986	<3.0201	<0.2984	<1.499	<3.001	<0.5992	<0.6006	<0.599	<0.6038	<0.6036
2,4-Dinitrophenol	1.22E+02	(1)	4.76E+02	(4)	2.91E+01	(7)	2.91E+01	-	mg/Kg	<0.3991	<2.0053	<2.0074	<0.397	<0.4023	<0.3981	<4.0268	<0.3979	<1.9987	<4.0013	<0.7989	<0.8008	<0.7987	<0.8051	<0.8048
2,4-Dinitrotoluene	1.57E+01	(1)	4.76E+02	(4)	1.04E+00	(7)	1.04E+00	-	mg/Kg	<0.4988	<2.5067	<2.5092	<0.4962	<0.5028	<0.4977	<5.0336	<0.4973	<2.4983	<5.0017	<0.9987	<1.001	<0.9983	<1.0064	<1.006
2,6-Dinitrotoluene	6.11E+01	(1)	2.38E+02	(4)	1.77E+01	(7)	1.77E+01	-	mg/Kg	<0.4988	<2.5067	<2.5092	<0.4962	<0.5028	<0.4977	<5.0336	<0.4973	<2.4983	<5.0017	<0.9987	<1.001	<0.9983	<1.0064	<1.006
2-Chloronaphthalene	6.11E+01	(1)	2.94E+02	(4)	4.01E-01	(7)	4.01E-01	-	mg/Kg	<0.2494	<1.2533	<1.2546	<0.2481	<0.2514	<0.2488	<2.5168	<0.2487	<1.2492	<2.5008	<0.4993	<0.5005	<0.4992	<0.5032	<0.503
2-Chlorophenol	3.91E+02	(1)	1.55E+03	(4)	5.33E+01	(7)	5.33E+01	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	6.45E+01	(8)	6.45E+01	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
2-Methylphenol	3.10E+03	(2)	3.10E+04	(5)	2.67E+02	(8)	2.67E+02	-	mg/Kg	<0.4988	<2.5067	<2.5092	<0.4962	<0.5028	<0.4977	<5.0336	<0.4973	<2.4983	<5.0017	<0.9987	<1.001	<0.9983	<1.0064	<1.006
2-Nitroaniline	6.10E+02	(2)	6.00E+03	(5)	2.86E+01	(8)	2.86E+01	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
2-Nitrophenol	-	-	-	-	-	-	-	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024

Table 7
Aeration Basin Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	Units	SWMU 1-7 (16-18')	SWMU 1-8 (10-12')	SWMU 1-8 (12-14')	SWMU 1-8 (16-18')	SWMU 1-8 (19-20')	SWMU 1-8 (4-6')	SWMU 1-9 (0-0.5')	SWMU 1-9 (1.5-2')	SWMU 1-10 (0-0.5')	SWMU 1-10 (1.5-2')	SWMU 1-11 (0-0.5')	SWMU 1-11 (1.5-2')	SWMU 1-12 (0.5-1')	SWMU 1-12 (0-0.5')	SWMU 1-13 (0-0.5')
										1210372-015	1210372-007	1210372-008	1210372-009	1210372-005	1210372-006	1210811-001	1210811-002	1210811-003	1210811-004	1210811-005	1210811-006	1210811-008	1210811-007	1210692-021
										10/4/2012	10/5/2012	10/5/2012	10/5/2012	10/5/2012	10/5/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/12/2012
3,3'-Dichlorobenzidine	1.08E+01	(1)	3.64E+02	(4)	3.41E+00	(7)	3.41E+00	-	mg/Kg	<0.2494	<1.2533	<1.2546	<0.2481	<0.2514	<0.2488	<2.5168	<0.2487	<1.2492	<2.5008	<0.4993	<0.5005	<0.4992	<0.5032	<0.503
3+4-Methylphenol	-	-	-	-	-	-	-	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
3-Nitroaniline	-	-	-	-	-	-	-	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
4,6-Dinitro-2-methylphenol	4.90E+00	(2)	4.90E+01	(5)	9.22E-01	(8)	9.22E-01	-	mg/Kg	<0.4988	<2.5067	<2.5092	<0.4962	<0.5028	<0.4977	<5.0336	<0.4973	<2.4983	<5.0017	<0.9987	<1.001	<0.9983	<1.0064	<1.006
4-Bromophenyl phenyl ether	-	-	-	-	-	-	-	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
4-Chloro-3-methylphenol	6.10E+03	(2)	6.20E+04	(5)	5.99E+02	(8)	5.99E+02	-	mg/Kg	<0.4988	<2.5067	<2.5092	<0.4962	<0.5028	<0.4977	<5.0336	<0.4973	<2.4983	<5.0017	<0.9987	<1.001	<0.9983	<1.0064	<1.006
4-Chloroaniline	2.40E+01	(3)	8.60E+01	(6)	5.99E-02	(8)	5.99E-02	-	mg/Kg	<0.4988	<2.5067	<2.5092	<0.4962	<0.5028	<0.4977	<5.0336	<0.4973	<2.4983	<5.0017	<0.9987	<1.001	<0.9983	<1.0064	<1.006
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	-	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
4-Nitroaniline	2.40E+02	(3)	8.60E+02	(6)	6.45E-01	(8)	6.45E-01	-	mg/Kg	<0.3991	<2.0053	<2.0074	<0.397	<0.4023	<0.3981	<4.0268	<0.3979	<1.9987	<4.0013	<0.7989	<0.8008	<0.7987	<0.8051	<0.8048
4-Nitrophenol	-	-	-	-	-	-	-	-	mg/Kg	<0.2494	<1.2533	<1.2546	<0.2481	<0.2514	<0.2488	<2.5168	<0.2487	<1.2492	<2.5008	<0.4993	<0.5005	<0.4992	<0.5032	<0.503
Acenaphthene	3.44E+03	(1)	1.86E+04	(4)	7.79E+03	(7)	3.44E+03	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Acenaphthylene	-	-	-	-	-	-	-	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Aniline	8.50E+02	(3)	3.00E+03	(6)	1.80E+00	(8)	1.80E+00	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Anthracene	1.72E+04	(1)	6.68E+04	(4)	1.25E+05	(7)	1.72E+04	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Azobenzene	5.10E+01	(3)	2.30E+02	(6)	3.69E-01	(8)	3.69E-01	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Benz(a)anthracene	1.48E+00	(1)	2.13E+02	(4)	3.61E+01	(7)	1.48E+00	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Benzo(a)pyrene	1.48E-01	(1)	2.13E+01	(4)	1.20E+01	(7)	1.48E-01	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Benzo(b)fluoranthene	1.48E+00	(1)	2.13E+02	(4)	1.22E+02	(7)	1.48E+00	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Benzo(g,h,i)perylene	-	-	-	-	-	-	-	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Benzo(k)fluoranthene	1.48E+01	(1)	2.06E+03	(4)	1.20E+03	(7)	1.48E+01	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Benzoic acid	2.40E+05	(2)	2.50E+06	(5)	6.45E+03	(8)	6.45E+03	-	mg/Kg	<0.4988	<2.5067	<2.5092	<0.4962	<0.5028	<0.4977	<5.0336	<0.4973	<2.4983	<5.0017	<0.9987	<1.001	<0.9983	<1.0064	<1.006
Benzyl alcohol	6.10E+03	(2)	6.20E+04	(5)	1.71E+02	(8)	1.71E+02	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Bis(2-chloroethoxy)methane	1.80E+02	(2)	1.80E+03	(5)	5.07E+00	(8)	5.07E+00	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Bis(2-chloroethyl)ether	2.68E+00	(1)	7.78E+01	(4)	1.21E-02	(7)	1.21E-02	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Bis(2-chloroisopropyl)ether	9.15E+01	(1)	3.10E+03	(4)	1.07E+00	(7)	1.07E+00	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Bis(2-ethylhexyl)phthalate	3.47E+02	(1)	4.76E+03	(4)	3.97E+03	(7)	3.47E+02	-	mg/Kg	<0.4988	<2.5067	<2.5092	<0.4962	<0.5028	<0.4977	<5.0336	<0.4973	<2.4983	<5.0017	<0.9987	<1.001	<0.9983	<1.0064	<1.006
Butyl benzyl phthalate	2.60E+03	(3)	9.10E+03	(6)	9.22E+01	(8)	9.22E+01	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Carbazole	-	-	-	-	-	-	-	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Chrysene	1.48E+02	(1)	2.06E+04	(4)	3.68E+03	(7)	1.48E+02	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Dibenz(a,h)anthracene	1.48E-01	(1)	2.13E+01	(4)	3.90E+01	(7)	1.48E-01	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Dibenzofuran	7.80E+01	(2)	1.00E+03	(5)	5.07E+01	(8)	5.07E+01	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Diethyl phthalate	4.89E+04	(1)	1.91E+05	(4)	4.45E+03	(7)	4.45E+03	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(4)	3.71E+04	(7)	3.71E+04	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Di-n-butyl phthalate	6.11E+03	(1)	2.38E+04	(4)	3.21E+03	(7)	3.21E+03	-	mg/Kg	<0.4988	<2.5067	<2.5092	<0.4962	<0.5028	<0.4977	<5.0336	<0.4973	<2.4983	<5.0017	<0.9987	<1.001	<0.9983	<1.0064	<1.006
Di-n-octyl phthalate	-	-	-	-	-	-	-	-	mg/Kg	<0.2494	<1.2533	<1.2546	<0.2481	<0.2514	<0.2488	<4.0268	<0.3979	<1.9987	<4.0013	<0.7989	<0.8008	<0.7987	<0.8051	<0.8048
Fluoranthene	2.29E+03	(1)	8.91E+03	(4)	5.61E+04	(7)	2.29E+03	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Fluorene	2.29E+03	(1)	8.91E+03	(4)	9.36E+03	(7)	2.29E+03	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Hexachlorobenzene	3.04E+00	(1)	1.03E+02	(4)	1.83E+00	(7)	1.83E+00	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Hexachlorobutadiene	6.11E+01	(1)	2.38E+02	(4)	5.91E+00	(7)	5.91E+00	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Hexachlorocyclopentadiene	3.67E+02	(1)	8.11E+02	(4)	2.43E+02	(7)	2.43E+02	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Hexachloroethane	4.28E+01	(1)	1.67E+02	(4)	3.77E+00	(7)	3.77E+00	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Indeno(1,2,3-cd)pyrene	1.48E+00	(1)	2.13E+02	(4)	3.98E+02	(7)	1.48E+00	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Isophorone	5.12E+03	(1)	4.75E+04	(4)	8.84E+01	(7)	8.84E+01	-	mg/Kg	<0.4988	<2.5067	<2.5092	<0.4962	<0.5028	<0.4977	<5.0336	<0.4973	<2.4983	<5.0017	<0.9987	<1.001	<0.9983	<1.0064	<1.006
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	1.64E+00	(7)	1.64E+00	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Nitrobenzene	5.35E+01	(1)	3.32E+02	(4)	2.88E-01	(7)	2.88E-01	-	mg/Kg	<0.4988	<2.5067	<2.5092	<0.4962	<0.5028	<0.4977	<5.0336	<0.4973	<2.4983	<5.0017	<0.9987	<1.001	<0.9983	<1.0064	<1.006
N-Nitrosodi-n-propylamine	6.90E-01	(3)	2.50E+00	(6)	3.23E-03	(8)	3.23E-03	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
N-Nitrosodiphenylamine	9.93E+02	(1)	3.36E+04	(4)	2.61E+02	(7)	2.61E+02	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Pentachlorophenol	8.94E+00	(1)	3.10E+02	(4)	5.90E+00	(7)	5.90E+00	-	mg/Kg	<0.3991	<2.0053	<2.0074	<0.397	<0.4023	<0.3981	<4.0268	<0.3979	<1.9987	<4.0013	<0.7989	<0.8008	<0.7987	<0.8051	<0.8048
Phenanthrene	1.83E+03	(1)	7.15E+03	(4)	1.32E+04	(7)	1.83E+03	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Phenol	1.83E+04	(1)	6.88E+04	(4)	2.29E+03	(7)	2.29E+03	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Pyrene	1.72E+03	(1)	6.68E+03	(4)	4.12E+04	(7)	1.72E+03	-	mg/Kg	<0.1995	<1.0027	<1.0037	<0.1985	<0.2011	<0.1991	<2.0134	<0.1989	<0.9993	<2.0007	<0.3995	<0.4004	<0.3993	<0.4025	<0.4024
Pyridine	7.80E+01	(2)	1.00E+03	(5)	2.44E+00	(8)	2.44E+00	-	mg/Kg	<0.4988	<2.5067	<2.5092	<0.4962	<0.5028	<0.4977	<5.0336	<0.4973	<2.4983	<5.0017	<0.9987	<1.001	<0.9983	<1.0064	<1.006

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Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	Units	SWMU 1-7 (16-18')	SWMU 1-8 (10-12')	SWMU 1-8 (12-14')	SWMU 1-8 (16-18')	SWMU 1-8 (19-20')	SWMU 1-8 (4-6')	SWMU 1-9 (0-0.5')	SWMU 1-9 (1.5-2')	SWMU 1-10 (0-0.5')	SWMU 1-10 (1.5-2')	SWMU 1-11 (0-0.5')	SWMU 1-11 (1.5-2')	SWMU 1-12 (0.5-1')	SWMU 1-12 (0-0.5')	SWMU 1-13 (0-0.5')
										1210372-015 10/4/2012	1210372-007 10/5/2012	1210372-008 10/5/2012	1210372-009 10/5/2012	1210372-005 10/5/2012	1210372-006 10/5/2012	1210811-001 10/15/2012	1210811-002 10/15/2012	1210811-003 10/15/2012	1210811-004 10/15/2012	1210811-005 10/15/2012	1210811-006 10/15/2012	1210811-008 10/15/2012	1210811-007 10/15/2012	1210692-021 10/12/2012
Total Petroleum Hydrocarbons - (EPA Method 8015B) mg/kg																								
Diesel Range Organics (DRO)	1.00E+03	(10)	1.00E+03	(10)	1.00E+03	(10)	-	-	mg/Kg	<10	100	53	<10	<10	<10	<10	<10	45	42	87	120	190	200	77
Gasoline Range Organics (GRO)	-	-	-	-	-	-	-	-	mg/Kg	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<10	<10	<10	<5
Motor Oil Range Organics (MRO)	3.00E+03	(11)	3.00E+03	(11)	3.00E+03	(11)	-	-	mg/Kg	<49	280	<50	<50	<50	<52	280	<50	230	210	86	120	190	150	<51

-- No screening level or analytical result available

NMED - Risk Assessment Guidance for Site Investigations and Remediation (June 14, 2012)

EPA - Regional Screening Levels (May 2012)

(1) NMED Residential Screening Level

(2) EPA Residential Screening Level

(3) EPA Residential - Screening Levels (May 2012) multiplied by 10 because the constituent is listed as carcinogenic

(4) NMED Construction Worker Screening Level

(5) EPA Industrial - Screening Levels (May 2012)

(6) EPA Industrial - Screening Levels (May 2012) multiplied by 10 pursuant to Provision VII.B. of the July 7, 2007 NMED Order because the constituent is listed as carcinogenic

(7) SoilGW NMED Dilution Attenuation Factor (DAF) = 461

(8) SoilGW Risk-based EPA DAF = 461

(9) SoilGW MCL-based EPA DAF = 461

(10) NMED Table 6-2 TPH Screening Guidelines for Potable Groundwater "uknown oil" with DAF = 1.0 - see report Section 5 for use of screening levels

(11) NMED Table 6-2 TPH Screening Guidelines for Potable Groundwater "waste oil" with DAF = 1.0 - see report Section 5 for use of screening levels

(12) Background concentrations to be determined

Bold represents value above Residential Screening Level
yellow highlight represents value above Leachate (DAF) Screening Level
Bold with yellow - value exceeds Residential Screening Level and DAF

Table 7
Aeration Basin Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	Units	SWMU 1-13 (1.5-2')	SWMU 1-13 (2-4')	SWMU 1-13 (4-6')	SWMU 1-14 (0-0.5')	SWMU 1-14 (1.5-2')	SWMU 1-15 (0-0.5')	SWMU 1-15 (1.5-2')	SWMU 1-16 (0-0.5')	SWMU 1-16 (1.5-2')	SWMU 1-17 (0-0.5')	SWMU 1-17 (1-1.5')	SWMU 1-18 (0-0.5')	SWMU 1-18 (1-1.5')	SWMU 1-19 (0-0.5')	SWMU 1-20 (0-0.5')
										1210692-022	1210692-023	1210692-024	1210811-009	1210811-010	1210811-012	1210811-013	1210811-014	1210811-015	1210811-016	1210811-017	1210858-001	1210858-002	1210858-003	1210692-001
										10/12/2012	10/12/2012	10/12/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/16/2012	10/16/2012	10/16/2012	10/11/2012
Metals (mg/kg)																								
Antimony	3.13E+01	(1)	1.24E+02	(4)	3.05E+02	(7)	3.13E+01	-	mg/Kg	<5.0004	<4.9999	<4.9997	<4.9998	<12.5011	<12.501	<5.0002	<5.0002	<12.5	<5	<5	<5	<12.4993	<5	<5
Arsenic	3.90E+00	(1)	5.30E+01	(4)	6.05E+00	(7)	3.90E+00	-	mg/Kg	<5.0004	<4.9999	<4.9997	<4.9998	<12.5011	<12.501	<5.0002	<5.0002	<12.5	<5	<5	<5	<12.4993	<5	<5
Barium	1.56E+04	(1)	4.35E+03	(4)	1.39E+05	(7)	4.35E+03	-	mg/Kg	310	250	120	530	360	360	240	640	290	500	310	700	340	530	740
Beryllium	1.56E+02	(1)	1.44E+02	(4)	2.66E+04	(7)	1.44E+02	-	mg/Kg	0.74	0.6	0.71	1	0.75	0.75	0.79	0.46	<0.7499	0.67	0.78	0.35	<0.75	0.68	0.71
Cadmium	7.03E+01	(1)	2.77E+02	(4)	6.33E+02	(7)	7.03E+01	-	mg/Kg	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2
Chromium III	1.17E+05	(1)	4.65E+05	(4)	4.54E+10	(7)	1.17E+05	-	mg/Kg	7.1	22	7.8	11	11	10	11	3.9	9.9	6.6	8.8	3.4	9.2	13	19
Chromium VI	2.97E+00	(1)	6.56E+01	(4)	3.83E+00	(7)	2.97E+00	-	mg/Kg	7.1	22	7.8	11	11	10	11	3.9	9.9	6.6	8.8	3.4	9.2	13	19
Cobalt	2.30E+01	(2)	3.00E+02	(5)	9.68E+01	(8)	2.30E+01	-	mg/Kg	3.8	4.3	4.1	5.4	4.4	4.4	5.3	3	4.2	4.1	4.1	1.9	3.8	3.8	4
Cyanide	4.69E+01	(1)	1.86E+02	(4)	1.02E+02	(7)	4.69E+01	-	mg/Kg	<0.271	<0.279	<0.284	<0.268	<0.287	<0.276	<0.281	<0.254	<0.285	<0.244	<0.273	<0.261	<0.282	<0.26	<0.247
Iron	5.48E+04	(1)	2.17E+05	(4)	2.98E+05	(7)	5.48E+04	-	mg/Kg	10000	11000	11000	14000	13000	13000	12000	3400	12000	8200	11000	3600	11000	13000	15000
Lead	4.00E+02	(1)	8.00E+02	(4)	6.45E+03	(8)	4.00E+02	-	mg/Kg	3.7	4.2	2.5	1.9	4.1	3.1	1.4	<0.5	4.2	0.82	3.5	<0.5	6.1	2.8	2.6
Manganese	1.86E+03	(1)	4.40E+02	(4)	2.64E+04	(7)	4.40E+02	-	mg/Kg	510	250	320	300	430	350	400	330	790	360	340	300	1500	550	650
Mercury	1.56E+01	(1)	1.36E+01	(4)	1.51E+01	(7)	1.36E+01	-	mg/Kg	<0.033	0.17	<0.033	0.05	<0.033	<0.033	<0.033	<0.033	0.033	<0.033	<0.033	<0.033	<0.033	0.056	0.038
Nickel	1.56E+03	(1)	6.19E+03	(4)	2.20E+04	(7)	1.56E+03	-	mg/Kg	6.1	7	6.6	8.9	7.6	7.6	8.3	4.6	7.2	6.4	7.2	3.6	6.4	6.5	6.9
Selenium	3.91E+02	(1)	1.55E+03	(4)	4.45E+02	(7)	3.91E+02	-	mg/Kg	<5.0004	<4.9999	<4.9997	<4.9998	<12.5011	<12.501	<5.0002	<5.0002	<12.4989	<5	<5.0004	<5	<12.4993	<5	<5
Silver	3.91E+02	(1)	1.55E+03	(4)	7.22E+02	(7)	3.91E+02	-	mg/Kg	<0.5	<0.5	<0.5	<0.5	<1.2501	<1.2501	<0.5	<0.5	<1.2499	<0.5	<0.5	<0.5	<1.2499	<1.25	<0.5
Vanadium	3.91E+02	(1)	1.55E+03	(4)	8.42E+04	(7)	3.91E+02	-	mg/Kg	15	18	17	20	19	19	22	14	18	19	13	11	20	18	22
Zinc	2.35E+04	(1)	9.29E+04	(4)	3.14E+05	(7)	2.35E+04	-	mg/Kg	13	29	14	33	16	18	21	14	17	15	15	11	15	25	22
Volatile Organic Compounds - (EPA Method 8260) mg/kg																								
1,1,1,2-Tetrachloroethane	2.91E+01	(1)	7.79E+02	(4)	7.59E-01	(7)	7.59E-01	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
1,1,1-Trichloroethane	1.56E+04	(1)	1.48E+04	(4)	1.34E+03	(7)	1.34E+03	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
1,1,2,2-Tetrachloroethane	8.02E+00	(1)	2.21E+02	(4)	9.82E-02	(7)	9.82E-02	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
1,1,2-Trichloroethane	2.81E+00	(1)	4.72E+02	(4)	5.14E-02	(7)	5.14E-02	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
1,1-Dichloroethane	6.45E+01	(1)	1.70E+03	(4)	2.75E+00	(7)	2.75E+00	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
1,1-Dichloroethene	4.49E+02	(1)	4.32E+02	(4)	5.36E+01	(7)	5.36E+01	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
1,1-Dichloropropene	-	-	-	-	-	-	-	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
1,2,3-Trichlorobenzene	4.90E+01	(2)	4.90E+02	(5)	6.92E+00	(8)	6.92E+00	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
1,2,3-Trichloropropane	4.97E-02	(1)	7.23E+00	(4)	1.15E-03	(7)	1.15E-03	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
1,2,4-Trichlorobenzene	7.30E+01	(1)	6.87E+01	(4)	4.21E+00	(7)	4.21E+00	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
1,2,4-Trimethylbenzene	6.20E+01	(2)	2.60E+02	(5)	9.68E+00	(8)	9.68E+00	-	mg/Kg	0.00263	<0.0011	<0.0011	0.00194	<0.0009	<0.0007	<0.0007	0.00423	<0.0007	0.00424	<0.0008	0.00455	<0.0007	<0.001	0.0014
1,2-Dibromo-3-chloropropane	1.86E+00	(1)	5.07E+00	(4)	5.07E-04	(7)	5.07E-04	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
1,2-Dibromoethane (EDB)	5.88E-01	(1)	1.60E+01	(4)	7.10E-03	(7)	7.10E-03	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
1,2-Dichlorobenzene	2.31E+03	(1)	2.71E+03	(4)	1.29E+02	(7)	1.29E+02	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
1,2-Dichloroethane (EDC)	7.89E+00	(1)	5.87E+01	(4)	1.64E-01	(7)	1.64E-01	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
1,2-Dichloropropane	1.52E+01	(1)	2.50E+01	(4)	4.94E-01	(7)	4.94E-01	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.00E+04	(5)	5.53E+01	(8)	5.53E+01	-	mg/Kg	0.00102	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	0.00176	<0.0007	0.00164	<0.0008	0.00192	<0.0007	<0.001	<0.0008
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
1,3-Dichloropropane	1.60E+03	(2)	2.00E+04	(5)	4.56E+01	(8)	4.56E+01	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
1,4-Dichlorobenzene	3.17E+01	(1)	8.31E+02	(4)	1.47E+00	(7)	1.47E+00	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
1-Methylnaphthalene	1.60E+02	(3)	5.30E+02	(6)	2.35E+00	(8)	2.35E+00	-	mg/Kg	<0.0033	<0.0045	<0.0046	<0.003	<0.0036	<0.0029	<0.0029	<0.0031	<0.003	<0.003	<0.0033	<0.0029	<0.003	<0.0039	<0.0032
2,2-Dichloropropane	-	-	-	-	-	-	-	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
2-Butanone (MEK)	3.71E+04	(1)	8.43E+04	(4)	5.87E+02	(7)	5.87E+02	-	mg/Kg	<0.0082	<0.0112	<0.0114	<0.0074	<0.0089	<0.0073	<0.0072	<0.0079	<0.0074	<0.0075	0.0107	<0.0072	<0.0075	<0.0097	0.022
2-Chlorotoluene	1.56E+03	(1)	6.19E+03	(4)	2.57E+02	(7)	2.57E+02	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
2-Hexanone	9.38E+02	(1)	9.73E+02	(4)	3.53E+03	(7)	9.38E+02	-	mg/Kg	<0.0082	<0.0112	<0.0114	<0.0074	<0.0089	<0.0073	<0.0072	<0.0079	<0.0074	<0.0075	<0.0083	<0.0072	<0.0075	<0.0097	<0.0081
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	6.45E+01	(8)	6.45E+01	-	mg/Kg	<0.0033	<0.0045	<0.0046	<0.003	<0.0036	<0.0029	<0.0029	<0.0031	<0.003	<0.003	<0.0033	<0.0029	<0.003	<0.0039	<0.0032
4-Chlorotoluene	1.60E+03	(2)	2.00E+04	(5)	8.30E+01	(8)	8.30E+01	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
4-Isopropyltoluene	-	-	-	-	-	-	-	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
4-Methyl-2-pentanone	5.30E+03	(2)	5.30E+04	(5)	1.06E+02	(8)	1.06E+02	-	mg/Kg	<0.0082	<0.0112	<0.0114	<0.0074	<0.0089	<0.0073	<0.0072	<0.0079	<0.0074	<0.0075	<0.0083	<0.0072	<0.0075	<0.0097	<0.0081
Acetone	6.66E+04	(1)	2.21E+05	(4)	1.78E+03	(7)	1.78E+03	-	mg/Kg	0.0479	0.0716	0.0561	0.0471	0.0202	0.0754	0.0328	0.0845	0.0282	0.377	0.0615	0.148	0.0512	0.0988	3.31
Benzene	1.54E+01	(1)	1.38E+02	(4)	7.96E-01	(7)	7.96E-01	-	mg/Kg	0.00142	<0.0011	<0.0011	0.00171	<0.0009	0.00192	<0.0007	0.00134	0.00166	0.00129	0.00269	0.00109	0.0016	0.00225	0.00137
Bromobenzene	3.00E+02	(2)	1.80E+03	(5)	1.66E+01	(8)	1.66E+01	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008

Table 7
Aeration Basin Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	Units	SWMU 1-13 (1.5-2')	SWMU 1-13 (2-4')	SWMU 1-13 (4-6')	SWMU 1-14 (0-0.5')	SWMU 1-14 (1.5-2')	SWMU 1-15 (0-0.5')	SWMU 1-15 (1.5-2')	SWMU 1-16 (0-0.5')	SWMU 1-16 (1.5-2')	SWMU 1-17 (0-0.5')	SWMU 1-17 (1-1.5')	SWMU 1-18 (0-0.5')	SWMU 1-18 (1-1.5')	SWMU 1-19 (0-0.5')	SWMU 1-20 (0-0.5')
										1210692-022	1210692-023	1210692-024	1210811-009	1210811-010	1210811-012	1210811-013	1210811-014	1210811-015	1210811-016	1210811-017	1210858-001	1210858-002	1210858-003	1210692-001
										10/12/2012	10/12/2012	10/12/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/16/2012	10/16/2012	10/16/2012	10/11/2012
Bromodichloromethane	5.41E+00	(1)	1.43E+02	(4)	1.25E-01	(7)	1.25E-01	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
Bromoform	6.16E+02	(1)	4.76E+03	(4)	2.78E+02	(7)	2.78E+02	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
Bromomethane	1.65E+01	(1)	1.64E+01	(4)	8.86E-01	(7)	8.86E-01	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
Carbon disulfide	1.53E+03	(1)	1.58E+03	(4)	1.30E+02	(7)	1.30E+02	-	mg/Kg	<0.0082	<0.0112	<0.0114	<0.0074	<0.0089	<0.0073	<0.0072	<0.0079	<0.0074	<0.0075	<0.0083	<0.0072	<0.0075	<0.0097	<0.0081
Carbon tetrachloride	1.08E+01	(1)	2.26E+02	(4)	7.39E-01	(7)	7.39E-01	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
Chlorobenzene	3.76E+02	(1)	4.06E+02	(4)	2.27E+01	(7)	2.27E+01	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
Chloroethane	2.98E+04	(1)	2.61E+04	(4)	2.48E+03	(7)	2.48E+03	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
Chloroform	5.86E+00	(1)	1.54E+02	(4)	2.12E-01	(7)	2.12E-01	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
Chloromethane	2.75E+02	(1)	2.41E+02	(4)	2.03E+01	(7)	2.03E+01	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
cis-1,2-DCE	1.56E+02	(1)	6.19E+02	(4)	8.47E+00	(7)	8.47E+00	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
cis-1,3-Dichloropropene	3.37E+01	(1)	2.09E+02	(4)	5.71E-01	(7)	5.71E-01	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
Dibromochloromethane	1.21E+01	(1)	3.32E+02	(4)	1.52E-01	(7)	1.52E-01	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
Dibromomethane	5.16E+01	(1)	3.10E+03	(4)	7.89E-01	(7)	7.89E-01	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
Dichlorodifluoromethane	1.68E+02	(1)	1.49E+02	(4)	1.71E+02	(7)	1.49E+02	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
Ethylbenzene	6.84E+01	(1)	1.83E+03	(4)	5.98E+00	(7)	5.98E+00	-	mg/Kg	0.00134	<0.0011	<0.0011	0.00165	<0.0009	<0.0007	<0.0007	0.00282	<0.0007	0.00362	<0.0008	0.00386	<0.0007	<0.001	0.0448
Hexachlorobutadiene	6.11E+01	(1)	2.38E+02	(4)	5.91E+00	(7)	5.91E+00	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
Isopropylbenzene	2.43E+03	(1)	2.81E+03	(4)	3.99E+02	(7)	3.99E+02	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	0.0021
Methyl tert-butyl ether (MTBE)	9.01E+02	(1)	2.49E+04	(4)	1.11E+01	(7)	1.11E+01	-	mg/Kg	<0.0008	0.0199	0.003	<0.0007	<0.0009	<0.0007	0.00147	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
Methylene chloride	4.09E+02	(1)	1.12E+03	(4)	1.90E+01	(7)	1.90E+01	-	mg/Kg	<0.0025	<0.0034	<0.0034	<0.0022	<0.0027	<0.0022	<0.0022	<0.0024	<0.0022	<0.0023	<0.0025	<0.0022	<0.0022	<0.0029	<0.0024
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	1.64E+00	(7)	1.64E+00	-	mg/Kg	<0.0016	<0.0022	<0.0023	<0.0015	<0.0018	<0.0015	<0.0014	<0.0016	<0.0015	<0.0015	<0.0017	<0.0014	<0.0015	<0.0019	<0.0016
n-Butylbenzene	3.90E+03	(2)	5.10E+04	(5)	1.15E+03	(8)	1.15E+03	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
n-Propylbenzene	3.40E+03	(2)	2.10E+04	(5)	4.56E+02	(8)	4.56E+02	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
sec-Butylbenzene	-	-	-	-	-	-	-	-	mg/Kg	<0.0008	0.00128	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
Styrene	7.28E+03	(1)	9.99E+03	(4)	6.40E+02	(7)	6.40E+02	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
tert-Butylbenzene	-	-	-	-	-	-	-	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
Tetrachloroethene (PCE)	7.02E+00	(1)	2.12E+02	(4)	1.98E-01	(7)	1.98E-01	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
Toluene	5.27E+03	(1)	1.34E+04	(4)	5.84E+02	(7)	5.84E+02	-	mg/Kg	0.00586	<0.0011	<0.0011	0.00574	<0.0009	0.00151	<0.0007	0.00712	0.00157	0.00708	0.00185	0.00687	0.0019	0.0029	0.00197
trans-1,2-DCE	2.70E+02	(1)	2.73E+02	(4)	1.24E+01	(7)	1.24E+01	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
Trichloroethene (TCE)	8.77E+00	(1)	7.68E+00	(4)	4.85E-01	(7)	4.85E-01	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
Trichlorofluoromethane	1.41E+03	(1)	1.30E+03	(4)	4.10E+02	(7)	4.10E+02	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
Vinyl chloride	7.28E-01	(1)	1.49E+02	(4)	2.50E-02	(7)	2.50E-02	-	mg/Kg	<0.0008	<0.0011	<0.0011	<0.0007	<0.0009	<0.0007	<0.0007	<0.0008	<0.0007	<0.0008	<0.0008	<0.0007	<0.0007	<0.001	<0.0008
Xylenes, Total	8.14E+02	(1)	7.43E+02	(4)	7.21E+01	(7)	7.21E+01	-	mg/Kg	0.00573	<0.0022	<0.0023	0.00542	<0.0018	0.00254	<0.0014	0.013	<0.0015	0.0234	<0.0017	0.021	0.00154	<0.0019	0.279
Semi Volatile Organics - (EPA Method 8270) mg/kg																								
1,2,4-Trichlorobenzene	7.30E+01	(1)	6.87E+01	(4)	4.21E+00	(7)	4.21E+00	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
1,2-Dichlorobenzene	2.31E+03	(1)	2.71E+03	(4)	1.29E+02	(7)	1.29E+02	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
1,4-Dichlorobenzene	3.17E+01	(1)	8.31E+02	(4)	1.47E+00	(7)	1.47E+00	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
1-Methylnaphthalene	1.60E+02	(3)	5.30E+02	(6)	2.35E+00	(8)	2.35E+00	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
2,4,5-Trichlorophenol	6.11E+03	(1)	2.38E+04	(4)	4.78E+03	(7)	4.78E+03	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
2,4,6-Trichlorophenol	6.11E+01	(1)	2.38E+02	(4)	4.78E+01	(7)	4.78E+01	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
2,4-Dichlorophenol	1.83E+02	(1)	7.15E+02	(4)	4.60E+01	(7)	4.60E+01	-	mg/Kg	<0.8019	<0.4032	<0.3966	<0.7968	<0.3984	<0.4023	<0.4016	<0.8027	<0.8008	<0.7992	<0.7947	<0.4001	<0.4025	<0.8038	<0.8046
2,4-Dimethylphenol	1.22E+03	(1)	4.76E+03	(4)	3.07E+02	(7)	3.07E+02	-	mg/Kg	<0.6014	<0.3024	<0.2974	<0.5976	<0.2988	<0.3017	<0.3012	<0.602	<0.6006	<0.5994	<0.596	<0.3001	<0.3019	<0.6028	<0.6034
2,4-Dinitrophenol	1.22E+02	(1)	4.76E+02	(4)	2.91E+01	(7)	2.91E+01	-	mg/Kg	<0.8019	<0.4032	<0.3966	<0.7968	<0.3984	<0.4023	<0.4016	<0.8027	<0.8008	<0.7992	<0.7947	<0.4001	<0.4025	<0.8038	<0.8046
2,4-Dinitrotoluene	1.57E+01	(1)	4.76E+02	(4)	1.04E+00	(7)	1.04E+00	-	mg/Kg	<1.0023	<0.504	<0.4957	<0.996	<0.498	<0.5028	<0.502	<1.0033	<1.001	<0.999	<0.9934	<0.5002	<0.5032	<1.0047	<1.0057
2,6-Dinitrotoluene	6.11E+01	(1)	2.38E+02	(4)	1.77E+01	(7)	1.77E+01	-	mg/Kg	<1.0023	<0.504	<0.4957	<0.996	<0.498	<0.5028	<0.502	<1.0033	<1.001	<0.999	<0.9934	<0.5002	<0.5032	<1.0047	<1.0057
2-Chloronaphthalene	6.11E+01	(1)	2.94E+02	(4)	4.01E-01	(7)	4.01E-01	-	mg/Kg	<0.5012	<0.252	<0.2479	<0.498	<0.249	<0.2514	<0.251	<0.5017	<0.5005	<0.4995	<0.4967	<0.2501	<0.2516	<0.5023	<0.5028
2-Chlorophenol	3.91E+02	(1)	1.55E+03	(4)	5.33E+01	(7)	5.33E+01	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	6.45E+01	(8)	6.45E+01	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
2-Methylphenol	3.10E+03	(2)	3.10E+04	(5)	2.67E+02	(8)	2.67E+02	-	mg/Kg	<1.0023	<0.504	<0.4957	<0.996	<0.498	<0.5028	<0.502	<1.0033	<1.001	<0.999	<0.9934	<0.5002	<0.5032	<1.0047	<1.0057
2-Nitroaniline	6.10E+02	(2)	6.00E+03	(5)	2.86E+01	(8)	2.86E+01	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
2-Nitrophenol	-	-	-	-	-	-	-	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023

Table 7
Aeration Basin Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	Units	SWMU 1-13 (1.5-2')	SWMU 1-13 (2-4')	SWMU 1-13 (4-6')	SWMU 1-14 (0-0.5')	SWMU 1-14 (1.5-2')	SWMU 1-15 (0-0.5')	SWMU 1-15 (1.5-2')	SWMU 1-16 (0-0.5')	SWMU 1-16 (1.5-2')	SWMU 1-17 (0-0.5')	SWMU 1-17 (1-1.5')	SWMU 1-18 (0-0.5')	SWMU 1-18 (1-1.5')	SWMU 1-19 (0-0.5')	SWMU 1-20 (0-0.5')
										1210692-022	1210692-023	1210692-024	1210811-009	1210811-010	1210811-012	1210811-013	1210811-014	1210811-015	1210811-016	1210811-017	1210858-001	1210858-002	1210858-003	1210692-001
										10/12/2012	10/12/2012	10/12/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/15/2012	10/16/2012	10/16/2012	10/16/2012	10/11/2012
3,3'-Dichlorobenzidine	1.08E+01	(1)	3.64E+02	(4)	3.41E+00	(7)	3.41E+00	-	mg/Kg	<0.5012	<0.252	<0.2479	<0.498	<0.249	<0.2514	<0.251	<0.5017	<0.5005	<0.4995	<0.4967	<0.2501	<0.2516	<0.5023	<0.5028
3+4-Methylphenol	-	-	-	-	-	-	-	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
3-Nitroaniline	-	-	-	-	-	-	-	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
4,6-Dinitro-2-methylphenol	4.90E+00	(2)	4.90E+01	(5)	9.22E-01	(8)	9.22E-01	-	mg/Kg	<1.0023	<0.504	<0.4957	<0.996	<0.498	<0.5028	<0.502	<1.0033	<1.001	<0.999	<0.9934	<0.5002	<0.5032	<1.0047	<1.0057
4-Bromophenyl phenyl ether	-	-	-	-	-	-	-	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
4-Chloro-3-methylphenol	6.10E+03	(2)	6.20E+04	(5)	5.99E+02	(8)	5.99E+02	-	mg/Kg	<1.0023	<0.504	<0.4957	<0.996	<0.498	<0.5028	<0.502	<1.0033	<1.001	<0.999	<0.9934	<0.5002	<0.5032	<1.0047	<1.0057
4-Chloroaniline	2.40E+01	(3)	8.60E+01	(6)	5.99E-02	(8)	5.99E-02	-	mg/Kg	<1.0023	<0.504	<0.4957	<0.996	<0.498	<0.5028	<0.502	<1.0033	<1.001	<0.999	<0.9934	<0.5002	<0.5032	<1.0047	<1.0057
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	-	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
4-Nitroaniline	2.40E+02	(3)	8.60E+02	(6)	6.45E-01	(8)	6.45E-01	-	mg/Kg	<0.8019	<0.4032	<0.3966	<0.7968	<0.3984	<0.4023	<0.4016	<0.8027	<0.8008	<0.7992	<0.7947	<0.4001	<0.4025	<0.8038	<0.8046
4-Nitrophenol	-	-	-	-	-	-	-	-	mg/Kg	<0.5012	<0.252	<0.2479	<0.498	<0.249	<0.2514	<0.251	<0.5017	<0.5005	<0.4995	<0.4967	<0.2501	<0.2516	<0.5023	<0.5028
Acenaphthene	3.44E+03	(1)	1.86E+04	(4)	7.79E+03	(7)	3.44E+03	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Acenaphthylene	-	-	-	-	-	-	-	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Aniline	8.50E+02	(3)	3.00E+03	(6)	1.80E+00	(8)	1.80E+00	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Anthracene	1.72E+04	(1)	6.68E+04	(4)	1.25E+05	(7)	1.72E+04	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Azobenzene	5.10E+01	(3)	2.30E+02	(6)	3.69E-01	(8)	3.69E-01	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Benz(a)anthracene	1.48E+00	(1)	2.13E+02	(4)	3.61E+01	(7)	1.48E+00	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Benzo(a)pyrene	1.48E-01	(1)	2.13E+01	(4)	1.20E+01	(7)	1.48E-01	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Benzo(b)fluoranthene	1.48E+00	(1)	2.13E+02	(4)	1.22E+02	(7)	1.48E+00	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Benzo(g,h,i)perylene	-	-	-	-	-	-	-	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Benzo(k)fluoranthene	1.48E+01	(1)	2.06E+03	(4)	1.20E+03	(7)	1.48E+01	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Benzoic acid	2.40E+05	(2)	2.50E+06	(5)	6.45E+03	(8)	6.45E+03	-	mg/Kg	<1.0023	<0.504	<0.4957	<0.996	<0.498	<0.5028	<0.502	<1.0033	<1.001	<0.999	<0.9934	<0.5002	<0.5032	<1.0047	<1.0057
Benzyl alcohol	6.10E+03	(2)	6.20E+04	(5)	1.71E+02	(8)	1.71E+02	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Bis(2-chloroethoxy)methane	1.80E+02	(2)	1.80E+03	(5)	5.07E+00	(8)	5.07E+00	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Bis(2-chloroethyl)ether	2.68E+00	(1)	7.78E+01	(4)	1.21E-02	(7)	1.21E-02	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Bis(2-chloroisopropyl)ether	9.15E+01	(1)	3.10E+03	(4)	1.07E+00	(7)	1.07E+00	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Bis(2-ethylhexyl)phthalate	3.47E+02	(1)	4.76E+03	(4)	3.97E+03	(7)	3.47E+02	-	mg/Kg	<1.0023	<0.504	<0.4957	1.5	<0.498	<0.5028	<0.502	<1.0033	<1.001	<0.999	<0.9934	<0.5002	<0.5032	<1.0047	<1.0057
Butyl benzyl phthalate	2.60E+03	(3)	9.10E+03	(6)	9.22E+01	(8)	9.22E+01	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Carbazole	-	-	-	-	-	-	-	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Chrysene	1.48E+02	(1)	2.06E+04	(4)	3.68E+03	(7)	1.48E+02	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Dibenz(a,h)anthracene	1.48E-01	(1)	2.13E+01	(4)	3.90E+01	(7)	1.48E-01	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Dibenzofuran	7.80E+01	(2)	1.00E+03	(5)	5.07E+01	(8)	5.07E+01	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Diethyl phthalate	4.89E+04	(1)	1.91E+05	(4)	4.45E+03	(7)	4.45E+03	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(4)	3.71E+04	(7)	3.71E+04	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Di-n-butyl phthalate	6.11E+03	(1)	2.38E+04	(4)	3.21E+03	(7)	3.21E+03	-	mg/Kg	<1.0023	<0.504	<0.4957	<0.996	<0.498	<0.5028	<0.502	<1.0033	<1.001	<0.999	<0.9934	<0.5002	<0.5032	<1.0047	<1.0057
Di-n-octyl phthalate	-	-	-	-	-	-	-	-	mg/Kg	<0.8019	<0.4032	<0.3966	<0.7968	<0.3984	<0.4023	<0.4016	<0.8027	<0.8008	<0.7992	<0.7947	<0.4001	<0.4025	<0.8038	<0.8046
Fluoranthene	2.29E+03	(1)	8.91E+03	(4)	5.61E+04	(7)	2.29E+03	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Fluorene	2.29E+03	(1)	8.91E+03	(4)	9.36E+03	(7)	2.29E+03	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Hexachlorobenzene	3.04E+00	(1)	1.03E+02	(4)	1.83E+00	(7)	1.83E+00	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Hexachlorobutadiene	6.11E+01	(1)	2.38E+02	(4)	5.91E+00	(7)	5.91E+00	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Hexachlorocyclopentadiene	3.67E+02	(1)	8.11E+02	(4)	2.43E+02	(7)	2.43E+02	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Hexachloroethane	4.28E+01	(1)	1.67E+02	(4)	3.77E+00	(7)	3.77E+00	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Indeno(1,2,3-cd)pyrene	1.48E+00	(1)	2.13E+02	(4)	3.98E+02	(7)	1.48E+00	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Isophorone	5.12E+03	(1)	4.75E+04	(4)	8.84E+01	(7)	8.84E+01	-	mg/Kg	<1.0023	<0.504	<0.4957	<0.996	<0.498	<0.5028	<0.502	<1.0033	<1.001	<0.999	<0.9934	<0.5002	<0.5032	<1.0047	<1.0057
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	1.64E+00	(7)	1.64E+00	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Nitrobenzene	5.35E+01	(1)	3.32E+02	(4)	2.88E-01	(7)	2.88E-01	-	mg/Kg	<1.0023	<0.504	<0.4957	<0.996	<0.498	<0.5028	<0.502	<1.0033	<1.001	<0.999	<0.9934	<0.5002	<0.5032	<1.0047	<1.0057
N-Nitrosodi-n-propylamine	6.90E-01	(3)	2.50E+00	(6)	3.23E-03	(8)	3.23E-03	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
N-Nitrosodiphenylamine	9.93E+02	(1)	3.36E+04	(4)	2.61E+02	(7)	2.61E+02	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Pentachlorophenol	8.94E+00	(1)	3.10E+02	(4)	5.90E+00	(7)	5.90E+00	-	mg/Kg	<0.8019	<0.4032	<0.3966	<0.7968	<0.3984	<0.4023	<0.4016	<0.8027	<0.8008	<0.7992	<0.7947	<0.4001	<0.4025	<0.8038	<0.8046
Phenanthrene	1.83E+03	(1)	7.15E+03	(4)	1.32E+04	(7)	1.83E+03	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Phenol	1.83E+04	(1)	6.88E+04	(4)	2.29E+03	(7)	2.29E+03	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Pyrene	1.72E+03	(1)	6.68E+03	(4)	4.12E+04	(7)	1.72E+03	-	mg/Kg	<0.4009	<0.2016	<0.1983	<0.3984	<0.1992	<0.2011	<0.2008	<0.4013	<0.4004	<0.3996	<0.3974	<0.2001	<0.2013	<0.4019	<0.4023
Pyridine	7.80E+01	(2)	1.00E+03	(5)	2.44E+00	(8)	2.44E+00	-	mg/Kg	<1.0023	<0.504	<0.4957	<0.996	<0.498	<0.5028	<0.502	<1.0033	<1.001	<0.999	<0.9934	<0.5002	<0.5032	<1.0047	<1.0057

Table 7
Aeration Basin Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	Units	SWMU 1-13 (1.5-2')	SWMU 1-13 (2-4')	SWMU 1-13 (4-6')	SWMU 1-14 (0-0.5')	SWMU 1-14 (1.5-2')	SWMU 1-15 (0-0.5')	SWMU 1-15 (1.5-2')	SWMU 1-16 (0-0.5')	SWMU 1-16 (1.5-2')	SWMU 1-17 (0-0.5')	SWMU 1-17 (1-1.5')	SWMU 1-18 (0-0.5')	SWMU 1-18 (1-1.5')	SWMU 1-19 (0-0.5')	SWMU 1-20 (0-0.5')
										1210692-022 10/12/2012	1210692-023 10/12/2012	1210692-024 10/12/2012	1210811-009 10/15/2012	1210811-010 10/15/2012	1210811-012 10/15/2012	1210811-013 10/15/2012	1210811-014 10/15/2012	1210811-015 10/15/2012	1210811-016 10/15/2012	1210811-017 10/15/2012	1210858-001 10/16/2012	1210858-002 10/16/2012	1210858-003 10/16/2012	1210692-001 10/11/2012
Total Petroleum Hydrocarbons - (EPA Method 8015B) mg/kg																								
Diesel Range Organics (DRO)	1.00E+03	(10)	1.00E+03	(10)	1.00E+03	(10)	-	-	mg/Kg	16	<10	<10	58	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Gasoline Range Organics (GRO)	-	-	-	-	-	-	-	-	mg/Kg	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Motor Oil Range Organics (MRO)	3.00E+03	(11)	3.00E+03	(11)	3.00E+03	(11)	-	-	mg/Kg	<51	<50	<49	94	<48	<49	<48	<49	<50	<51	<49	<50	<50	<52	<50

-- No screening level or analytical result available

NMED - Risk Assessment Guidance for Site Investigations and Remediation (June 14, 2012)

EPA - Regional Screening Levels (May 2012)

(1) NMED Residential Screening Level

(2) EPA Residential Screening Level

(3) EPA Residential - Screening Levels (May 2012) multiplied by 10 because the constituent is listed as carcinogenic

(4) NMED Construction Worker Screening Level

(5) EPA Industrial - Screening Levels (May 2012)

(6) EPA Industrial - Screening Levels (May 2012) multiplied by 10 pursuant to Provision VII.B. of the July 7, 2007 NMED Order because the constituent is listed as carcinogenic

(7) SoilGW NMED Dilution Attenuation Factor (DAF) = 461

(8) SoilGW Risk-based EPA DAF = 461

(9) SoilGW MCL-based EPA DAF = 461

(10) NMED Table 6-2 TPH Screening Guidelines for Potable Groundwater "uknown oil" with DAF = 1.0 - see report Section 5 for use of screening levels

(11) NMED Table 6-2 TPH Screening Guidelines for Potable Groundwater "waste oil" with DAF = 1.0 - see report Section 5 for use of screening levels

(12) Background concentrations to be determined

Bold represents value above Residential Screening Level
yellow highlight represents value above Leachate (DAF) Screening Level
Bold with yellow - value exceeds Residential Screening Level and DAF

Table 7
Aeration Basin Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	Units	SWMU 1-20 (1.5-2')	SWMU 1-20 (10-12')	SWMU 1-20 (4-6')	SWMU 1-21 (0-0.5')	SWMU 1-22 (0-0.5')	SWMU 1-22 (1.5-2')	SWMU 1-23 (0-0.5')	SWMU 1-24 (0-0.5')	SWMU 1-24 (1.5-2')	SWMU 1-24 (10.5-11.5')	SWMU 1-24 (16-18')	SWMU 1-24 (24-26')	SWMU 1-24 (32-34')	SWMU 1-25 (0.5-1')	SWMU 1-25 (0-0.5')
										1210692-003	1210692-005	1210692-004	1210858-004	1210858-006	1210858-007	1210859-001	1210521-001	1210521-003	1210521-004	1210521-005	1210521-006	1210521-007	1210859-004	1210859-003
										10/11/2012	10/11/2012	10/11/2012	10/16/2012	10/16/2012	10/16/2012	10/16/2012	10/8/2012	10/8/2012	10/8/2012	10/8/2012	10/8/2012	10/8/2012	10/16/2012	10/16/2012
Metals (mg/kg)																								
Antimony	3.13E+01	(1)	1.24E+02	(4)	3.05E+02	(7)	3.13E+01	-	mg/Kg	<12.5002	<5	<5	<5	<5	<5	<5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<5	<5
Arsenic	3.90E+00	(1)	5.30E+01	(4)	6.05E+00	(7)	3.90E+00	-	mg/Kg	<12.5002	<5	<5	<5	<5	<5	<5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<5	<5
Barium	1.56E+04	(1)	4.35E+03	(4)	1.39E+05	(7)	4.35E+03	-	mg/Kg	1000	1100	190	440	590	500	670	220	330	360	480	160	220	360	370
Beryllium	1.56E+02	(1)	1.44E+02	(4)	2.66E+04	(7)	1.44E+02	-	mg/Kg	<0.75	1	0.97	0.77	0.89	0.69	0.69	<0.75	0.86	<0.75	<0.75	0.89	<0.75	0.45	0.53
Cadmium	7.03E+01	(1)	2.77E+02	(4)	6.33E+02	(7)	7.03E+01	-	mg/Kg	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.2
Chromium III	1.17E+05	(1)	4.65E+05	(4)	4.54E+10	(7)	1.17E+05	-	mg/Kg	11	12	10	9.9	14	9.8	16	9.5	7.4	4.9	5.9	9.9	8.1	12	14
Chromium VI	2.97E+00	(1)	6.56E+01	(4)	3.83E+00	(7)	2.97E+00	-	mg/Kg	11	12	10	9.9	14	9.8	16	9.5	7.4	4.9	5.9	9.9	8.1	12	14
Cobalt	2.30E+01	(2)	3.00E+02	(5)	9.68E+01	(8)	2.30E+01	-	mg/Kg	4.7	5.8	4.9	4.1	5.3	3.8	4	5.1	4.4	3.9	3	4.8	3.9	4.3	3.2
Cyanide	4.69E+01	(1)	1.86E+02	(4)	1.02E+02	(7)	4.69E+01	-	mg/Kg	<0.256	<0.293	<0.278	<0.274	<0.282	<0.273	<0.253	<0.3	<0.3	<0.3	<0.3	0.908	<0.3	<0.268	<0.259
Iron	5.48E+04	(1)	2.17E+05	(4)	2.98E+05	(7)	5.48E+04	-	mg/Kg	16000	18000	17000	14000	22000	14000	14000	20000	12000	10000	9500	13000	24000	10000	11000
Lead	4.00E+02	(1)	8.00E+02	(4)	6.45E+03	(8)	4.00E+02	-	mg/Kg	3.9	1.5	2.8	2.6	3.5	2.4	3	9.3	4.4	5.2	4.9	3.4	8.6	4.1	5.6
Manganese	1.86E+03	(1)	4.40E+02	(4)	2.64E+04	(7)	4.40E+02	-	mg/Kg	950	540	330	450	530	330	980	520	410	710	790	640	730	270	310
Mercury	1.56E+01	(1)	1.36E+01	(4)	1.51E+01	(7)	1.36E+01	-	mg/Kg	<0.033	<0.033	<0.033	<0.033	0.034	<0.033	0.11	<0.033	<0.033	<0.033	<0.033	<0.033	<0.033	0.034	<0.033
Nickel	1.56E+03	(1)	6.19E+03	(4)	2.20E+04	(7)	1.56E+03	-	mg/Kg	7.3	12	8.6	7.5	8.6	6.9	7.9	9	7	5.6	4.7	7.7	5	9.8	8.6
Selenium	3.91E+02	(1)	1.55E+03	(4)	4.45E+02	(7)	3.91E+02	-	mg/Kg	<12.5002	<5	<5	<5	<5	<5	<5	<12.5	<12.5	<12.5	<12.5	<5	<12.5	<5	<5
Silver	3.91E+02	(1)	1.55E+03	(4)	7.22E+02	(7)	3.91E+02	-	mg/Kg	<1.25	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<0.5	<0.25
Vanadium	3.91E+02	(1)	1.55E+03	(4)	8.42E+04	(7)	3.91E+02	-	mg/Kg	29	21	17	19	27	18	19	24	14	13	16	23	53	20	21
Zinc	2.35E+04	(1)	9.29E+04	(4)	3.14E+05	(7)	2.35E+04	-	mg/Kg	17	24	16	17	26	15	21	34	13	<12.5	<12.5	17	<12.5	28	27
Volatile Organic Compounds - (EPA Method 8260) mg/kg																								
1,1,1,2-Tetrachloroethane	2.91E+01	(1)	7.79E+02	(4)	7.59E-01	(7)	7.59E-01	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
1,1,1-Trichloroethane	1.56E+04	(1)	1.48E+04	(4)	1.34E+03	(7)	1.34E+03	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
1,1,2,2-Tetrachloroethane	8.02E+00	(1)	2.21E+02	(4)	9.82E-02	(7)	9.82E-02	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
1,1,2-Trichloroethane	2.81E+00	(1)	4.72E+02	(4)	5.14E-02	(7)	5.14E-02	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
1,1-Dichloroethane	6.45E+01	(1)	1.70E+03	(4)	2.75E+00	(7)	2.75E+00	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
1,1-Dichloroethene	4.49E+02	(1)	4.32E+02	(4)	5.36E+01	(7)	5.36E+01	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
1,1-Dichloropropene	-	-	-	-	-	-	-	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
1,2,3-Trichlorobenzene	4.90E+01	(2)	4.90E+02	(5)	6.92E+00	(8)	6.92E+00	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
1,2,3-Trichloropropane	4.97E-02	(1)	7.23E+00	(4)	1.15E-03	(7)	1.15E-03	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
1,2,4-Trichlorobenzene	7.30E+01	(1)	6.87E+01	(4)	4.21E+00	(7)	4.21E+00	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
1,2,4-Trimethylbenzene	6.20E+01	(2)	2.60E+02	(5)	9.68E+00	(8)	9.68E+00	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	0.00102	0.00108	<0.0007	<0.0007	0.00202	0.0306	<0.001	0.0011	<0.0008
1,2-Dibromo-3-chloropropane	1.86E+00	(1)	5.07E+00	(4)	5.07E-04	(7)	5.07E-04	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
1,2-Dibromoethane (EDB)	5.88E-01	(1)	1.60E+01	(4)	7.10E-03	(7)	7.10E-03	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
1,2-Dichlorobenzene	2.31E+03	(1)	2.71E+03	(4)	1.29E+02	(7)	1.29E+02	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
1,2-Dichloroethane (EDC)	7.89E+00	(1)	5.87E+01	(4)	1.64E-01	(7)	1.64E-01	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
1,2-Dichloropropane	1.52E+01	(1)	2.50E+01	(4)	4.94E-01	(7)	4.94E-01	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.00E+04	(5)	5.53E+01	(8)	5.53E+01	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	0.00599	<0.001	<0.0011	<0.0008
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
1,3-Dichloropropane	1.60E+03	(2)	2.00E+04	(5)	4.56E+01	(8)	4.56E+01	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
1,4-Dichlorobenzene	3.17E+01	(1)	8.31E+02	(4)	1.47E+00	(7)	1.47E+00	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
1-Methylnaphthalene	1.60E+02	(3)	5.30E+02	(6)	2.35E+00	(8)	2.35E+00	-	mg/Kg	<0.0036	<0.0038	<0.003	<0.0042	<0.0038	<0.0035	<0.0034	<0.0032	<0.0029	<0.0029	<0.0044	0.0456	<0.0042	<0.0042	<0.0032
2,2-Dichloropropane	-	-	-	-	-	-	-	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
2-Butanone (MEK)	3.71E+04	(1)	8.43E+04	(4)	5.87E+02	(7)	5.87E+02	-	mg/Kg	<0.009	<0.0094	<0.0075	<0.0104	<0.0094	<0.0088	0.00903	0.00862	0.00925	<0.0074	0.02	0.0179	<0.0104	<0.0106	<0.0079
2-Chlorotoluene	1.56E+03	(1)	6.19E+03	(4)	2.57E+02	(7)	2.57E+02	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
2-Hexanone	9.38E+02	(1)	9.73E+02	(4)	3.53E+03	(7)	9.38E+02	-	mg/Kg	<0.009	<0.0094	<0.0075	<0.0104	<0.0094	<0.0088	<0.0086	<0.0079	<0.0073	<0.0074	<0.0109	<0.0145	<0.0104	<0.0106	<0.0079
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	6.45E+01	(8)	6.45E+01	-	mg/Kg	<0.0036	<0.0038	<0.003	<0.0042	<0.0038	<0.0035	<0.0034	<0.0032	<0.0029	<0.0029	<0.0044	0.0659	<0.0042	<0.0042	<0.0032
4-Chlorotoluene	1.60E+03	(2)	2.00E+04	(5)	8.30E+01	(8)	8.30E+01	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
4-Isopropyltoluene	-	-	-	-	-	-	-	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
4-Methyl-2-pentanone	5.30E+03	(2)	5.30E+04	(5)	1.06E+02	(8)	1.06E+02	-	mg/Kg	<0.009	<0.0094	<0.0075	<0.0104	<0.0094	<0.0088	<0.0086	<0.0079	<0.0073	<0.0074	<0.0109	<0.0145	<0.0104	<0.0106	<0.0079
Acetone	6.66E+04	(1)	2.21E+05	(4)	1.78E+03	(7)	1.78E+03	-	mg/Kg	0.119	0.0217	0.0242	0.0144	0.0637	0.0242	0.0502	0.095	0.0549	0.0361	0.0834	0.0758	0.0327	0.0739	0.0398
Benzene	1.54E+01	(1)	1.38E+02	(4)	7.96E-01	(7)	7.96E-01	-	mg/Kg	0.00151	0.00791	0.00321	0.00183	0.00183	0.00192	0.00193	0.000878	0.00215	0.00208	<0.0011	0.00396	0.00152	0.0013	<0.0008
Bromobenzene	3.00E+02	(2)	1.80E+03	(5)	1.66E+01	(8)	1.66E+01	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008

Table 7
Aeration Basin Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	Units	SWMU 1-20 (1.5-2')	SWMU 1-20 (10-12')	SWMU 1-20 (4-6')	SWMU 1-21 (0-0.5')	SWMU 1-22 (0-0.5')	SWMU 1-22 (1.5-2')	SWMU 1-23 (0-0.5')	SWMU 1-24 (0-0.5')	SWMU 1-24 (1.5-2')	SWMU 1-24 (10.5-11.5')	SWMU 1-24 (16-18')	SWMU 1-24 (24-26')	SWMU 1-24 (32-34')	SWMU 1-25 (0.5-1')	SWMU 1-25 (0-0.5')
										1210692-003	1210692-005	1210692-004	1210858-004	1210858-006	1210858-007	1210859-001	1210521-001	1210521-003	1210521-004	1210521-005	1210521-006	1210521-007	1210859-004	1210859-003
										10/11/2012	10/11/2012	10/11/2012	10/16/2012	10/16/2012	10/16/2012	10/16/2012	10/8/2012	10/8/2012	10/8/2012	10/8/2012	10/8/2012	10/8/2012	10/16/2012	10/16/2012
Bromodichloromethane	5.41E+00	(1)	1.43E+02	(4)	1.25E-01	(7)	1.25E-01	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
Bromoform	6.16E+02	(1)	4.76E+03	(4)	2.78E+02	(7)	2.78E+02	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
Bromomethane	1.65E+01	(1)	1.64E+01	(4)	8.86E-01	(7)	8.86E-01	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
Carbon disulfide	1.53E+03	(1)	1.58E+03	(4)	1.30E+02	(7)	1.30E+02	-	mg/Kg	<0.009	<0.0094	<0.0075	<0.0104	<0.0094	<0.0088	0.0156	<0.0079	<0.0073	<0.0074	<0.0109	<0.0145	<0.0104	<0.0106	<0.0079
Carbon tetrachloride	1.08E+01	(1)	2.26E+02	(4)	7.39E-01	(7)	7.39E-01	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
Chlorobenzene	3.76E+02	(1)	4.06E+02	(4)	2.27E+01	(7)	2.27E+01	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
Chloroethane	2.98E+04	(1)	2.61E+04	(4)	2.48E+03	(7)	2.48E+03	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
Chloroform	5.86E+00	(1)	1.54E+02	(4)	2.12E-01	(7)	2.12E-01	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
Chloromethane	2.75E+02	(1)	2.41E+02	(4)	2.03E+01	(7)	2.03E+01	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
cis-1,2-DCE	1.56E+02	(1)	6.19E+02	(4)	8.47E+00	(7)	8.47E+00	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
cis-1,3-Dichloropropene	3.37E+01	(1)	2.09E+02	(4)	5.71E-01	(7)	5.71E-01	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
Dibromochloromethane	1.21E+01	(1)	3.32E+02	(4)	1.52E-01	(7)	1.52E-01	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
Dibromomethane	5.16E+01	(1)	3.10E+03	(4)	7.89E-01	(7)	7.89E-01	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
Dichlorodifluoromethane	1.68E+02	(1)	1.49E+02	(4)	1.71E+02	(7)	1.49E+02	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
Ethylbenzene	6.84E+01	(1)	1.83E+03	(4)	5.98E+00	(7)	5.98E+00	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	0.00733	<0.001	0.00115	<0.0008
Hexachlorobutadiene	6.11E+01	(1)	2.38E+02	(4)	5.91E+00	(7)	5.91E+00	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
Isopropylbenzene	2.43E+03	(1)	2.81E+03	(4)	3.99E+02	(7)	3.99E+02	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	0.00161	<0.001	<0.0011	<0.0008
Methyl tert-butyl ether (MTBE)	9.01E+02	(1)	2.49E+04	(4)	1.11E+01	(7)	1.11E+01	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	0.00571	0.00166	<0.0011	<0.0008
Methylene chloride	4.09E+02	(1)	1.12E+03	(4)	1.90E+01	(7)	1.90E+01	-	mg/Kg	<0.0027	<0.0028	<0.0022	<0.0031	<0.0028	<0.0026	<0.0026	<0.0024	<0.0022	<0.0022	<0.0033	<0.0044	<0.0031	<0.0032	<0.0024
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	1.64E+00	(7)	1.64E+00	-	mg/Kg	<0.0018	<0.0019	<0.0015	<0.0021	<0.0019	<0.0018	<0.0017	<0.0016	<0.0015	<0.0015	<0.0022	0.0727	<0.0021	<0.0021	<0.0016
n-Butylbenzene	3.90E+03	(2)	5.10E+04	(5)	1.15E+03	(8)	1.15E+03	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
n-Propylbenzene	3.40E+03	(2)	2.10E+04	(5)	4.56E+02	(8)	4.56E+02	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	0.00318	<0.001	<0.0011	<0.0008
sec-Butylbenzene	-	-	-	-	-	-	-	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
Styrene	7.28E+03	(1)	9.99E+03	(4)	6.40E+02	(7)	6.40E+02	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
tert-Butylbenzene	-	-	-	-	-	-	-	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
Tetrachloroethene (PCE)	7.02E+00	(1)	2.12E+02	(4)	1.98E-01	(7)	1.98E-01	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
Toluene	5.27E+03	(1)	1.34E+04	(4)	5.84E+02	(7)	5.84E+02	-	mg/Kg	0.00105	0.00372	0.00205	0.00147	0.00156	0.00129	0.00211	0.0023	0.00201	0.00112	<0.0011	0.00493	0.00137	0.00428	0.00202
trans-1,2-DCE	2.70E+02	(1)	2.73E+02	(4)	1.24E+01	(7)	1.24E+01	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
Trichloroethene (TCE)	8.77E+00	(1)	7.68E+00	(4)	4.85E-01	(7)	4.85E-01	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
Trichlorofluoromethane	1.41E+03	(1)	1.30E+03	(4)	4.10E+02	(7)	4.10E+02	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
Vinyl chloride	7.28E-01	(1)	1.49E+02	(4)	2.50E-02	(7)	2.50E-02	-	mg/Kg	<0.0009	<0.0009	<0.0007	<0.001	<0.0009	<0.0009	<0.0009	<0.0008	<0.0007	<0.0007	<0.0011	<0.0015	<0.001	<0.0011	<0.0008
Xylenes, Total	8.14E+02	(1)	7.43E+02	(4)	7.21E+01	(7)	7.21E+01	-	mg/Kg	<0.0018	<0.0019	<0.0015	<0.0021	<0.0019	<0.0018	0.0018	0.00328	<0.0015	<0.0015	<0.0022	0.0289	<0.0021	0.00404	0.00162
Semi Volatile Organics - (EPA Method 8270) mg/kg																								
1,2,4-Trichlorobenzene	7.30E+01	(1)	6.87E+01	(4)	4.21E+00	(7)	4.21E+00	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
1,2-Dichlorobenzene	2.31E+03	(1)	2.71E+03	(4)	1.29E+02	(7)	1.29E+02	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
1,4-Dichlorobenzene	3.17E+01	(1)	8.31E+02	(4)	1.47E+00	(7)	1.47E+00	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
1-Methylnaphthalene	1.60E+02	(3)	5.30E+02	(6)	2.35E+00	(8)	2.35E+00	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
2,4,5-Trichlorophenol	6.11E+03	(1)	2.38E+04	(4)	4.78E+03	(7)	4.78E+03	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
2,4,6-Trichlorophenol	6.11E+01	(1)	2.38E+02	(4)	4.78E+01	(7)	4.78E+01	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
2,4-Dichlorophenol	1.83E+02	(1)	7.15E+02	(4)	4.60E+01	(7)	4.60E+01	-	mg/Kg	<0.3999	<0.4003	<0.4015	<0.398	<0.804	<0.3989	<0.8035	<1.9815	<0.3999	<0.3997	<0.4003	<0.3976	<0.404	<1.9848	<2.008
2,4-Dimethylphenol	1.22E+03	(1)	4.76E+03	(4)	3.07E+02	(7)	3.07E+02	-	mg/Kg	<0.2999	<0.3002	<0.3011	<0.2985	<0.603	<0.2992	<0.6026	<1.4861	<0.2999	<0.2998	<0.3002	<0.2982	<0.303	<1.4886	<1.506
2,4-Dinitrophenol	1.22E+02	(1)	4.76E+02	(4)	2.91E+01	(7)	2.91E+01	-	mg/Kg	<0.3999	<0.4003	<0.4015	<0.398	<0.804	<0.3989	<0.8035	<1.9815	<0.3999	<0.3997	<0.4003	<0.3976	<0.404	<1.9848	<2.008
2,4-Dinitrotoluene	1.57E+01	(1)	4.76E+02	(4)	1.04E+00	(7)	1.04E+00	-	mg/Kg	<0.4998	<0.5003	<0.5018	<0.4975	<1.005	<0.4987	<1.0044	<2.4769	<0.4998	<0.4997	<0.5003	<0.497	<0.5051	<2.481	<2.51
2,6-Dinitrotoluene	6.11E+01	(1)	2.38E+02	(4)	1.77E+01	(7)	1.77E+01	-	mg/Kg	<0.4998	<0.5003	<0.5018	<0.4975	<1.005	<0.4987	<1.0044	<2.4769	<0.4998	<0.4997	<0.5003	<0.497	<0.5051	<2.481	<2.51
2-Chloronaphthalene	6.11E+01	(1)	2.94E+02	(4)	4.01E-01	(7)	4.01E-01	-	mg/Kg	<0.2499	<0.2502	<0.2509	<0.2488	<0.5025	<0.2493	<0.5022	<1.2384	<0.2499	<0.2498	<0.2502	<0.2485	<0.2525	<1.2405	<1.255
2-Chlorophenol	3.91E+02	(1)	1.55E+03	(4)	5.33E+01	(7)	5.33E+01	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	6.45E+01	(8)	6.45E+01	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
2-Methylphenol	3.10E+03	(2)	3.10E+04	(5)	2.67E+02	(8)	2.67E+02	-	mg/Kg	<0.4998	<0.5003	<0.5018	<0.4975	<1.005	<0.4987	<1.0044	<2.4769	<0.4998	<0.4997	<0.5003	<0.497	<0.5051	<2.481	<2.51
2-Nitroaniline	6.10E+02	(2)	6.00E+03	(5)	2.86E+01	(8)	2.86E+01	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
2-Nitrophenol	-	-	-	-	-	-	-	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004

Table 7
Aeration Basin Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	Units	SWMU 1-20 (1.5-2')	SWMU 1-20 (10-12')	SWMU 1-20 (4-6')	SWMU 1-21 (0-0.5')	SWMU 1-22 (0-0.5')	SWMU 1-22 (1.5-2')	SWMU 1-23 (0-0.5')	SWMU 1-24 (0-0.5')	SWMU 1-24 (1.5-2')	SWMU 1-24 (10.5-11.5')	SWMU 1-24 (16-18')	SWMU 1-24 (24-26')	SWMU 1-24 (32-34')	SWMU 1-25 (0.5-1')	SWMU 1-25 (0-0.5')
										1210692-003	1210692-005	1210692-004	1210858-004	1210858-006	1210858-007	1210859-001	1210521-001	1210521-003	1210521-004	1210521-005	1210521-006	1210521-007	1210859-004	1210859-003
										10/11/2012	10/11/2012	10/11/2012	10/16/2012	10/16/2012	10/16/2012	10/16/2012	10/8/2012	10/8/2012	10/8/2012	10/8/2012	10/8/2012	10/8/2012	10/16/2012	10/16/2012
3,3'-Dichlorobenzidine	1.08E+01	(1)	3.64E+02	(4)	3.41E+00	(7)	3.41E+00	-	mg/Kg	<0.2499	<0.2502	<0.2509	<0.2488	<0.5025	<0.2493	<0.5022	<1.2384	<0.2499	<0.2498	<0.2502	<0.2485	<0.2525	<1.2405	<1.255
3+4-Methylphenol	-	-	-	-	-	-	-	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
3-Nitroaniline	-	-	-	-	-	-	-	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
4,6-Dinitro-2-methylphenol	4.90E+00	(2)	4.90E+01	(5)	9.22E-01	(8)	9.22E-01	-	mg/Kg	<0.4998	<0.5003	<0.5018	<0.4975	<1.005	<0.4987	<1.0044	<2.4769	<0.4998	<0.4997	<0.5003	<0.497	<0.5051	<2.481	<2.51
4-Bromophenyl phenyl ether	-	-	-	-	-	-	-	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
4-Chloro-3-methylphenol	6.10E+03	(2)	6.20E+04	(5)	5.99E+02	(8)	5.99E+02	-	mg/Kg	<0.4998	<0.5003	<0.5018	<0.4975	<1.005	<0.4987	<1.0044	<2.4769	<0.4998	<0.4997	<0.5003	<0.497	<0.5051	<2.481	<2.51
4-Chloroaniline	2.40E+01	(3)	8.60E+01	(6)	5.99E-02	(8)	5.99E-02	-	mg/Kg	<0.4998	<0.5003	<0.5018	<0.4975	<1.005	<0.4987	<1.0044	<2.4769	<0.4998	<0.4997	<0.5003	<0.497	<0.5051	<2.481	<2.51
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	-	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
4-Nitroaniline	2.40E+02	(3)	8.60E+02	(6)	6.45E-01	(8)	6.45E-01	-	mg/Kg	<0.3999	<0.4003	<0.4015	<0.398	<0.804	<0.3989	<0.8035	<1.9815	<0.3999	<0.3997	<0.4003	<0.3976	<0.404	<1.9848	<2.008
4-Nitrophenol	-	-	-	-	-	-	-	-	mg/Kg	<0.2499	<0.2502	<0.2509	<0.2488	<0.5025	<0.2493	<0.5022	<1.2384	<0.2499	<0.2498	<0.2502	<0.2485	<0.2525	<1.2405	<1.255
Acenaphthene	3.44E+03	(1)	1.86E+04	(4)	7.79E+03	(7)	3.44E+03	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Acenaphthylene	-	-	-	-	-	-	-	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Aniline	8.50E+02	(3)	3.00E+03	(6)	1.80E+00	(8)	1.80E+00	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Anthracene	1.72E+04	(1)	6.68E+04	(4)	1.25E+05	(7)	1.72E+04	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Azobenzene	5.10E+01	(3)	2.30E+02	(6)	3.69E-01	(8)	3.69E-01	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Benz(a)anthracene	1.48E+00	(1)	2.13E+02	(4)	3.61E+01	(7)	1.48E+00	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Benzo(a)pyrene	1.48E-01	(1)	2.13E+01	(4)	1.20E+01	(7)	1.48E-01	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Benzo(b)fluoranthene	1.48E+00	(1)	2.13E+02	(4)	1.22E+02	(7)	1.48E+00	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Benzo(g,h,i)perylene	-	-	-	-	-	-	-	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Benzo(k)fluoranthene	1.48E+01	(1)	2.06E+03	(4)	1.20E+03	(7)	1.48E+01	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Benzoic acid	2.40E+05	(2)	2.50E+06	(5)	6.45E+03	(8)	6.45E+03	-	mg/Kg	<0.4998	<0.5003	<0.5018	<0.4975	<1.005	<0.4987	<1.0044	<2.4769	<0.4998	<0.4997	<0.5003	<0.497	<0.5051	<2.481	<2.51
Benzyl alcohol	6.10E+03	(2)	6.20E+04	(5)	1.71E+02	(8)	1.71E+02	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Bis(2-chloroethoxy)methane	1.80E+02	(2)	1.80E+03	(5)	5.07E+00	(8)	5.07E+00	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Bis(2-chloroethyl)ether	2.68E+00	(1)	7.78E+01	(4)	1.21E-02	(7)	1.21E-02	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Bis(2-chloroisopropyl)ether	9.15E+01	(1)	3.10E+03	(4)	1.07E+00	(7)	1.07E+00	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Bis(2-ethylhexyl)phthalate	3.47E+02	(1)	4.76E+03	(4)	3.97E+03	(7)	3.47E+02	-	mg/Kg	<0.4998	<0.5003	<0.5018	<0.4975	<1.005	<0.4987	<1.0044	<2.4769	<0.4998	<0.4997	<0.5003	<0.497	<0.5051	<2.481	<2.51
Butyl benzyl phthalate	2.60E+03	(3)	9.10E+03	(6)	9.22E+01	(8)	9.22E+01	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Carbazole	-	-	-	-	-	-	-	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Chrysene	1.48E+02	(1)	2.06E+04	(4)	3.68E+03	(7)	1.48E+02	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Dibenz(a,h)anthracene	1.48E-01	(1)	2.13E+01	(4)	3.90E+01	(7)	1.48E-01	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Dibenzofuran	7.80E+01	(2)	1.00E+03	(5)	5.07E+01	(8)	5.07E+01	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Diethyl phthalate	4.89E+04	(1)	1.91E+05	(4)	4.45E+03	(7)	4.45E+03	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(4)	3.71E+04	(7)	3.71E+04	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Di-n-butyl phthalate	6.11E+03	(1)	2.38E+04	(4)	3.21E+03	(7)	3.21E+03	-	mg/Kg	<0.4998	<0.5003	<0.5018	<0.4975	<1.005	<0.4987	<1.0044	<2.4769	<0.4998	<0.4997	<0.5003	<0.497	<0.5051	<2.481	<2.51
Di-n-octyl phthalate	-	-	-	-	-	-	-	-	mg/Kg	<0.3999	<0.4003	<0.4015	<0.398	<0.804	<0.3989	<0.8035	<1.2384	<0.2499	<0.2498	<0.2502	<0.2485	<0.2525	<1.9848	<2.008
Fluoranthene	2.29E+03	(1)	8.91E+03	(4)	5.61E+04	(7)	2.29E+03	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Fluorene	2.29E+03	(1)	8.91E+03	(4)	9.36E+03	(7)	2.29E+03	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Hexachlorobenzene	3.04E+00	(1)	1.03E+02	(4)	1.83E+00	(7)	1.83E+00	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Hexachlorobutadiene	6.11E+01	(1)	2.38E+02	(4)	5.91E+00	(7)	5.91E+00	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Hexachlorocyclopentadiene	3.67E+02	(1)	8.11E+02	(4)	2.43E+02	(7)	2.43E+02	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Hexachloroethane	4.28E+01	(1)	1.67E+02	(4)	3.77E+00	(7)	3.77E+00	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Indeno(1,2,3-cd)pyrene	1.48E+00	(1)	2.13E+02	(4)	3.98E+02	(7)	1.48E+00	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Isophorone	5.12E+03	(1)	4.75E+04	(4)	8.84E+01	(7)	8.84E+01	-	mg/Kg	<0.4998	<0.5003	<0.5018	<0.4975	<1.005	<0.4987	<1.0044	<2.4769	<0.4998	<0.4997	<0.5003	<0.497	<0.5051	<2.481	<2.51
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	1.64E+00	(7)	1.64E+00	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Nitrobenzene	5.35E+01	(1)	3.32E+02	(4)	2.88E-01	(7)	2.88E-01	-	mg/Kg	<0.4998	<0.5003	<0.5018	<0.4975	<1.005	<0.4987	<1.0044	<2.4769	<0.4998	<0.4997	<0.5003	<0.497	<0.5051	<2.481	<2.51
N-Nitrosodi-n-propylamine	6.90E-01	(3)	2.50E+00	(6)	3.23E-03	(8)	3.23E-03	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
N-Nitrosodiphenylamine	9.93E+02	(1)	3.36E+04	(4)	2.61E+02	(7)	2.61E+02	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Pentachlorophenol	8.94E+00	(1)	3.10E+02	(4)	5.90E+00	(7)	5.90E+00	-	mg/Kg	<0.3999	<0.4003	<0.4015	<0.398	<0.804	<0.3989	<0.8035	<1.9815	<0.3999	<0.3997	<0.4003	<0.3976	<0.404	<1.9848	<2.008
Phenanthrene	1.83E+03	(1)	7.15E+03	(4)	1.32E+04	(7)	1.83E+03	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Phenol	1.83E+04	(1)	6.88E+04	(4)	2.29E+03	(7)	2.29E+03	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Pyrene	1.72E+03	(1)	6.68E+03	(4)	4.12E+04	(7)	1.72E+03	-	mg/Kg	<0.1999	<0.2001	<0.2007	<0.199	<0.402	<0.1995	<0.4017	<0.9908	<0.1999	<0.1999	<0.2001	<0.1988	<0.202	<0.9924	<1.004
Pyridine	7.80E+01	(2)	1.00E+03	(5)	2.44E+00	(8)	2.44E+00	-	mg/Kg	<0.4998	<0.5003	<0.5018	<0.4975	<1.005	<0.4987	<1.0044	<2.4769	<0.4998	<0.4997	<0.5003	<0.497	<0.5051	<2.481	<2.51

Table 7
Aeration Basin Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	Units	SWMU 1-20 (1.5-2')	SWMU 1-20 (10-12')	SWMU 1-20 (4-6')	SWMU 1-21 (0-0.5')	SWMU 1-22 (0-0.5')	SWMU 1-22 (1.5-2')	SWMU 1-23 (0-0.5')	SWMU 1-24 (0-0.5')	SWMU 1-24 (1.5-2')	SWMU 1-24 (10.5-11.5')	SWMU 1-24 (16-18')	SWMU 1-24 (24-26')	SWMU 1-24 (32-34')	SWMU 1-25 (0.5-1')	SWMU 1-25 (0-0.5')
										1210692-003 10/11/2012	1210692-005 10/11/2012	1210692-004 10/11/2012	1210858-004 10/16/2012	1210858-006 10/16/2012	1210858-007 10/16/2012	1210859-001 10/16/2012	1210521-001 10/8/2012	1210521-003 10/8/2012	1210521-004 10/8/2012	1210521-005 10/8/2012	1210521-006 10/8/2012	1210521-007 10/8/2012	1210859-004 10/16/2012	1210859-003 10/16/2012
Total Petroleum Hydrocarbons - (EPA Method 8015B) mg/kg																								
Diesel Range Organics (DRO)	1.00E+03	(10)	1.00E+03	(10)	1.00E+03	(10)	-	-	mg/Kg	<10	<10	<10	<10	<10	<10	<10	14	<10	<10	<10	<10	<10	<10	<10
Gasoline Range Organics (GRO)	-	-	-	-	-	-	-	-	mg/Kg	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Motor Oil Range Organics (MRO)	3.00E+03	(11)	3.00E+03	(11)	3.00E+03	(11)	-	-	mg/Kg	<49	<50	<51	<52	<51	<49	<52	<51	<50	<49	<49	<51	<50	<50	<51

– No screening level or analytical result available

NMED - Risk Assessment Guidance for Site Investigations and Remediation (June 14, 2012)

EPA - Regional Screening Levels (May 2012)

(1) NMED Residential Screening Level

(2) EPA Residential Screening Level

(3) EPA Residential - Screening Levels (May 2012) multiplied by 10 because the constituent is listed as carcinogenic

(4) NMED Construction Worker Screening Level

(5) EPA Industrial - Screening Levels (May 2012)

(6) EPA Industrial - Screening Levels (May 2012) multiplied by 10 pursuant to Provision VII.B. of the July 7, 2007 NMED Order because the constituent is listed as carcinogenic

(7) SoilGW NMED Dilution Attenuation Factor (DAF) = 461

(8) SoilGW Risk-based EPA DAF = 461

(9) SoilGW MCL-based EPA DAF = 461

(10) NMED Table 6-2 TPH Screening Guidelines for Potable Groundwater "uknown oil" with DAF = 1.0 - see report Section 5 for use of screening levels

(11) NMED Table 6-2 TPH Screening Guidelines for Potable Groundwater "waste oil" with DAF = 1.0 - see report Section 5 for use of screening levels

(12) Background concentrations to be determined

Bold represents value above Residential Screening Level
yellow highlight represents value above Leachate (DAF) Screening Level
Bold with yellow - value exceeds Residential Screening Level and DAF

Table 7
Aeration Basin Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	Units	SWMU 1-26 (0-0.5')	SWMU 1-27 (0-0.5')	SWMU 1-27 (1.5-2')	SWMU 1-28 (0-0.5')	SWMU 1-28 (1.5-2')	SWMU 1-29 (0-0.5')	SWMU 1-30 (0-0.5')	SWMU 1-30 (1.5-2')	SWMU 1-30 (4-6')	SWMU 1-31 (0-0.5')	SWMU 1-32 (0-0.5')	SWMU 1-33 (0-0.5')	SWMU 1-34 (0-0.5')	SWMU 1-35 (0-0.5')	SWMU 1-35 (1.5-2')
										1210859-005 10/16/2012	1210692-009 10/12/2012	1210692-010 10/12/2012	1210692-011 10/12/2012	1210692-012 10/12/2012	1210859-006 10/16/2012	1210692-014 10/12/2012	1210692-015 10/12/2012	1210692-016 10/12/2012	1210856-001 10/16/2012	1210856-002 10/16/2012	1210856-004 10/16/2012	1210856-005 10/16/2012	1210692-017 10/12/2012	1210692-018 10/12/2012
Metals (mg/kg)																								
Antimony	3.13E+01	(1)	1.24E+02	(4)	3.05E+02	(7)	3.13E+01	-	mg/Kg	<5	<5	<12.5004	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Arsenic	3.90E+00	(1)	5.30E+01	(4)	6.05E+00	(7)	3.90E+00	-	mg/Kg	<5	<5	<12.5004	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Barium	1.56E+04	(1)	4.35E+03	(4)	1.39E+05	(7)	4.35E+03	-	mg/Kg	390	560	750	490	570	550	580	610	870	350	600	680	740	610	1200
Beryllium	1.56E+02	(1)	1.44E+02	(4)	2.66E+04	(7)	1.44E+02	-	mg/Kg	0.62	0.6	<0.75	0.7	0.41	0.69	0.69	0.67	0.47	0.56	0.64	0.64	0.52	0.67	0.46
Cadmium	7.03E+01	(1)	2.77E+02	(4)	6.33E+02	(7)	7.03E+01	-	mg/Kg	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium III	1.17E+05	(1)	4.65E+05	(4)	4.54E+10	(7)	1.17E+05	-	mg/Kg	7.9	8	8	10	5.2	17	13	12	7.5	12	17	12	12	14	11
Chromium VI	2.97E+00	(1)	6.56E+01	(4)	3.83E+00	(7)	2.97E+00	-	mg/Kg	7.9	8	8	10	5.2	17	13	12	7.5	12	17	12	12	14	11
Cobalt	2.30E+01	(2)	3.00E+02	(5)	9.68E+01	(8)	2.30E+01	-	mg/Kg	3.7	2.9	4.3	3.7	2.7	5.1	4	3.8	3.1	3.8	4	3.2	2.7	3.9	3.4
Cyanide	4.69E+01	(1)	1.86E+02	(4)	1.02E+02	(7)	4.69E+01	-	mg/Kg	<0.246	0.28	<0.26	1.4	<0.267	6	0.63	<0.274	<0.282	0.26	<0.247	<0.243	<0.251	0.28	0.29
Iron	5.48E+04	(1)	2.17E+05	(4)	2.98E+05	(7)	5.48E+04	-	mg/Kg	11000	11000	11000	13000	8800	15000	14000	14000	12000	13000	14000	13000	9800	13000	10000
Lead	4.00E+02	(1)	8.00E+02	(4)	6.45E+03	(8)	4.00E+02	-	mg/Kg	2.7	1.4	2.7	2.6	1.4	7	3.7	3.1	3.3	5.2	6.3	3.7	2.5	2.6	2.3
Manganese	1.86E+03	(1)	4.40E+02	(4)	2.64E+04	(7)	4.40E+02	-	mg/Kg	670	470	1300	520	430	620	550	530	840	420	440	800	520	500	820
Mercury	1.56E+01	(1)	1.36E+01	(4)	1.51E+01	(7)	1.36E+01	-	mg/Kg	0.051	0.054	<0.033	0.67	<0.033	0.22	0.13	0.14	<0.033	0.063	0.13	0.055	0.14	0.083	0.056
Nickel	1.56E+03	(1)	6.19E+03	(4)	2.20E+04	(7)	1.56E+03	-	mg/Kg	6.1	5.8	6	7.1	3.7	9.3	7.3	6.9	4.7	8	13	8.9	7.5	10	9
Selenium	3.91E+02	(1)	1.55E+03	(4)	4.45E+02	(7)	3.91E+02	-	mg/Kg	<5	<5	<12.5004	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Silver	3.91E+02	(1)	1.55E+03	(4)	7.22E+02	(7)	3.91E+02	-	mg/Kg	<0.5	<0.5	<1.25	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.25	<0.25	<0.25	<0.5	<0.5
Vanadium	3.91E+02	(1)	1.55E+03	(4)	8.42E+04	(7)	3.91E+02	-	mg/Kg	14	17	20	18	12	19	21	17	16	19	22	19	18	26	19
Zinc	2.35E+04	(1)	9.29E+04	(4)	3.14E+05	(7)	2.35E+04	-	mg/Kg	16	15	13	19	8.8	48	26	19	10	30	36	23	28	23	22
Volatile Organic Compounds - (EPA Method 8260) mg/kg																								
1,1,1,2-Tetrachloroethane	2.91E+01	(1)	7.79E+02	(4)	7.59E-01	(7)	7.59E-01	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
1,1,1-Trichloroethane	1.56E+04	(1)	1.48E+04	(4)	1.34E+03	(7)	1.34E+03	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
1,1,2,2-Tetrachloroethane	8.02E+00	(1)	2.21E+02	(4)	9.82E-02	(7)	9.82E-02	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
1,1,2-Trichloroethane	2.81E+00	(1)	4.72E+02	(4)	5.14E-02	(7)	5.14E-02	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
1,1-Dichloroethane	6.45E+01	(1)	1.70E+03	(4)	2.75E+00	(7)	2.75E+00	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
1,1-Dichloroethene	4.49E+02	(1)	4.32E+02	(4)	5.36E+01	(7)	5.36E+01	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
1,1-Dichloropropene	-	-	-	-	-	-	-	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
1,2,3-Trichlorobenzene	4.90E+01	(2)	4.90E+02	(5)	6.92E+00	(8)	6.92E+00	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
1,2,3-Trichloropropane	4.97E-02	(1)	7.23E+00	(4)	1.15E-03	(7)	1.15E-03	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
1,2,4-Trichlorobenzene	7.30E+01	(1)	6.87E+01	(4)	4.21E+00	(7)	4.21E+00	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
1,2,4-Trimethylbenzene	6.20E+01	(2)	2.60E+02	(5)	9.68E+00	(8)	9.68E+00	-	mg/Kg	0.00207	0.00844	<0.0008	0.00209	<1.0132	0.00116	0.00268	<0.0007	<0.0007	0.00138	0.00179	0.00116	0.00524	0.00341	0.00197
1,2-Dibromo-3-chloropropane	1.86E+00	(1)	5.07E+00	(4)	5.07E-04	(7)	5.07E-04	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
1,2-Dibromoethane (EDB)	5.88E-01	(1)	1.60E+01	(4)	7.10E-03	(7)	7.10E-03	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
1,2-Dichlorobenzene	2.31E+03	(1)	2.71E+03	(4)	1.29E+02	(7)	1.29E+02	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
1,2-Dichloroethane (EDC)	7.89E+00	(1)	5.87E+01	(4)	1.64E-01	(7)	1.64E-01	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
1,2-Dichloropropane	1.52E+01	(1)	2.50E+01	(4)	4.94E-01	(7)	4.94E-01	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.00E+04	(5)	5.53E+01	(8)	5.53E+01	-	mg/Kg	0.000828	0.00334	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	0.00196	0.00139	0.000762
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
1,3-Dichloropropane	1.60E+03	(2)	2.00E+04	(5)	4.56E+01	(8)	4.56E+01	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
1,4-Dichlorobenzene	3.17E+01	(1)	8.31E+02	(4)	1.47E+00	(7)	1.47E+00	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
1-Methylnaphthalene	1.60E+02	(3)	5.30E+02	(6)	2.35E+00	(8)	2.35E+00	-	mg/Kg	<0.0029	<0.0037	<0.003	<0.004	<4.0529	<0.0033	<0.004	<0.0028	<0.0027	<0.0034	<0.0033	<0.0036	<0.0042	<0.0036	<0.0027
2,2-Dichloropropane	-	-	-	-	-	-	-	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
2-Butanone (MEK)	3.71E+04	(1)	8.43E+04	(4)	5.87E+02	(7)	5.87E+02	-	mg/Kg	<0.0073	0.0722	<0.0075	0.0161	<10.1322	<0.0082	0.0213	<0.007	<0.0069	<0.0084	<0.0083	<0.009	<0.0106	<0.009	<0.0068
2-Chlorotoluene	1.56E+03	(1)	6.19E+03	(4)	2.57E+02	(7)	2.57E+02	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
2-Hexanone	9.38E+02	(1)	9.73E+02	(4)	3.53E+03	(7)	9.38E+02	-	mg/Kg	<0.0073	<0.0094	<0.0075	<0.0101	<10.1322	<0.0082	<0.0101	<0.007	<0.0069	<0.0084	<0.0083	<0.009	<0.0106	<0.009	<0.0068
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	6.45E+01	(8)	6.45E+01	-	mg/Kg	<0.0029	<0.0037	<0.003	<0.004	<4.0529	<0.0033	<0.004	<0.0028	<0.0027	<0.0034	<0.0033	<0.0036	<0.0042	<0.0036	<0.0027
4-Chlorotoluene	1.60E+03	(2)	2.00E+04	(5)	8.30E+01	(8)	8.30E+01	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
4-Isopropyltoluene	-	-	-	-	-	-	-	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
4-Methyl-2-pentanone	5.30E+03	(2)	5.30E+04	(5)	1.06E+02	(8)	1.06E+02	-	mg/Kg	<0.0073	<0.0094	<0.0075	<0.0101	<10.1322	<0.0082	<0.0101	<0.007	<0.0069	<0.0084	<0.0083	<0.009	<0.0106	<0.009	<0.0068
Acetone	6.66E+04	(1)	2.21E+05	(4)	1.78E+03	(7)	1.78E+03	-	mg/Kg	0.0644	2.44	0.169	0.135	54.1	0.0641	0.692	0.0541	0.0215	0.0344	0.0551	0.0526	0.0654	0.0608	0.0525
Benzene	1.54E+01	(1)	1.38E+02	(4)	7.96E-01	(7)	7.96E-01	-	mg/Kg	0.00185	0.00213	0.0013	0.00299	2.53	0.00236	0.0024	0.0014	0.00109	0.00119	0.0014	0.00146	0.00184	0.00226	0.00134
Bromobenzene	3.00E+02	(2)	1.80E+03	(5)	1.66E+01	(8)	1.66E+01	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007

Table 7
Aeration Basin Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	Units	SWMU 1-26 (0-0.5')	SWMU 1-27 (0-0.5')	SWMU 1-27 (1.5-2')	SWMU 1-28 (0-0.5')	SWMU 1-28 (1.5-2')	SWMU 1-29 (0-0.5')	SWMU 1-30 (0-0.5')	SWMU 1-30 (1.5-2')	SWMU 1-30 (4-6')	SWMU 1-31 (0-0.5')	SWMU 1-32 (0-0.5')	SWMU 1-33 (0-0.5')	SWMU 1-34 (0-0.5')	SWMU 1-35 (0-0.5')	SWMU 1-35 (1.5-2')
										1210859-005	1210692-009	1210692-010	1210692-011	1210692-012	1210859-006	1210692-014	1210692-015	1210692-016	1210856-001	1210856-002	1210856-004	1210856-005	1210692-017	1210692-018
										10/16/2012	10/12/2012	10/12/2012	10/12/2012	10/12/2012	10/16/2012	10/12/2012	10/12/2012	10/12/2012	10/16/2012	10/16/2012	10/16/2012	10/16/2012	10/12/2012	10/12/2012
Bromodichloromethane	5.41E+00	(1)	1.43E+02	(4)	1.25E-01	(7)	1.25E-01	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
Bromoform	6.16E+02	(1)	4.76E+03	(4)	2.78E+02	(7)	2.78E+02	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
Bromomethane	1.65E+01	(1)	1.64E+01	(4)	8.86E-01	(7)	8.86E-01	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
Carbon disulfide	1.53E+03	(1)	1.58E+03	(4)	1.30E+02	(7)	1.30E+02	-	mg/Kg	<0.0073	<0.0094	<0.0075	<0.0101	<10.1322	<0.0082	<0.0101	<0.007	<0.0069	<0.0084	<0.0083	<0.009	<0.0106	<0.009	<0.0068
Carbon tetrachloride	1.08E+01	(1)	2.26E+02	(4)	7.39E-01	(7)	7.39E-01	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
Chlorobenzene	3.76E+02	(1)	4.06E+02	(4)	2.27E+01	(7)	2.27E+01	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
Chloroethane	2.98E+04	(1)	2.61E+04	(4)	2.48E+03	(7)	2.48E+03	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
Chloroform	5.86E+00	(1)	1.54E+02	(4)	2.12E-01	(7)	2.12E-01	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
Chloromethane	2.75E+02	(1)	2.41E+02	(4)	2.03E+01	(7)	2.03E+01	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
cis-1,2-DCE	1.56E+02	(1)	6.19E+02	(4)	8.47E+00	(7)	8.47E+00	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
cis-1,3-Dichloropropene	3.37E+01	(1)	2.09E+02	(4)	5.71E-01	(7)	5.71E-01	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
Dibromochloromethane	1.21E+01	(1)	3.32E+02	(4)	1.52E-01	(7)	1.52E-01	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
Dibromomethane	5.16E+01	(1)	3.10E+03	(4)	7.89E-01	(7)	7.89E-01	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
Dichlorodifluoromethane	1.68E+02	(1)	1.49E+02	(4)	1.71E+02	(7)	1.49E+02	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
Ethylbenzene	6.84E+01	(1)	1.83E+03	(4)	5.98E+00	(7)	5.98E+00	-	mg/Kg	0.00121	0.0636	0.00135	0.0018	<1.0132	<0.0008	0.00644	<0.0007	<0.0007	<0.0008	0.00107	0.00103	0.00259	0.00199	0.00141
Hexachlorobutadiene	6.11E+01	(1)	2.38E+02	(4)	5.91E+00	(7)	5.91E+00	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
Isopropylbenzene	2.43E+03	(1)	2.81E+03	(4)	3.99E+02	(7)	3.99E+02	-	mg/Kg	<0.0007	0.0031	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
Methyl tert-butyl ether (MTBE)	9.01E+02	(1)	2.49E+04	(4)	1.11E+01	(7)	1.11E+01	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
Methylene chloride	4.09E+02	(1)	1.12E+03	(4)	1.90E+01	(7)	1.90E+01	-	mg/Kg	<0.0022	<0.0028	<0.0023	<0.003	<3.0397	<0.0025	<0.003	<0.0021	<0.0021	<0.0025	<0.0025	<0.0027	<0.0032	<0.0027	<0.002
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	1.64E+00	(7)	1.64E+00	-	mg/Kg	<0.0015	<0.0019	<0.0015	<0.002	<2.0264	<0.0016	<0.002	<0.0014	<0.0014	<0.0017	<0.0017	<0.0018	<0.0021	<0.0018	<0.0014
n-Butylbenzene	3.90E+03	(2)	5.10E+04	(5)	1.15E+03	(8)	1.15E+03	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
n-Propylbenzene	3.40E+03	(2)	2.10E+04	(5)	4.56E+02	(8)	4.56E+02	-	mg/Kg	<0.0007	0.00173	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
sec-Butylbenzene	-	-	-	-	-	-	-	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
Styrene	7.28E+03	(1)	9.99E+03	(4)	6.40E+02	(7)	6.40E+02	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
tert-Butylbenzene	-	-	-	-	-	-	-	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
Tetrachloroethene (PCE)	7.02E+00	(1)	2.12E+02	(4)	1.98E-01	(7)	1.98E-01	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
Toluene	5.27E+03	(1)	1.34E+04	(4)	5.84E+02	(7)	5.84E+02	-	mg/Kg	0.00369	0.0114	0.0024	0.00473	3.54	0.00327	0.00603	0.00263	0.00187	0.00295	0.00442	0.00437	0.00869	0.00888	0.00572
trans-1,2-DCE	2.70E+02	(1)	2.73E+02	(4)	1.24E+01	(7)	1.24E+01	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
Trichloroethene (TCE)	8.77E+00	(1)	7.68E+00	(4)	4.85E-01	(7)	4.85E-01	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
Trichlorofluoromethane	1.41E+03	(1)	1.30E+03	(4)	4.10E+02	(7)	4.10E+02	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
Vinyl chloride	7.28E-01	(1)	1.49E+02	(4)	2.50E-02	(7)	2.50E-02	-	mg/Kg	<0.0007	<0.0009	<0.0008	<0.001	<1.0132	<0.0008	<0.001	<0.0007	<0.0007	<0.0008	<0.0008	<0.0009	<0.0011	<0.0009	<0.0007
Xylenes, Total	8.14E+02	(1)	7.43E+02	(4)	7.21E+01	(7)	7.21E+01	-	mg/Kg	0.00503	0.447	0.00781	0.0091	2.38	0.00307	0.0493	0.00149	<0.0014	0.0032	0.00394	0.00362	0.00953	0.00906	0.00512
Semi Volatile Organics - (EPA Method 8270) mg/kg																								
1,2,4-Trichlorobenzene	7.30E+01	(1)	6.87E+01	(4)	4.21E+00	(7)	4.21E+00	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
1,2-Dichlorobenzene	2.31E+03	(1)	2.71E+03	(4)	1.29E+02	(7)	1.29E+02	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
1,4-Dichlorobenzene	3.17E+01	(1)	8.31E+02	(4)	1.47E+00	(7)	1.47E+00	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
1-Methylnaphthalene	1.60E+02	(3)	5.30E+02	(6)	2.35E+00	(8)	2.35E+00	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
2,4,5-Trichlorophenol	6.11E+03	(1)	2.38E+04	(4)	4.78E+03	(7)	4.78E+03	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
2,4,6-Trichlorophenol	6.11E+01	(1)	2.38E+02	(4)	4.78E+01	(7)	4.78E+01	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
2,4-Dichlorophenol	1.83E+02	(1)	7.15E+02	(4)	4.60E+01	(7)	4.60E+01	-	mg/Kg	<0.7937	<0.804	<0.4034	<0.8019	<0.4012	<1.5947	<0.8	<1.9789	<0.4049	<4.0067	<4.0094	<3.9947	<2.0013	<4	<2.0107
2,4-Dimethylphenol	1.22E+03	(1)	4.76E+03	(4)	3.07E+02	(7)	3.07E+02	-	mg/Kg	<0.5952	<0.603	<0.3025	<0.6014	<0.3009	<1.196	<0.6	<1.4842	<0.3036	<3.005	<3.007	<2.996	<1.501	<3	<1.508
2,4-Dinitrophenol	1.22E+02	(1)	4.76E+02	(4)	2.91E+01	(7)	2.91E+01	-	mg/Kg	<0.7937	<0.804	<0.4034	<0.8019	<0.4012	<1.5947	<0.8	<1.9789	<0.4049	<4.0067	<4.0094	<3.9947	<2.0013	<4	<2.0107
2,4-Dinitrotoluene	1.57E+01	(1)	4.76E+02	(4)	1.04E+00	(7)	1.04E+00	-	mg/Kg	<0.9921	<1.005	<0.5042	<1.0023	<0.5015	<1.9934	<1	<2.4736	<0.5061	<5.0083	<5.0117	<4.9933	<2.5017	<5	<2.5134
2,6-Dinitrotoluene	6.11E+01	(1)	2.38E+02	(4)	1.77E+01	(7)	1.77E+01	-	mg/Kg	<0.9921	<1.005	<0.5042	<1.0023	<0.5015	<1.9934	<1	<2.4736	<0.5061	<5.0083	<5.0117	<4.9933	<2.5017	<5	<2.5134
2-Chloronaphthalene	6.11E+01	(1)	2.94E+02	(4)	4.01E-01	(7)	4.01E-01	-	mg/Kg	<0.496	<0.5025	<0.2521	<0.5012	<0.2508	<0.9967	<0.5	<1.2368	<0.253	<2.5042	<2.5058	<2.4967	<1.2508	<2.5	<1.2567
2-Chlorophenol	3.91E+02	(1)	1.55E+03	(4)	5.33E+01	(7)	5.33E+01	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	6.45E+01	(8)	6.45E+01	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
2-Methylphenol	3.10E+03	(2)	3.10E+04	(5)	2.67E+02	(8)	2.67E+02	-	mg/Kg	<0.9921	<1.005	<0.5042	<1.0023	<0.5015	<1.9934	<1	<2.4736	<0.5061	<5.0083	<5.0117	<4.9933	<2.5017	<5	<2.5134
2-Nitroaniline	6.10E+02	(2)	6.00E+03	(5)	2.86E+01	(8)	2.86E+01	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
2-Nitrophenol	-	-	-	-	-	-	-	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054

Table 7
Aeration Basin Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	Units	SWMU 1-26 (0-0.5')	SWMU 1-27 (0-0.5')	SWMU 1-27 (1.5-2')	SWMU 1-28 (0-0.5')	SWMU 1-28 (1.5-2')	SWMU 1-29 (0-0.5')	SWMU 1-30 (0-0.5')	SWMU 1-30 (1.5-2')	SWMU 1-30 (4-6')	SWMU 1-31 (0-0.5')	SWMU 1-32 (0-0.5')	SWMU 1-33 (0-0.5')	SWMU 1-34 (0-0.5')	SWMU 1-35 (0-0.5')	SWMU 1-35 (1.5-2')
										1210859-005	1210692-009	1210692-010	1210692-011	1210692-012	1210859-006	1210692-014	1210692-015	1210692-016	1210856-001	1210856-002	1210856-004	1210856-005	1210692-017	1210692-018
										10/16/2012	10/12/2012	10/12/2012	10/12/2012	10/12/2012	10/16/2012	10/12/2012	10/12/2012	10/12/2012	10/16/2012	10/16/2012	10/16/2012	10/16/2012	10/12/2012	10/12/2012
3,3'-Dichlorobenzidine	1.08E+01	(1)	3.64E+02	(4)	3.41E+00	(7)	3.41E+00	-	mg/Kg	<0.496	<0.5025	<0.2521	<0.5012	<0.2508	<0.9967	<0.5	<1.2368	<0.253	<2.5042	<2.5058	<2.4967	<1.2508	<2.5	<1.2567
3+4-Methylphenol	-	-	-	-	-	-	-	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
3-Nitroaniline	-	-	-	-	-	-	-	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
4,6-Dinitro-2-methylphenol	4.90E+00	(2)	4.90E+01	(5)	9.22E-01	(8)	9.22E-01	-	mg/Kg	<0.9921	<1.005	<0.5042	<1.0023	<0.5015	<1.9934	<1	<2.4736	<0.5061	<5.0083	<5.0117	<4.9933	<2.5017	<5	<2.5134
4-Bromophenyl phenyl ether	-	-	-	-	-	-	-	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
4-Chloro-3-methylphenol	6.10E+03	(2)	6.20E+04	(5)	5.99E+02	(8)	5.99E+02	-	mg/Kg	<0.9921	<1.005	<0.5042	<1.0023	<0.5015	<1.9934	<1	<2.4736	<0.5061	<5.0083	<5.0117	<4.9933	<2.5017	<5	<2.5134
4-Chloroaniline	2.40E+01	(3)	8.60E+01	(6)	5.99E-02	(8)	5.99E-02	-	mg/Kg	<0.9921	<1.005	<0.5042	<1.0023	<0.5015	<1.9934	<1	<2.4736	<0.5061	<5.0083	<5.0117	<4.9933	<2.5017	<5	<2.5134
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	-	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
4-Nitroaniline	2.40E+02	(3)	8.60E+02	(6)	6.45E-01	(8)	6.45E-01	-	mg/Kg	<0.7937	<0.804	<0.4034	<0.8019	<0.4012	<1.5947	<0.8	<1.9789	<0.4049	<4.0067	<4.0094	<3.9947	<2.0013	<4	<2.0107
4-Nitrophenol	-	-	-	-	-	-	-	-	mg/Kg	<0.496	<0.5025	<0.2521	<0.5012	<0.2508	<0.9967	<0.5	<1.2368	<0.253	<2.5042	<2.5058	<2.4967	<1.2508	<2.5	<1.2567
Acenaphthene	3.44E+03	(1)	1.86E+04	(4)	7.79E+03	(7)	3.44E+03	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Acenaphthylene	-	-	-	-	-	-	-	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Aniline	8.50E+02	(3)	3.00E+03	(6)	1.80E+00	(8)	1.80E+00	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Anthracene	1.72E+04	(1)	6.68E+04	(4)	1.25E+05	(7)	1.72E+04	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Azobenzene	5.10E+01	(3)	2.30E+02	(6)	3.69E-01	(8)	3.69E-01	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Benz(a)anthracene	1.48E+00	(1)	2.13E+02	(4)	3.61E+01	(7)	1.48E+00	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Benzo(a)pyrene	1.48E-01	(1)	2.13E+01	(4)	1.20E+01	(7)	1.48E-01	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Benzo(b)fluoranthene	1.48E+00	(1)	2.13E+02	(4)	1.22E+02	(7)	1.48E+00	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Benzo(g,h,i)perylene	-	-	-	-	-	-	-	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Benzo(k)fluoranthene	1.48E+01	(1)	2.06E+03	(4)	1.20E+03	(7)	1.48E+01	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Benzoic acid	2.40E+05	(2)	2.50E+06	(5)	6.45E+03	(8)	6.45E+03	-	mg/Kg	<0.9921	<1.005	<0.5042	<1.0023	<0.5015	<1.9934	<1	<2.4736	<0.5061	<5.0083	<5.0117	<4.9933	<2.5017	<5	<2.5134
Benzyl alcohol	6.10E+03	(2)	6.20E+04	(5)	1.71E+02	(8)	1.71E+02	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Bis(2-chloroethoxy)methane	1.80E+02	(2)	1.80E+03	(5)	5.07E+00	(8)	5.07E+00	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Bis(2-chloroethyl)ether	2.68E+00	(1)	7.78E+01	(4)	1.21E-02	(7)	1.21E-02	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Bis(2-chloroisopropyl)ether	9.15E+01	(1)	3.10E+03	(4)	1.07E+00	(7)	1.07E+00	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Bis(2-ethylhexyl)phthalate	3.47E+02	(1)	4.76E+03	(4)	3.97E+03	(7)	3.47E+02	-	mg/Kg	<0.9921	<1.005	<0.5042	<1.0023	<0.5015	<1.9934	<1	<2.4736	<0.5061	<5.0083	<5.0117	<4.9933	<2.5017	<5	<2.5134
Butyl benzyl phthalate	2.60E+03	(3)	9.10E+03	(6)	9.22E+01	(8)	9.22E+01	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Carbazole	-	-	-	-	-	-	-	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Chrysene	1.48E+02	(1)	2.06E+04	(4)	3.68E+03	(7)	1.48E+02	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Dibenz(a,h)anthracene	1.48E-01	(1)	2.13E+01	(4)	3.90E+01	(7)	1.48E-01	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Dibenzofuran	7.80E+01	(2)	1.00E+03	(5)	5.07E+01	(8)	5.07E+01	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Diethyl phthalate	4.89E+04	(1)	1.91E+05	(4)	4.45E+03	(7)	4.45E+03	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(4)	3.71E+04	(7)	3.71E+04	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Di-n-butyl phthalate	6.11E+03	(1)	2.38E+04	(4)	3.21E+03	(7)	3.21E+03	-	mg/Kg	<0.9921	<1.005	<0.5042	<1.0023	<0.5015	<1.9934	<1	<2.4736	<0.5061	<5.0083	<5.0117	<4.9933	<2.5017	<5	<2.5134
Di-n-octyl phthalate	-	-	-	-	-	-	-	-	mg/Kg	<0.7937	<0.804	<0.4034	<0.8019	<0.4012	<1.5947	<0.8	<1.9789	<0.4049	<4.0067	<4.0094	<3.9947	<2.0013	<4	<2.0107
Fluoranthene	2.29E+03	(1)	8.91E+03	(4)	5.61E+04	(7)	2.29E+03	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Fluorene	2.29E+03	(1)	8.91E+03	(4)	9.36E+03	(7)	2.29E+03	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Hexachlorobenzene	3.04E+00	(1)	1.03E+02	(4)	1.83E+00	(7)	1.83E+00	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Hexachlorobutadiene	6.11E+01	(1)	2.38E+02	(4)	5.91E+00	(7)	5.91E+00	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Hexachlorocyclopentadiene	3.67E+02	(1)	8.11E+02	(4)	2.43E+02	(7)	2.43E+02	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Hexachloroethane	4.28E+01	(1)	1.67E+02	(4)	3.77E+00	(7)	3.77E+00	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Indeno(1,2,3-cd)pyrene	1.48E+00	(1)	2.13E+02	(4)	3.98E+02	(7)	1.48E+00	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Isophorone	5.12E+03	(1)	4.75E+04	(4)	8.84E+01	(7)	8.84E+01	-	mg/Kg	<0.9921	<1.005	<0.5042	<1.0023	<0.5015	<1.9934	<1	<2.4736	<0.5061	<5.0083	<5.0117	<4.9933	<2.5017	<5	<2.5134
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	1.64E+00	(7)	1.64E+00	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Nitrobenzene	5.35E+01	(1)	3.32E+02	(4)	2.88E-01	(7)	2.88E-01	-	mg/Kg	<0.9921	<1.005	<0.5042	<1.0023	<0.5015	<1.9934	<1	<2.4736	<0.5061	<5.0083	<5.0117	<4.9933	<2.5017	<5	<2.5134
N-Nitrosodi-n-propylamine	6.90E-01	(3)	2.50E+00	(6)	3.23E-03	(8)	3.23E-03	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
N-Nitrosodiphenylamine	9.93E+02	(1)	3.36E+04	(4)	2.61E+02	(7)	2.61E+02	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Pentachlorophenol	8.94E+00	(1)	3.10E+02	(4)	5.90E+00	(7)	5.90E+00	-	mg/Kg	<0.7937	<0.804	<0.4034	<0.8019	<0.4012	<1.5947	<0.8	<1.9789	<0.4049	<4.0067	<4.0094	<3.9947	<2.0013	<4	<2.0107
Phenanthrene	1.83E+03	(1)	7.15E+03	(4)	1.32E+04	(7)	1.83E+03	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Phenol	1.83E+04	(1)	6.88E+04	(4)	2.29E+03	(7)	2.29E+03	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Pyrene	1.72E+03	(1)	6.68E+03	(4)	4.12E+04	(7)	1.72E+03	-	mg/Kg	<0.3968	<0.402	<0.2017	<0.4009	<0.2006	<0.7973	<0.4	<0.9894	<0.2024	<2.0033	<2.0047	<1.9973	<1.0007	<2	<1.0054
Pyridine	7.80E+01	(2)	1.00E+03	(5)	2.44E+00	(8)	2.44E+00	-	mg/Kg	<0.9921	<1.005	<0.5042	<1.0023	<0.5015	<1.9934	<1	<2.4736	<0.5061	<5.0083	<5.0117	<4.9933	<2.5017	<5	<2.5134

Table 7
Aeration Basin Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	Units	SWMU 1-26 (0-0.5')	SWMU 1-27 (0-0.5')	SWMU 1-27 (1.5-2')	SWMU 1-28 (0-0.5')	SWMU 1-28 (1.5-2')	SWMU 1-29 (0-0.5')	SWMU 1-30 (0-0.5')	SWMU 1-30 (1.5-2')	SWMU 1-30 (4-6')	SWMU 1-31 (0-0.5')	SWMU 1-32 (0-0.5')	SWMU 1-33 (0-0.5')	SWMU 1-34 (0-0.5')	SWMU 1-35 (0-0.5')	SWMU 1-35 (1.5-2')
										1210859-005 10/16/2012	1210692-009 10/12/2012	1210692-010 10/12/2012	1210692-011 10/12/2012	1210692-012 10/12/2012	1210859-006 10/16/2012	1210692-014 10/12/2012	1210692-015 10/12/2012	1210692-016 10/12/2012	1210856-001 10/16/2012	1210856-002 10/16/2012	1210856-004 10/16/2012	1210856-005 10/16/2012	1210692-017 10/12/2012	1210692-018 10/12/2012
Total Petroleum Hydrocarbons - (EPA Method 8015B) mg/kg																								
Diesel Range Organics (DRO)	1.00E+03	(10)	1.00E+03	(10)	1.00E+03	(10)	-	-	mg/Kg	<10	<10	<10	27	<10	76	17	23	<10	<10	19	20	<10	12	15
Gasoline Range Organics (GRO)	-	-	-	-	-	-	-	-	mg/Kg	<5	9.3	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	24
Motor Oil Range Organics (MRO)	3.00E+03	(11)	3.00E+03	(11)	3.00E+03	(11)	-	-	mg/Kg	<48	<50	<50	53	<50	110	79	<49	<49	<51	100	110	<50	72	130

-- No screening level or analytical result available

NMED - Risk Assessment Guidance for Site Investigations and Remediation (June 14, 2012)

EPA - Regional Screening Levels (May 2012)

(1) NMED Residential Screening Level

(2) EPA Residential Screening Level

(3) EPA Residential - Screening Levels (May 2012) multiplied by.10 because the constituent is listed as carcinogenic

(4) NMED Construction Worker Screening Level

(5) EPA Industrial - Screening Levels (May 2012)

(6) EPA Industrial - Screening Levels (May 2012) multiplied by 10 pursuant to Provision VII.B. of the July 7, 2007 NMED Order because the constituent is listed as carcinogenic

(7) SoilGW NMED Dilution Attenuation Factor (DAF) = 461

(8) SoilGW Risk-based EPA DAF = 461

(9) SoilGW MCL-based EPA DAF = 461

(10) NMED Table 6-2 TPH Screening Guidelines for Potable Groundwater "uknown oil" with DAF = 1.0 - see report Section 5 for use of screening levels

(11) NMED Table 6-2 TPH Screening Guidelines for Potable Groundwater "waste oil" with DAF = 1.0 - see report Section 5 for use of screening levels

(12) Background concentrations to be determined

Bold represents value above Residential Screening Level
yellow highlight represents value above Leachate (DAF) Screening Level
Bold with yellow - value exceeds Residential Screening Level and DAF

Table 7
Aeration Basin Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	Units	SWMU 1-35 (4-8')	SWMU 1-36 (0-0.5')	SWMU 1-37 (0-0.5')	SWMU 1-37 (1.5-2')	SWMU 1-37 (12-13')	SWMU 1-37 (13-14')	SWMU 1-37 (17-18')	SWMU 1-37 (8.5-9')	SWMU 1-37 (8-8.5')	SWMU 1-38 (0-0.5')	SWMU 1-38 (1.5-2')	SWMU 1-38 (6-8')	SWMU 1-39 (0-0.5')
										1210692-019	1210856-006	1210653-001	1210653-002	1210653-005	1210653-006	1210653-007	1210653-004	1210653-003	1210692-006	1210692-007	1210692-008	1210859-002
										10/12/2012	10/16/2012	10/10/2012	10/10/2012	10/10/2012	10/10/2012	10/10/2012	10/10/2012	10/10/2012	10/11/2012	10/11/2012	10/11/2012	10/16/2012
Metals (mg/kg)																						
Antimony	3.13E+01	(1)	1.24E+02	(4)	3.05E+02	(7)	3.13E+01	-	mg/Kg	<5	<5	<5	<5	<5	<12.5	<12.5	<5	<5	<5	<5	<5	<5
Arsenic	3.90E+00	(1)	5.30E+01	(4)	6.05E+00	(7)	3.90E+00	-	mg/Kg	<5	<5	<5	<5	<5	<12.5	<12.5	<5	<5	<5	<5	<5	<5
Barium	1.56E+04	(1)	4.35E+03	(4)	1.39E+05	(7)	4.35E+03	-	mg/Kg	440	690	350	370	210	280	870	130	130	360	81	540	450
Beryllium	1.56E+02	(1)	1.44E+02	(4)	2.66E+04	(7)	1.44E+02	-	mg/Kg	0.67	0.66	0.85	0.79	0.72	1.2	1	0.83	0.77	0.7	0.84	0.9	0.71
Cadmium	7.03E+01	(1)	2.77E+02	(4)	6.33E+02	(7)	7.03E+01	-	mg/Kg	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium III	1.17E+05	(1)	4.65E+05	(4)	4.54E+10	(7)	1.17E+05	-	mg/Kg	9.8	21	17	24	15	13	13	8.6	10	24	12	12	10
Chromium VI	2.97E+00	(1)	6.56E+01	(4)	3.83E+00	(7)	2.97E+00	-	mg/Kg	9.8	21	17	24	15	13	13	8.6	10	24	12	12	10
Cobalt	2.30E+01	(2)	3.00E+02	(5)	9.68E+01	(8)	2.30E+01	-	mg/Kg	3.6	4.3	4.7	4.4	4.1	6	6.2	3.8	4.1	3.9	4.9	5.2	3.9
Cyanide	4.69E+01	(1)	1.86E+02	(4)	1.02E+02	(7)	4.69E+01	-	mg/Kg	<0.287	<0.255	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	1	0.3	<0.293	<0.259
Iron	5.48E+04	(1)	2.17E+05	(4)	2.98E+05	(7)	5.48E+04	-	mg/Kg	16000	16000	18000	16000	15000	20000	24000	16000	18000	14000	20000	22000	18000
Lead	4.00E+02	(1)	8.00E+02	(4)	6.45E+03	(8)	4.00E+02	-	mg/Kg	3.3	6.8	2.8	3.1	2.8	4	5	2.8	3.6	2.8	3.2	<0.5	4.6
Manganese	1.86E+03	(1)	4.40E+02	(4)	2.64E+04	(7)	4.40E+02	-	mg/Kg	770	580	610	570	530	320	1400	230	350	480	600	570	580
Mercury	1.56E+01	(1)	1.36E+01	(4)	1.51E+01	(7)	1.36E+01	-	mg/Kg	<0.033	0.2	0.051	0.054	<0.033	<0.033	<0.033	<0.033	<0.033	0.08	<0.033	<0.033	<0.033
Nickel	1.56E+03	(1)	6.19E+03	(4)	2.20E+04	(7)	1.56E+03	-	mg/Kg	6.2	12	8.4	7.6	6.9	11	12	6.9	7.3	7.7	8.5	11	6.2
Selenium	3.91E+02	(1)	1.55E+03	(4)	4.45E+02	(7)	3.91E+02	-	mg/Kg	<5	<5	<5	<5	<5	<12.5	<12.5	<5	<5	<5	<5	<5	<5
Silver	3.91E+02	(1)	1.55E+03	(4)	7.22E+02	(7)	3.91E+02	-	mg/Kg	<0.5	<0.5	<0.5	<0.5	<0.5	<1.2501	<1.25	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	3.91E+02	(1)	1.55E+03	(4)	8.42E+04	(7)	3.91E+02	-	mg/Kg	25	20	18	19	17	20	16	14	17	17	30	26	25
Zinc	2.35E+04	(1)	9.29E+04	(4)	3.14E+05	(7)	2.35E+04	-	mg/Kg	12	50	22	25	16	20	21	13	16	34	18	22	16
Volatile Organic Compounds - (EPA Method 8260) mg/kg																						
1,1,1,2-Tetrachloroethane	2.91E+01	(1)	7.79E+02	(4)	7.59E-01	(7)	7.59E-01	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
1,1,1-Trichloroethane	1.56E+04	(1)	1.48E+04	(4)	1.34E+03	(7)	1.34E+03	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
1,1,2,2-Tetrachloroethane	8.02E+00	(1)	2.21E+02	(4)	9.82E-02	(7)	9.82E-02	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
1,1,2-Trichloroethane	2.81E+00	(1)	4.72E+02	(4)	5.14E-02	(7)	5.14E-02	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
1,1-Dichloroethane	6.45E+01	(1)	1.70E+03	(4)	2.75E+00	(7)	2.75E+00	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
1,1-Dichloroethene	4.49E+02	(1)	4.32E+02	(4)	5.36E+01	(7)	5.36E+01	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
1,1-Dichloropropene	-	-	-	-	-	-	-	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
1,2,3-Trichlorobenzene	4.90E+01	(2)	4.90E+02	(5)	6.92E+00	(8)	6.92E+00	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
1,2,3-Trichloropropane	4.97E-02	(1)	7.23E+00	(4)	1.15E-03	(7)	1.15E-03	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
1,2,4-Trichlorobenzene	7.30E+01	(1)	6.87E+01	(4)	4.21E+00	(7)	4.21E+00	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
1,2,4-Trimethylbenzene	6.20E+01	(2)	2.60E+02	(5)	9.68E+00	(8)	9.68E+00	-	mg/Kg	0.00177	0.00313	0.00193	0.00112	<0.0009	<0.0008	0.00196	<0.0014	<0.0011	<0.0008	<0.0008	0.00123	<0.0008
1,2-Dibromo-3-chloropropane	1.86E+00	(1)	5.07E+00	(4)	5.07E-04	(7)	5.07E-04	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
1,2-Dibromoethane (EDB)	5.88E-01	(1)	1.60E+01	(4)	7.10E-03	(7)	7.10E-03	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
1,2-Dichlorobenzene	2.31E+03	(1)	2.71E+03	(4)	1.29E+02	(7)	1.29E+02	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
1,2-Dichloroethane (EDC)	7.89E+00	(1)	5.87E+01	(4)	1.64E-01	(7)	1.64E-01	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
1,2-Dichloropropane	1.52E+01	(1)	2.50E+01	(4)	4.94E-01	(7)	4.94E-01	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.00E+04	(5)	5.53E+01	(8)	5.53E+01	-	mg/Kg	0.000722	0.00115	<0.001	<0.0008	<0.0009	<0.0008	0.00122	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
1,3-Dichloropropane	1.60E+03	(2)	2.00E+04	(5)	4.56E+01	(8)	4.56E+01	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
1,4-Dichlorobenzene	3.17E+01	(1)	8.31E+02	(4)	1.47E+00	(7)	1.47E+00	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
1-Methylnaphthalene	1.60E+02	(3)	5.30E+02	(6)	2.35E+00	(8)	2.35E+00	-	mg/Kg	<0.0028	<0.0038	<0.0039	<0.003	<0.0037	<0.0034	<0.0032	<0.0055	<0.0042	<0.0034	<0.0032	<0.0032	<0.0031
2,2-Dichloropropane	-	-	-	-	-	-	-	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
2-Butanone (MEK)	3.71E+04	(1)	8.43E+04	(4)	5.87E+02	(7)	5.87E+02	-	mg/Kg	<0.007	<0.0095	0.0182	0.00999	<0.0092	<0.0084	<0.0081	<0.0136	<0.0105	<0.0085	0.0138	<0.008	<0.0077
2-Chlorotoluene	1.56E+03	(1)	6.19E+03	(4)	2.57E+02	(7)	2.57E+02	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
2-Hexanone	9.38E+02	(1)	9.73E+02	(4)	3.53E+03	(7)	9.38E+02	-	mg/Kg	<0.007	<0.0095	<0.0096	<0.0076	<0.0092	<0.0084	<0.0081	<0.0136	<0.0105	<0.0085	<0.0079	<0.008	<0.0077
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	6.45E+01	(8)	6.45E+01	-	mg/Kg	<0.0028	<0.0038	<0.0039	<0.003	<0.0037	<0.0034	<0.0032	<0.0055	<0.0042	<0.0034	<0.0032	<0.0032	<0.0031
4-Chlorotoluene	1.60E+03	(2)	2.00E+04	(5)	8.30E+01	(8)	8.30E+01	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
4-Isopropyltoluene	-	-	-	-	-	-	-	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
4-Methyl-2-pentanone	5.30E+03	(2)	5.30E+04	(5)	1.06E+02	(8)	1.06E+02	-	mg/Kg	<0.007	<0.0095	0.0116	<0.0076	<0.0092	<0.0084	<0.0081	<0.0136	<0.0105	<0.0085	<0.0079	<0.008	<0.0077
Acetone	6.66E+04	(1)	2.21E+05	(4)	1.78E+03	(7)	1.78E+03	-	mg/Kg	0.0381	0.0535	0.109	0.0745	0.0141	0.0148	0.0127	0.0148	0.0133	0.156	0.158	0.025	0.0521
Benzene	1.54E+01	(1)	1.38E+02	(4)	7.96E-01	(7)	7.96E-01	-	mg/Kg	0.00202	0.00251	0.00239	0.00203	0.00165	0.00157	0.0106	0.00221	0.00174	0.00204	0.00122	0.0114	0.00189
Bromobenzene	3.00E+02	(2)	1.80E+03	(5)	1.66E+01	(8)	1.66E+01	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008

Table 7
Aeration Basin Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	Units	SWMU 1-35 (4-6')	SWMU 1-36 (0-0.5')	SWMU 1-37 (0-0.5')	SWMU 1-37 (1.5-2')	SWMU 1-37 (12-13')	SWMU 1-37 (13-14')	SWMU 1-37 (17-18')	SWMU 1-37 (8.5-9')	SWMU 1-37 (8-8.5')	SWMU 1-38 (0-0.5')	SWMU 1-38 (1.5-2')	SWMU 1-38 (6-8')	SWMU 1-39 (0-0.5')
										1210692-019	1210856-006	1210653-001	1210653-002	1210653-005	1210653-006	1210653-007	1210653-004	1210653-003	1210692-006	1210692-007	1210692-008	1210859-002
										10/12/2012	10/16/2012	10/10/2012	10/10/2012	10/10/2012	10/10/2012	10/10/2012	10/10/2012	10/10/2012	10/11/2012	10/11/2012	10/11/2012	10/16/2012
Bromodichloromethane	5.41E+00	(1)	1.43E+02	(4)	1.25E-01	(7)	1.25E-01	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
Bromoform	6.16E+02	(1)	4.76E+03	(4)	2.78E+02	(7)	2.78E+02	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
Bromomethane	1.65E+01	(1)	1.64E+01	(4)	8.86E-01	(7)	8.86E-01	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
Carbon disulfide	1.53E+03	(1)	1.58E+03	(4)	1.30E+02	(7)	1.30E+02	-	mg/Kg	<0.007	<0.0095	<0.0096	<0.0076	<0.0092	<0.0084	<0.0081	<0.0136	<0.0105	<0.0085	<0.0079	<0.008	<0.0077
Carbon tetrachloride	1.08E+01	(1)	2.26E+02	(4)	7.39E-01	(7)	7.39E-01	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
Chlorobenzene	3.76E+02	(1)	4.06E+02	(4)	2.27E+01	(7)	2.27E+01	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
Chloroethane	2.98E+04	(1)	2.61E+04	(4)	2.48E+03	(7)	2.48E+03	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
Chloroform	5.86E+00	(1)	1.54E+02	(4)	2.12E-01	(7)	2.12E-01	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
Chloromethane	2.75E+02	(1)	2.41E+02	(4)	2.03E+01	(7)	2.03E+01	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
cis-1,2-DCE	1.56E+02	(1)	6.19E+02	(4)	8.47E+00	(7)	8.47E+00	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
cis-1,3-Dichloropropene	3.37E+01	(1)	2.09E+02	(4)	5.71E-01	(7)	5.71E-01	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
Dibromochloromethane	1.21E+01	(1)	3.32E+02	(4)	1.52E-01	(7)	1.52E-01	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
Dibromomethane	5.16E+01	(1)	3.10E+03	(4)	7.89E-01	(7)	7.89E-01	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
Dichlorodifluoromethane	1.68E+02	(1)	1.49E+02	(4)	1.71E+02	(7)	1.49E+02	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
Ethylbenzene	6.84E+01	(1)	1.83E+03	(4)	5.98E+00	(7)	5.98E+00	-	mg/Kg	0.00107	0.00147	0.00119	<0.0008	<0.0009	<0.0008	0.00187	<0.0014	<0.0011	0.00165	0.00135	0.00107	<0.0008
Hexachlorobutadiene	6.11E+01	(1)	2.38E+02	(4)	5.91E+00	(7)	5.91E+00	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
Isopropylbenzene	2.43E+03	(1)	2.81E+03	(4)	3.99E+02	(7)	3.99E+02	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
Methyl tert-butyl ether (MTBE)	9.01E+02	(1)	2.49E+04	(4)	1.11E+01	(7)	1.11E+01	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	0.00957	0.00477	<0.0008	0.0444	0.0101	<0.0008	<0.0008	<0.0008	<0.0008
Methylene chloride	4.09E+02	(1)	1.12E+03	(4)	1.90E+01	(7)	1.90E+01	-	mg/Kg	<0.0021	<0.0028	<0.0029	<0.0023	<0.0028	<0.0025	<0.0024	<0.0041	<0.0032	<0.0025	<0.0024	<0.0024	<0.0023
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	1.64E+00	(7)	1.64E+00	-	mg/Kg	<0.0014	<0.0019	<0.0019	<0.0015	<0.0018	<0.0017	<0.0016	<0.0027	<0.0021	<0.0017	<0.0016	<0.0016	<0.0015
n-Butylbenzene	3.90E+03	(2)	5.10E+04	(5)	1.15E+03	(8)	1.15E+03	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
n-Propylbenzene	3.40E+03	(2)	2.10E+04	(5)	4.56E+02	(8)	4.56E+02	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
sec-Butylbenzene	-	-	-	-	-	-	-	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
Styrene	7.28E+03	(1)	9.99E+03	(4)	6.40E+02	(7)	6.40E+02	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
tert-Butylbenzene	-	-	-	-	-	-	-	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
Tetrachloroethene (PCE)	7.02E+00	(1)	2.12E+02	(4)	1.98E-01	(7)	1.98E-01	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
Toluene	5.27E+03	(1)	1.34E+04	(4)	5.84E+02	(7)	5.84E+02	-	mg/Kg	0.00423	0.00652	0.00454	0.00259	0.000948	0.00127	0.0074	0.00179	0.00109	0.0019	0.00114	0.00448	0.00109
trans-1,2-DCE	2.70E+02	(1)	2.73E+02	(4)	1.24E+01	(7)	1.24E+01	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
Trichloroethene (TCE)	8.77E+00	(1)	7.68E+00	(4)	4.85E-01	(7)	4.85E-01	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
Trichlorofluoromethane	1.41E+03	(1)	1.30E+03	(4)	4.10E+02	(7)	4.10E+02	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
Vinyl chloride	7.28E-01	(1)	1.49E+02	(4)	2.50E-02	(7)	2.50E-02	-	mg/Kg	<0.0007	<0.0009	<0.001	<0.0008	<0.0009	<0.0008	<0.0008	<0.0014	<0.0011	<0.0008	<0.0008	<0.0008	<0.0008
Xylenes, Total	8.14E+02	(1)	7.43E+02	(4)	7.21E+01	(7)	7.21E+01	-	mg/Kg	0.00434	0.0061	0.00526	0.00305	<0.0018	<0.0017	0.00597	<0.0027	<0.0021	0.00901	0.00793	0.00276	<0.0015
Semi Volatile Organics - (EPA Method 8270) mg/kg																						
1,2,4-Trichlorobenzene	7.30E+01	(1)	6.87E+01	(4)	4.21E+00	(7)	4.21E+00	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
1,2-Dichlorobenzene	2.31E+03	(1)	2.71E+03	(4)	1.29E+02	(7)	1.29E+02	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
1,4-Dichlorobenzene	3.17E+01	(1)	8.31E+02	(4)	1.47E+00	(7)	1.47E+00	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
1-Methylnaphthalene	1.60E+02	(3)	5.30E+02	(6)	2.35E+00	(8)	2.35E+00	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
2,4,5-Trichlorophenol	6.11E+03	(1)	2.38E+04	(4)	4.78E+03	(7)	4.78E+03	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
2,4,6-Trichlorophenol	6.11E+01	(1)	2.38E+02	(4)	4.78E+01	(7)	4.78E+01	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
2,4-Dichlorophenol	1.83E+02	(1)	7.15E+02	(4)	4.60E+01	(7)	4.60E+01	-	mg/Kg	<0.8021	<3.9987	<0.8011	<0.816	<0.3984	<0.3951	<0.4004	<0.3962	<0.3954	<0.4046	<0.8051	<0.3992	<0.398
2,4-Dimethylphenol	1.22E+03	(1)	4.76E+03	(4)	3.07E+02	(7)	3.07E+02	-	mg/Kg	<0.6016	<2.999	<0.6008	<0.612	<0.2988	<0.2963	<0.3003	<0.2971	<0.2965	<0.3034	<0.6038	<0.2994	<0.2985
2,4-Dinitrophenol	1.22E+02	(1)	4.76E+02	(4)	2.91E+01	(7)	2.91E+01	-	mg/Kg	<0.8021	<3.9987	<0.8011	<0.816	<0.3984	<0.3951	<0.4004	<0.3962	<0.3954	<0.4046	<0.8051	<0.3992	<0.398
2,4-Dinitrotoluene	1.57E+01	(1)	4.76E+02	(4)	1.04E+00	(7)	1.04E+00	-	mg/Kg	<1.0027	<4.9983	<1.0013	<1.0201	<0.498	<0.4939	<0.5005	<0.4952	<0.4942	<0.5057	<1.0064	<0.499	<0.4975
2,6-Dinitrotoluene	6.11E+01	(1)	2.38E+02	(4)	1.77E+01	(7)	1.77E+01	-	mg/Kg	<1.0027	<4.9983	<1.0013	<1.0201	<0.498	<0.4939	<0.5005	<0.4952	<0.4942	<0.5057	<1.0064	<0.499	<0.4975
2-Chloronaphthalene	6.11E+01	(1)	2.94E+02	(4)	4.01E-01	(7)	4.01E-01	-	mg/Kg	<0.5013	<2.4992	<0.5007	<0.51	<0.249	<0.247	<0.2503	<0.2476	<0.2471	<0.2529	<0.5032	<0.2495	<0.2488
2-Chlorophenol	3.91E+02	(1)	1.55E+03	(4)	5.33E+01	(7)	5.33E+01	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	6.45E+01	(8)	6.45E+01	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
2-Methylphenol	3.10E+03	(2)	3.10E+04	(5)	2.67E+02	(8)	2.67E+02	-	mg/Kg	<1.0027	<4.9983	<1.0013	<1.0201	<0.498	<0.4939	<0.5005	<0.4952	<0.4942	<0.5057	<1.0064	<0.499	<0.4975
2-Nitroaniline	6.10E+02	(2)	6.00E+03	(5)	2.86E+01	(8)	2.86E+01	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
2-Nitrophenol	-	-	-	-	-	-	-	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199

Table 7
Aeration Basin Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	Units	SWMU 1-35 (4-6')	SWMU 1-36 (0-0.5')	SWMU 1-37 (0-0.5')	SWMU 1-37 (1.5-2')	SWMU 1-37 (12-13')	SWMU 1-37 (13-14')	SWMU 1-37 (17-18')	SWMU 1-37 (8.5-9')	SWMU 1-37 (8-8.5')	SWMU 1-38 (0-0.5')	SWMU 1-38 (1.5-2')	SWMU 1-38 (6-8')	SWMU 1-39 (0-0.5')
										1210692-019	1210856-006	1210653-001	1210653-002	1210653-005	1210653-006	1210653-007	1210653-004	1210653-003	1210692-006	1210692-007	1210692-008	1210859-002
										10/12/2012	10/16/2012	10/10/2012	10/10/2012	10/10/2012	10/10/2012	10/10/2012	10/10/2012	10/10/2012	10/11/2012	10/11/2012	10/11/2012	10/16/2012
3,3'-Dichlorobenzidine	1.08E+01	(1)	3.64E+02	(4)	3.41E+00	(7)	3.41E+00	-	mg/Kg	<0.5013	<2.4992	<0.5007	<0.51	<0.249	<0.247	<0.2503	<0.2476	<0.2471	<0.2529	<0.5032	<0.2495	<0.2488
3+4-Methylphenol	-	-	-	-	-	-	-	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
3-Nitroaniline	-	-	-	-	-	-	-	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
4,6-Dinitro-2-methylphenol	4.90E+00	(2)	4.90E+01	(5)	9.22E-01	(8)	9.22E-01	-	mg/Kg	<1.0027	<4.9983	<1.0013	<1.0201	<0.498	<0.4939	<0.5005	<0.4952	<0.4942	<0.5057	<1.0064	<0.499	<0.4975
4-Bromophenyl phenyl ether	-	-	-	-	-	-	-	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
4-Chloro-3-methylphenol	6.10E+03	(2)	6.20E+04	(5)	5.99E+02	(8)	5.99E+02	-	mg/Kg	<1.0027	<4.9983	<1.0013	<1.0201	<0.498	<0.4939	<0.5005	<0.4952	<0.4942	<0.5057	<1.0064	<0.499	<0.4975
4-Chloroaniline	2.40E+01	(3)	8.60E+01	(6)	5.99E-02	(8)	5.99E-02	-	mg/Kg	<1.0027	<4.9983	<1.0013	<1.0201	<0.498	<0.4939	<0.5005	<0.4952	<0.4942	<0.5057	<1.0064	<0.499	<0.4975
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	-	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
4-Nitroaniline	2.40E+02	(3)	8.60E+02	(6)	6.45E-01	(8)	6.45E-01	-	mg/Kg	<0.8021	<3.9987	<0.8011	<0.816	<0.3984	<0.3951	<0.4004	<0.3962	<0.3954	<0.4046	<0.8051	<0.3992	<0.398
4-Nitrophenol	-	-	-	-	-	-	-	-	mg/Kg	<0.5013	<2.4992	<0.5007	<0.51	<0.249	<0.247	<0.2503	<0.2476	<0.2471	<0.2529	<0.5032	<0.2495	<0.2488
Acenaphthene	3.44E+03	(1)	1.86E+04	(4)	7.79E+03	(7)	3.44E+03	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Acenaphthylene	-	-	-	-	-	-	-	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Aniline	8.50E+02	(3)	3.00E+03	(6)	1.80E+00	(8)	1.80E+00	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Anthracene	1.72E+04	(1)	6.68E+04	(4)	1.25E+05	(7)	1.72E+04	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Azobenzene	5.10E+01	(3)	2.30E+02	(6)	3.69E-01	(8)	3.69E-01	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Benz(a)anthracene	1.48E+00	(1)	2.13E+02	(4)	3.61E+01	(7)	1.48E+00	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Benzo(a)pyrene	1.48E-01	(1)	2.13E+01	(4)	1.20E+01	(7)	1.48E-01	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Benzo(b)fluoranthene	1.48E+00	(1)	2.13E+02	(4)	1.22E+02	(7)	1.48E+00	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Benzo(g,h,i)perylene	-	-	-	-	-	-	-	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Benzo(k)fluoranthene	1.48E+01	(1)	2.06E+03	(4)	1.20E+03	(7)	1.48E+01	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Benzoic acid	2.40E+05	(2)	2.50E+06	(5)	6.45E+03	(8)	6.45E+03	-	mg/Kg	<1.0027	<4.9983	<1.0013	<1.0201	<0.498	<0.4939	<0.5005	<0.4952	<0.4942	<0.5057	<1.0064	<0.499	<0.4975
Benzyl alcohol	6.10E+03	(2)	6.20E+04	(5)	1.71E+02	(8)	1.71E+02	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Bis(2-chloroethoxy)methane	1.80E+02	(2)	1.80E+03	(5)	5.07E+00	(8)	5.07E+00	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Bis(2-chloroethyl)ether	2.68E+00	(1)	7.78E+01	(4)	1.21E-02	(7)	1.21E-02	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Bis(2-chloroisopropyl)ether	9.15E+01	(1)	3.10E+03	(4)	1.07E+00	(7)	1.07E+00	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Bis(2-ethylhexyl)phthalate	3.47E+02	(1)	4.76E+03	(4)	3.97E+03	(7)	3.47E+02	-	mg/Kg	<1.0027	<4.9983	<1.0013	<1.0201	<0.498	<0.4939	<0.5005	<0.4952	<0.4942	<0.5057	<1.0064	<0.499	<0.4975
Butyl benzyl phthalate	2.60E+03	(3)	9.10E+03	(6)	9.22E+01	(8)	9.22E+01	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Carbazole	-	-	-	-	-	-	-	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Chrysene	1.48E+02	(1)	2.06E+04	(4)	3.68E+03	(7)	1.48E+02	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Dibenz(a,h)anthracene	1.48E-01	(1)	2.13E+01	(4)	3.90E+01	(7)	1.48E-01	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Dibenzofuran	7.80E+01	(2)	1.00E+03	(5)	5.07E+01	(8)	5.07E+01	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Diethyl phthalate	4.89E+04	(1)	1.91E+05	(4)	4.45E+03	(7)	4.45E+03	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(4)	3.71E+04	(7)	3.71E+04	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Di-n-butyl phthalate	6.11E+03	(1)	2.38E+04	(4)	3.21E+03	(7)	3.21E+03	-	mg/Kg	<1.0027	<4.9983	<1.0013	<1.0201	<0.498	<0.4939	<0.5005	<0.4952	<0.4942	<0.5057	<1.0064	<0.499	<0.4975
Di-n-octyl phthalate	-	-	-	-	-	-	-	-	mg/Kg	<0.8021	<3.9987	<0.8011	<0.816	<0.3984	<0.3951	<0.4004	<0.3962	<0.3954	<0.4046	<0.8051	<0.3992	<0.398
Fluoranthene	2.29E+03	(1)	8.91E+03	(4)	5.61E+04	(7)	2.29E+03	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Fluorene	2.29E+03	(1)	8.91E+03	(4)	9.36E+03	(7)	2.29E+03	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Hexachlorobenzene	3.04E+00	(1)	1.03E+02	(4)	1.83E+00	(7)	1.83E+00	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Hexachlorobutadiene	6.11E+01	(1)	2.38E+02	(4)	5.91E+00	(7)	5.91E+00	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Hexachlorocyclopentadiene	3.67E+02	(1)	8.11E+02	(4)	2.43E+02	(7)	2.43E+02	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Hexachloroethane	4.28E+01	(1)	1.67E+02	(4)	3.77E+00	(7)	3.77E+00	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Indeno(1,2,3-cd)pyrene	1.48E+00	(1)	2.13E+02	(4)	3.98E+02	(7)	1.48E+00	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Isophorone	5.12E+03	(1)	4.75E+04	(4)	8.84E+01	(7)	8.84E+01	-	mg/Kg	<1.0027	<4.9983	<1.0013	<1.0201	<0.498	<0.4939	<0.5005	<0.4952	<0.4942	<0.5057	<1.0064	<0.499	<0.4975
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	1.64E+00	(7)	1.64E+00	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Nitrobenzene	5.35E+01	(1)	3.32E+02	(4)	2.88E-01	(7)	2.88E-01	-	mg/Kg	<1.0027	<4.9983	<1.0013	<1.0201	<0.498	<0.4939	<0.5005	<0.4952	<0.4942	<0.5057	<1.0064	<0.499	<0.4975
N-Nitrosodi-n-propylamine	6.90E-01	(3)	2.50E+00	(6)	3.23E-03	(8)	3.23E-03	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
N-Nitrosodiphenylamine	9.93E+02	(1)	3.36E+04	(4)	2.61E+02	(7)	2.61E+02	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Pentachlorophenol	8.94E+00	(1)	3.10E+02	(4)	5.90E+00	(7)	5.90E+00	-	mg/Kg	<0.8021	<3.9987	<0.8011	<0.816	<0.3984	<0.3951	<0.4004	<0.3962	<0.3954	<0.4046	<0.8051	<0.3992	<0.398
Phenanthrene	1.83E+03	(1)	7.15E+03	(4)	1.32E+04	(7)	1.83E+03	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Phenol	1.83E+04	(1)	6.88E+04	(4)	2.29E+03	(7)	2.29E+03	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Pyrene	1.72E+03	(1)	6.68E+03	(4)	4.12E+04	(7)	1.72E+03	-	mg/Kg	<0.4011	<1.9993	<0.4005	<0.408	<0.1992	<0.1976	<0.2002	<0.1981	<0.1977	<0.2023	<0.4025	<0.1996	<0.199
Pyridine	7.80E+01	(2)	1.00E+03	(5)	2.44E+00	(8)	2.44E+00	-	mg/Kg	<1.0027	<4.9983	<1.0013	<1.0201	<0.498	<0.4939	<0.5005	<0.4952	<0.4942	<0.5057	<1.0064	<0.499	<0.4975

Table 7
Aeration Basin Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	Units	SWMU 1-35 (4-6')	SWMU 1-36 (0-0.5')	SWMU 1-37 (0-0.5')	SWMU 1-37 (1.5-2')	SWMU 1-37 (12-13')	SWMU 1-37 (13-14')	SWMU 1-37 (17-18')	SWMU 1-37 (8.5-9')	SWMU 1-37 (8-8.5')	SWMU 1-38 (0-0.5')	SWMU 1-38 (1.5-2')	SWMU 1-38 (6-8')	SWMU 1-39 (0-0.5')
										1210692-019 10/12/2012	1210856-006 10/16/2012	1210653-001 10/10/2012	1210653-002 10/10/2012	1210653-005 10/10/2012	1210653-006 10/10/2012	1210653-007 10/10/2012	1210653-004 10/10/2012	1210653-003 10/10/2012	1210692-006 10/11/2012	1210692-007 10/11/2012	1210692-008 10/11/2012	1210859-002 10/16/2012
Total Petroleum Hydrocarbons - (EPA Method 8015B) mg/kg																						
Diesel Range Organics (DRO)	1.00E+03	(10)	1.00E+03	(10)	1.00E+03	(10)	-	-	mg/Kg	<10	56	100	100	<10	<10	<10	<10	<10	<10	<10	<10	<10
Gasoline Range Organics (GRO)	-	-	-	-	-	-	-	-	mg/Kg	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Motor Oil Range Organics (MRO)	3.00E+03	(11)	3.00E+03	(11)	3.00E+03	(11)	-	-	mg/Kg	<52	150	130	130	<50	<50	<49	<51	<51	<51	<51	<51	<51

-- No screening level or analytical result available

NMED - Risk Assessment Guidance for Site Investigations and Remediation (June 14, 2012)

EPA - Regional Screening Levels (May 2012)

(1) NMED Residential Screening Level

(2) EPA Residential Screening Level

(3) EPA Residential - Screening Levels (May 2012) multiplied by 10 because the constituent is listed as carcinogenic

(4) NMED Construction Worker Screening Level

(5) EPA Industrial - Screening Levels (May 2012)

(6) EPA Industrial - Screening Levels (May 2012) multiplied by 10 pursuant to Provision VII.B. of the July 7, 2007 NMED Order because the constituent is listed as carcinogenic

(7) SoilGW NMED Dilution Attenuation Factor (DAF) = 461

(8) SoilGW Risk-based EPA DAF = 461

(9) SoilGW MCL-based EPA DAF = 461

(10) NMED Table 6-2 TPH Screening Guidelines for Potable Groundwater "uknown oil" with DAF = 1.0 - see report Section 5 for use of screening levels

(11) NMED Table 6-2 TPH Screening Guidelines for Potable Groundwater "waste oil" with DAF = 1.0 - see report Section 5 for use of screening levels

(12) Background concentrations to be determined

Bold represents value above Residential Screening Level
yellow highlight represents value above Leachate (DAF) Screening Level
Bold with yellow - value exceeds Residential Screening Level and DAF

Table 8
Old API Separator Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	SWMU 14-1 (0-0.5)	SWMU 14-1 (1.5-2)	SWMU 14-1 (10-12)	SWMU 14-1 (48-50')	SWMU 14-2 (0-0.5')	SWMU 14-2 (1.5-2.0')	SWMU 14-2 (16-18')	SWMU 14-2 (24-25')	SWMU 14-2 (8-10')	SWMU 14-3 (0-0.5')	SWMU 14-3 (1.5-2')	SWMU 14-3 (12-14')	SWMU 14-3 (25.5-26')
									1207748-001 7/16/2012	1207748-002 7/16/2012	1207748-003 7/16/2012	1207900-006 7/18/2012	1207917-005 7/17/2012	1207917-006 7/17/2012	1207917-009 7/17/2012	1207917-010 7/17/2012	1207917-007 7/17/2012	1207900-001 7/18/2012	1207900-002 7/18/2012	1207900-004 7/18/2012	1207900-005 7/18/2012
Metals (mg/kg)																					
Antimony	3.13E+01	(1)	1.24E+02	(4)	3.05E+02	(8)	3.13E+01	-	<12.5	<12.5	<12.5	<12.5	4	3.6	4.7	3.3	0.82	4.8	<2.5	<12.5	<12.5
Arsenic	3.90E+00	(1)	5.30E+01	(4)	6.05E+00	(8)	3.90E+00	-	<12.5	<12.5	<12.5	<12.5	<12.5	<12.501	<12.5	<12.5	1.6	<12.5	<12.5	<12.5	<12.5
Barium	1.56E+04	(1)	4.35E+03	(4)	1.39E+05	(8)	4.35E+03	-	790	550	1100	750	700	470	520	460	400	920	560	350	630
Beryllium	1.56E+02	(1)	1.44E+02	(4)	2.66E+04	(8)	1.44E+02	-	0.61	0.89	0.69	1.4	0.68	0.76	1.3	1.1	0.58	0.77	0.65	0.67	1.1
Cadmium	7.03E+01	(1)	2.77E+02	(4)	6.33E+02	(8)	7.03E+01	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1	<0.5	<0.1	<0.5	<0.5
Chromium III	1.17E+05	(1)	4.65E+05	(4)	4.54E+10	(8)	1.17E+05	-	6.8	11	11	20	8.8	12	18	18	76	11	19	110	17
Chromium VI	2.97E+00	(1)	6.56E+01	(4)	3.83E+00	(8)	2.97E+00	-	6.8	11	11	20	8.8	12	18	18	76	11	19	110	17
Cobalt	2.30E+01	(2)	3.00E+02	(5)	9.68E+01	(8)	2.30E+01	-	5.4	5.1	5	6.7	4.4	3.8	7.2	9.7	3.7	5.1	3.6	4.9	10
Cyanide	4.69E+01	(1)	1.86E+02	(4)	1.02E+02	(8)	4.69E+01	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.8	<0.5	<0.5
Iron	5.48E+04	(1)	2.17E+05	(4)	2.98E+05	(8)	5.48E+04	-	9000	17000	14000	23000	14000	11000	26000	19000	14000	13000	11000	14000	21000
Lead	4.00E+02	(1)	8.00E+02	(4)	6.45E+03	(8)	4.00E+02	-	3.6	4.6	2.5	2	3.3	4.4	1.2	<1.25	4.6	2.7	1.7	12	<1.25
Manganese	1.86E+03	(1)	4.40E+02	(4)	2.64E+04	(8)	4.40E+02	-	570	510	590	720	510	530	1100	980	400	600	400	570	1400
Mercury	1.56E+01	(1)	1.36E+01	(4)	1.51E+01	(8)	1.36E+01	-	0.038	0.015	<0.033	<0.033	0.01	0.024	<0.033	<0.033	0.29	0.15	0.23	0.28	<0.033
Nickel	1.56E+03	(1)	6.19E+03	(4)	2.20E+04	(8)	1.56E+03	-	6.1	8.3	7.6	16	6.2	7.3	16	17	6.6	8	6	8.5	17
Selenium	3.91E+02	(1)	1.55E+03	(4)	4.45E+02	(8)	3.91E+02	-	<12.5	<50	<12.5	<12.5	<12.5	<12.501	<12.5	<12.5	<2.5	<12.5	<2.5	<12.5	<12.5
Silver	3.91E+02	(1)	1.55E+03	(4)	7.22E+02	(8)	3.91E+02	-	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<0.25	<1.25	<0.25	<1.25	<1.25
Vanadium	3.91E+02	(1)	1.55E+03	(4)	8.42E+04	(8)	3.91E+02	-	17	26	24	9.8	31	21	22	52	20	23	18	31	24
Zinc	2.35E+04	(1)	9.29E+04	(4)	3.14E+05	(8)	2.35E+04	-	21	21	20	23	17	35	26	31	37	42	42	65	34
Volatile Organic Compounds - (EPA Method 8260) mg/kg																					
1,1,1,2-Tetrachloroethane	2.91E+01	(1)	7.79E+02	(4)	7.59E-01	(8)	7.59E-01	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
1,1,1-Trichloroethane	1.56E+04	(1)	1.48E+04	(4)	1.34E+03	(8)	1.34E+03	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
1,1,2,2-Tetrachloroethane	8.02E+00	(1)	2.21E+02	(4)	9.82E-02	(8)	9.82E-02	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
1,1,2-Trichloroethane	2.81E+00	(1)	4.72E+02	(4)	5.14E-02	(8)	5.14E-02	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
1,1-Dichloroethane	6.45E+01	(1)	1.70E+03	(4)	2.75E+00	(8)	2.75E+00	-	<0.001	<0.001	0.000229	<0.001	<0.1	<2	<0.001	<0.001	<2	<0.001	<0.1	<2	<0.001
1,1-Dichloroethene	4.49E+02	(1)	4.32E+02	(4)	5.36E+01	(8)	5.36E+01	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
1,1-Dichloropropene	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.1	<2	<0.001	<0.001	<2	<0.001	<0.1	<2	<0.001
1,2,3-Trichlorobenzene	4.90E+01	(2)	4.90E+02	(5)	6.92E+00	(8)	6.92E+00	-	<0.001	<0.001	<0.001	<0.001	<0.1	<2	<0.001	<0.001	<2	<0.001	<0.1	<2	<0.001
1,2,3-Trichloropropane	4.97E-02	(1)	7.23E+00	(4)	1.15E-03	(8)	1.15E-03	-	<0.001	<0.001	<0.001	<0.001	<0.1	<2	<0.001	<0.001	<2	<0.001	<0.1	<2	<0.001
1,2,4-Trichlorobenzene	7.30E+01	(1)	6.87E+01	(4)	4.21E+00	(8)	4.21E+00	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
1,2,4-Trimethylbenzene	6.20E+01	(2)	2.60E+02	(5)	9.68E+00	(8)	9.68E+00	-	<0.001	<0.001	<0.001	<0.001	<0.05	1.8	<0.001	0.011	6.2	<0.001	<0.05	4.3	<0.001
1,2-Dibromo-3-chloropropane	1.86E+00	(1)	5.07E+00	(4)	5.07E-04	(8)	5.07E-04	-	<0.002	<0.002	<0.002	<0.002	<0.1	<2	<0.002	<0.002	<2	<0.002	<0.1	<2	<0.002
1,2-Dibromoethane (EDB)	5.88E-01	(1)	1.60E+01	(4)	7.10E-03	(8)	7.10E-03	-	<0.001	<0.001	<0.001	<0.001	<0.05	0.17	<0.001	<0.001	0.29	<0.001	<0.05	0.31	<0.001
1,2-Dichlorobenzene	2.31E+03	(1)	2.71E+03	(4)	1.29E+02	(8)	1.29E+02	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
1,2-Dichloroethane (EDC)	7.89E+00	(1)	5.87E+01	(4)	1.64E-01	(8)	1.64E-01	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
1,2-Dichloropropane	1.52E+01	(1)	2.50E+01	(4)	4.94E-01	(8)	4.94E-01	-	<0.002	<0.002	<0.002	<0.002	<0.05	<1	<0.002	<0.002	0.16	<0.002	<0.05	<1	<0.002
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.00E+04	(5)	5.53E+01	(8)	5.53E+01	-	<0.001	<0.001	<0.001	<0.001	<0.05	1.1	<0.001	0.00112	0.39	<0.001	<0.05	0.099	<0.001
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
1,3-Dichloropropane	1.60E+03	(2)	2.00E+04	(5)	4.56E+01	(8)	4.56E+01	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
1,4-Dichlorobenzene	3.17E+01	(1)	8.31E+02	(4)	1.47E+00	(8)	1.47E+00	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
1-Methylnaphthalene	1.60E+02	(3)	5.30E+01	(6)	2.35E+00	(8)	2.35E+00	-	0.000968	<0.003	0.000458	<0.004	0.065	4.7	<0.004	0.025	16	<0.004	0.015	16	<0.004
2,2-Dichloropropane	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.1	<2	<0.001	<0.001	<2	<0.001	<0.1	<2	<0.001
2-Butanone (MEK)	3.71E+04	(1)	8.43E+04	(4)	5.87E+02	(8)	5.87E+02	-	<0.002	<0.002	<0.002	<0.002	<0.5	<10	<0.005	0.00176	<10	<0.002	<0.5	<10	<0.002
2-Chlorotoluene	1.56E+03	(1)	6.19E+03	(4)	2.57E+02	(8)	2.57E+02	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
2-Hexanone	9.38E+02	(1)	9.73E+02	(4)	3.53E+03	(8)	9.38E+02	-	<0.002	<0.002	<0.002	<0.002	<0.5	<10	<0.005	<0.005	<10	<0.002	<0.5	<10	<0.002
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	6.45E+01	(8)	6.45E+01	-	0.00119	<0.003	<0.004	<0.004	0.082	5.6	<0.004	0.0197	17	<0.004	0.018	16	<0.004
4-Chlorotoluene	1.60E+03	(2)	2.00E+04	(5)	8.30E+01	(8)	8.30E+01	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
4-Isopropyltoluene	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.05	0.3	<0.001	0.00112	0.45	<0.001	<0.05	0.39	<0.001

Table 8
Old API Separator Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	SWMU 14-1 (0-0.5)	SWMU 14-1 (1.5-2)	SWMU 14-1 (10-12)	SWMU 14-1 (48-50')	SWMU 14-2 (0-0.5')	SWMU 14-2 (1.5-2.0')	SWMU 14-2 (16-18')	SWMU 14-2 (24-25')	SWMU 14-2 (8-10')	SWMU 14-3 (0-0.5')	SWMU 14-3 (1.5-2')	SWMU 14-3 (12-14')	SWMU 14-3 (25.5-26')
									1207748-001 7/16/2012	1207748-002 7/16/2012	1207748-003 7/16/2012	1207900-006 7/18/2012	1207917-005 7/17/2012	1207917-006 7/17/2012	1207917-009 7/17/2012	1207917-010 7/17/2012	1207917-007 7/17/2012	1207900-001 7/18/2012	1207900-002 7/18/2012	1207900-004 7/18/2012	1207900-005 7/18/2012
4-Methyl-2-pentanone	5.30E+03	(2)	5.30E+04	(5)	1.06E+02	(8)	1.06E+02	-	<0.002	<0.002	<0.002	<0.002	<0.5	<10	<0.005	<0.005	<10	<0.002	<0.5	<10	<0.002
Acetone	6.66E+04	(1)	2.21E+05	(4)	1.78E+03	(8)	1.78E+03	-	0.00305	0.003	0.00688	0.0065	<0.75	3.9	0.00794	0.0121	8.5	0.00398	0.027	9.3	0.00437
Benzene	1.54E+01	(1)	1.38E+02	(4)	7.96E-01	(8)	7.96E-01	-	<0.001	<0.001	<0.001	<0.001	<0.05	0.1	<0.001	<0.001	0.22	<0.001	0.0068	0.14	<0.001
Bromobenzene	3.00E+02	(2)	1.80E+03	(5)	1.66E+01	(8)	1.66E+01	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
Bromodichloromethane	5.41E+00	(1)	1.43E+02	(4)	1.25E-01	(8)	1.25E-01	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
Bromoform	6.16E+02	(1)	4.76E+03	(4)	2.78E+02	(8)	2.78E+02	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
Bromomethane	1.65E+01	(1)	1.64E+01	(4)	8.86E-01	(8)	8.86E-01	-	-	-	-	-	<0.15	<3	-	-	<3	-	<0.15	<3	-
Carbon disulfide	1.53E+03	(1)	1.58E+03	(4)	1.30E+02	(8)	1.30E+02	-	<0.002	<0.002	<0.002	<0.002	0.025	<10	<0.005	<0.005	<10	<0.002	<0.5	<10	<0.002
Carbon tetrachloride	1.08E+01	(1)	2.26E+02	(4)	7.39E-01	(8)	7.39E-01	-	<0.001	<0.001	<0.001	<0.001	<0.1	<2	<0.001	<0.001	<2	<0.001	<0.1	<2	<0.001
Chlorobenzene	3.76E+02	(1)	4.06E+02	(4)	2.27E+01	(8)	2.27E+01	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
Chloroethane	2.98E+04	(1)	2.61E+04	(4)	2.48E+03	(8)	2.48E+03	-	<0.001	<0.001	<0.001	<0.001	<0.1	<2	<0.001	<0.001	<2	<0.001	<0.1	<2	<0.001
Chloroform	5.86E+00	(1)	1.54E+02	(4)	2.12E-01	(8)	2.12E-01	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
Chloromethane	2.75E+02	(1)	2.41E+02	(4)	2.03E+01	(8)	2.03E+01	-	<0.001	<0.001	<0.001	0.000764	0.013	<3	<0.001	<0.001	<3	<0.001	<0.15	<3	0.000433
cis-1,2-DCE	1.56E+02	(1)	6.19E+02	(4)	8.47E+00	(8)	8.47E+00	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
cis-1,3-Dichloropropene	3.37E+01	(1)	2.09E+02	(4)	5.71E-01	(8)	5.71E-01	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
Dibromochloromethane	1.21E+01	(1)	3.32E+02	(4)	1.52E-01	(8)	1.52E-01	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
Dibromomethane	5.16E+01	(1)	3.10E+03	(4)	7.89E-01	(8)	7.89E-01	-	<0.001	<0.001	<0.001	<0.001	<0.1	<2	<0.001	<0.001	<2	<0.001	<0.1	<2	<0.001
Dichlorodifluoromethane	1.68E+02	(1)	1.49E+02	(4)	1.71E+02	(8)	1.49E+02	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
Ethylbenzene	6.84E+01	(1)	1.83E+03	(4)	5.98E+00	(8)	5.98E+00	-	<0.001	<0.001	<0.001	<0.001	<0.05	0.19	<0.001	0.000973	1.1	<0.001	<0.05	0.84	<0.001
Hexachlorobutadiene	6.11E+01	(1)	2.38E+02	(4)	5.91E+00	(8)	5.91E+00	-	<0.001	<0.001	<0.001	<0.001	<0.1	<2	<0.001	<0.001	<2	<0.001	<0.1	<2	<0.001
Isopropylbenzene	2.43E+03	(1)	2.81E+03	(4)	3.99E+02	(8)	3.99E+02	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	0.000758	0.33	<0.001	<0.05	0.28	<0.001
Methyl tert-butyl ether (MTBE)	9.01E+02	(1)	2.49E+04	(4)	1.11E+01	(8)	1.11E+01	-	<0.001	<0.001	0.0131	<0.001	<0.05	<1	<0.002	<0.002	<1	<0.001	<0.05	<1	<0.001
Methylene chloride	4.09E+02	(1)	1.12E+03	(4)	1.90E+01	(8)	1.90E+01	-	0.00171	0.00159	0.00197	<0.002	<0.15	<3	<0.005	<0.005	<3	<0.002	0.0078	0.14	<0.002
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	1.64E+00	(8)	1.64E+00	-	<0.001	<0.001	<0.001	<0.001	<0.1	1.2	<0.001	0.00334	3	<0.001	0.013	2.2	<0.001
n-Butylbenzene	3.90E+03	(2)	5.10E+04	(5)	1.15E+03	(8)	1.15E+03	-	<0.001	<0.001	<0.001	<0.001	<0.05	0.27	<0.001	0.00168	0.66	<0.001	<0.05	0.67	<0.001
n-Propylbenzene	3.40E+03	(2)	2.10E+04	(5)	4.56E+02	(8)	4.56E+02	-	<0.001	<0.001	<0.001	<0.001	<0.05	0.16	<0.001	0.00203	0.69	<0.001	<0.05	0.56	<0.001
sec-Butylbenzene	-	-	-	-	-	-	-	-	<0.001	<0.001	0.000388	<0.001	<0.05	0.15	<0.001	0.000903	0.34	<0.001	<0.05	0.29	<0.001
Styrene	7.28E+03	(1)	9.99E+03	(4)	6.40E+02	(8)	6.40E+02	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
tert-Butylbenzene	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
Tetrachloroethene (PCE)	7.02E+00	(1)	2.12E+02	(4)	1.98E-01	(8)	1.98E-01	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
Toluene	5.27E+03	(1)	1.34E+04	(4)	5.84E+02	(8)	5.84E+02	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
trans-1,2-DCE	2.70E+02	(1)	2.73E+02	(4)	1.24E+01	(8)	1.24E+01	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
Trichloroethene (TCE)	8.77E+00	(1)	7.68E+00	(4)	4.85E-01	(8)	4.85E-01	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
Trichlorofluoromethane	1.41E+03	(1)	1.30E+03	(4)	4.10E+02	(8)	4.10E+02	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	0.000331	<1	<0.001	<0.05	<1	<0.001
Vinyl chloride	7.28E-01	(1)	1.49E+02	(4)	2.50E-02	(8)	2.50E-02	-	<0.001	<0.001	<0.001	<0.001	<0.05	<1	<0.001	<0.001	<1	<0.001	<0.05	<1	<0.001
Xylenes, Total	8.14E+02	(1)	7.43E+02	(4)	7.21E+01	(8)	7.21E+01	-	<0.002	<0.002	<0.002	<0.002	<0.1	0.34	<0.003	<0.003	1	<0.002	<0.1	0.34	<0.002
Semi Volatile Organics - (EPA Method 8270) mg/kg																					
1,2,4-Trichlorobenzene	7.30E+01	(1)	6.87E+01	(4)	4.21E+00	(8)	4.21E+00	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
1,2-Dichlorobenzene	2.31E+03	(1)	2.71E+03	(4)	1.29E+02	(8)	1.29E+02	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
1,4-Dichlorobenzene	3.17E+01	(1)	8.31E+02	(4)	1.47E+00	(8)	1.47E+00	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
1-Methylnaphthalene	1.60E+02	(3)	5.30E+01	(6)	2.35E+00	(8)	2.35E+00	-	<0.997	<1.001	0.49	<0.199	<0.198	5.9	<0.199	<0.2	16	<1.003	<0.998	9.2	<0.199
2,4,5-Trichlorophenol	6.11E+03	(1)	2.38E+04	(4)	4.78E+03	(8)	4.78E+03	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
2,4,6-Trichlorophenol	6.11E+01	(1)	2.38E+02	(4)	4.78E+01	(8)	4.78E+01	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
2,4-Dichlorophenol	1.83E+02	(1)	7.15E+02	(4)	4.60E+01	(8)	4.60E+01	-	<1.993	<2.002	<0.399	<0.398	<0.397	<1.991	<0.398	<0.4	<2.024	<2.005	<1.995	<2.006	<0.397
2,4-Dimethylphenol	1.22E+03	(1)	4.76E+03	(4)	3.07E+02	(8)	3.07E+02	-	<1.495	<1.502	<0.299	<0.298	<0.298	<1.494	<0.299	<0.3	<1.518	<1.504	<1.497	<1.505	<0.298
2,4-Dinitrophenol	1.22E+02	(1)	4.76E+02	(4)	2.91E+01	(8)	2.91E+01	-	0.45	0.45	<0.399	0.091	<0.397	0.56	<0.398	0.093	<2.024	0.46	0.45	<2.006	<0.397

Table 8
Old API Separator Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	SWMU 14-1 (0-0.5)	SWMU 14-1 (1.5-2)	SWMU 14-1 (10-12)	SWMU 14-1 (48-50')	SWMU 14-2 (0-0.5')	SWMU 14-2 (1.5-2.0')	SWMU 14-2 (16-18')	SWMU 14-2 (24-25')	SWMU 14-2 (8-10')	SWMU 14-3 (0-0.5')	SWMU 14-3 (1.5-2')	SWMU 14-3 (12-14')	SWMU 14-3 (25.5-26')
									1207748-001	1207748-002	1207748-003	1207900-006	1207917-005	1207917-006	1207917-009	1207917-010	1207917-007	1207900-001	1207900-002	1207900-004	1207900-005
									7/16/2012	7/16/2012	7/16/2012	7/18/2012	7/17/2012	7/17/2012	7/17/2012	7/17/2012	7/17/2012	7/18/2012	7/18/2012	7/18/2012	7/18/2012
2,4-Dinitrotoluene	1.57E+01	(1)	4.76E+02	(4)	1.04E+00	(8)	1.04E+00	-	<2.492	<2.503	<0.498	<0.497	<0.496	<2.489	<0.498	<0.5	<2.53	<2.507	<2.494	<2.508	<0.497
2,6-Dinitrotoluene	6.11E+01	(1)	2.38E+02	(4)	1.77E+01	(8)	1.77E+01	-	<2.492	<2.503	<0.498	<0.497	<0.496	<2.489	<0.498	<0.5	<2.53	<2.507	<2.494	<2.508	<0.497
2-Chloronaphthalene	6.11E+01	(1)	2.94E+02	(4)	4.01E-01	(8)	4.01E-01	-	<1.246	<1.251	<0.249	<0.249	<0.248	<1.245	<0.249	<0.25	<1.265	<1.253	<1.247	<1.254	<0.248
2-Chlorophenol	3.91E+02	(1)	1.55E+03	(4)	5.33E+01	(8)	5.33E+01	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	6.45E+01	(8)	6.45E+01	-	<0.997	<1.001	<0.199	<0.199	<0.198	6.4	<0.199	<0.2	16	<1.003	<0.998	6	<0.199
2-Methylphenol	3.10E+03	(2)	3.10E+04	(5)	2.67E+02	(8)	2.67E+02	-	<2.492	<2.503	<0.498	<0.497	<0.496	<2.489	<0.498	<0.5	<2.53	<2.507	<2.494	<2.508	<0.497
2-Nitroaniline	6.10E+02	(2)	6.00E+03	(5)	2.86E+01	(8)	2.86E+01	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
2-Nitrophenol	-	-	-	-	-	-	-	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
3,3'-Dichlorobenzidine	1.08E+01	(1)	3.64E+02	(4)	3.41E+00	(8)	3.41E+00	-	<1.246	<1.251	<0.249	<0.249	<0.248	<1.245	<0.249	<0.25	<1.265	<1.253	<1.247	<1.254	<0.248
3+4-Methylphenol	-	-	-	-	-	-	-	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
3-Nitroaniline	-	-	-	-	-	-	-	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
4,6-Dinitro-2-methylphenol	4.90E+00	(2)	4.90E+01	(5)	9.22E-01	(8)	9.22E-01	-	<2.492	<2.503	<0.498	<0.497	<0.496	<2.489	<0.498	<0.5	<2.53	<2.507	<2.494	<2.508	<0.497
4-Bromophenyl phenyl ether	-	-	-	-	-	-	-	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
4-Chloro-3-methylphenol	6.10E+03	(2)	6.20E+04	(5)	5.99E+02	(8)	5.99E+02	-	<2.492	<2.503	<0.498	<0.497	<0.496	<2.489	<0.498	<0.5	<2.53	<2.507	<2.494	<2.508	<0.497
4-Chloroaniline	2.40E+01	(3)	8.60E+00	(6)	5.99E-02	(8)	5.99E-02	-	<2.492	<2.503	<0.498	<0.497	<0.496	<2.489	<0.498	<0.5	<2.53	<2.507	<2.494	<2.508	<0.497
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	-	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
4-Nitroaniline	2.40E+02	(3)	8.60E+01	(6)	6.45E-01	(8)	6.45E-01	-	<1.993	<2.002	<0.399	<0.398	<0.397	<1.991	<0.398	<0.4	<2.024	<2.005	<1.995	<2.006	<0.397
4-Nitrophenol	-	-	-	-	-	-	-	-	<1.246	<1.251	<0.249	<0.249	<0.248	<1.245	<0.249	<0.25	<1.265	<1.253	<1.247	<1.254	<0.248
Acenaphthene	3.44E+03	(1)	1.86E+04	(4)	7.79E+03	(8)	3.44E+03	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Acenaphthylene	-	-	-	-	-	-	-	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Aniline	8.50E+02	(3)	3.00E+02	(6)	1.80E+00	(8)	1.80E+00	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Anthracene	1.72E+04	(1)	6.68E+04	(4)	1.25E+05	(8)	1.72E+04	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Azobenzene	5.10E+01	(3)	2.30E+01	(6)	3.69E-01	(8)	3.69E-01	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Benz(a)anthracene	1.48E+00	(1)	2.13E+02	(4)	3.61E+01	(8)	1.48E+00	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Benzo(a)pyrene	1.48E-01	(1)	2.13E+01	(4)	1.20E+01	(8)	1.48E-01	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Benzo(b)fluoranthene	1.48E+00	(1)	2.13E+02	(4)	1.22E+02	(8)	1.48E+00	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Benzo(g,h,i)perylene	-	-	-	-	-	-	-	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Benzo(k)fluoranthene	1.48E+01	(1)	2.06E+03	(4)	1.20E+03	(8)	1.48E+01	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Benzoic acid	2.40E+05	(2)	2.50E+06	(5)	6.45E+03	(8)	6.45E+03	-	<2.492	<2.503	<0.498	<0.497	<0.496	<2.489	<0.498	0.088	<2.53	<2.507	0.52	1.7	<0.497
Benzyl alcohol	6.10E+03	(2)	6.20E+04	(5)	1.71E+02	(8)	1.71E+02	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Bis(2-chloroethoxy)methane	1.80E+02	(2)	1.80E+03	(5)	5.07E+00	(8)	5.07E+00	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Bis(2-chloroethyl)ether	2.68E+00	(1)	7.78E+01	(4)	1.21E-02	(8)	1.21E-02	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Bis(2-chloroisopropyl)ether	9.15E+01	(1)	3.10E+03	(4)	1.07E+00	(8)	1.07E+00	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Bis(2-ethylhexyl)phthalate	3.47E+02	(1)	4.76E+03	(4)	3.97E+03	(8)	3.47E+02	-	<2.492	<2.503	<0.498	<0.497	<0.496	<2.489	0.11	<0.5	<2.53	<2.507	<2.494	<2.508	<0.497
Butyl benzyl phthalate	2.60E+03	(3)	9.10E+02	(6)	9.22E+01	(8)	9.22E+01	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Carbazole	-	-	-	-	-	-	-	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Chrysene	1.48E+02	(1)	2.06E+04	(4)	3.68E+03	(8)	1.48E+02	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Dibenz(a,h)anthracene	1.48E-01	(1)	2.13E+01	(4)	3.90E+01	(8)	1.48E-01	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Dibenzofuran	7.80E+01	(2)	1.00E+03	(5)	5.07E+01	(8)	5.07E+01	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Diethyl phthalate	4.89E+04	(1)	1.91E+05	(4)	4.45E+03	(8)	4.45E+03	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(4)	3.71E+04	(8)	3.71E+04	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Di-n-butyl phthalate	6.11E+03	(1)	2.38E+04	(4)	3.21E+03	(8)	3.21E+03	-	<2.492	<2.503	<0.498	<0.497	<0.496	<2.489	<0.498	<0.5	<2.53	<2.507	<2.494	<2.508	<0.497
Di-n-octyl phthalate	-	-	-	-	-	-	-	-	<1.246	<1.251	<0.249	<0.249	<0.248	<1.245	<0.249	<0.25	<1.265	<1.253	<1.247	<1.254	<0.248
Fluoranthene	2.29E+03	(1)	8.91E+03	(4)	5.61E+04	(8)	2.29E+03	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Fluorene	2.29E+03	(1)	8.91E+03	(4)	9.36E+03	(8)	2.29E+03	-	<0.997	<1.001	<0.199	<0.199	<0.198	1.8	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Hexachlorobenzene	3.04E+00	(1)	1.03E+02	(4)	1.83E+00	(8)	1.83E+00	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Hexachlorobutadiene	6.11E+01	(1)	2.38E+02	(4)	5.91E+00	(8)	5.91E+00	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Hexachlorocyclopentadiene	3.67E+02	(1)	8.11E+02	(4)	2.43E+02	(8)	2.43E+02	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199

Table 8
Old API Separator Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	SWMU 14-1 (0-0.5)	SWMU 14-1 (1.5-2)	SWMU 14-1 (10-12)	SWMU 14-1 (48-50')	SWMU 14-2 (0-0.5')	SWMU 14-2 (1.5-2.0')	SWMU 14-2 (16-18')	SWMU 14-2 (24-25')	SWMU 14-2 (8-10')	SWMU 14-3 (0-0.5')	SWMU 14-3 (1.5-2')	SWMU 14-3 (12-14')	SWMU 14-3 (25.5-26')
									1207748-001 7/16/2012	1207748-002 7/16/2012	1207748-003 7/16/2012	1207900-006 7/18/2012	1207917-005 7/17/2012	1207917-006 7/17/2012	1207917-009 7/17/2012	1207917-010 7/17/2012	1207917-007 7/17/2012	1207900-001 7/18/2012	1207900-002 7/18/2012	1207900-004 7/18/2012	1207900-005 7/18/2012
Hexachloroethane	4.28E+01	(1)	1.67E+02	(4)	3.77E+00	(8)	3.77E+00	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Indeno(1,2,3-cd)pyrene	1.48E+00	(1)	2.13E+02	(4)	3.98E+02	(8)	1.48E+00	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Isophorone	5.12E+03	(1)	4.75E+04	(4)	8.84E+01	(8)	8.84E+01	-	<2.492	<2.503	<0.498	<0.497	<0.496	<2.489	<0.498	<0.5	<2.53	<2.507	<2.494	<2.508	<0.497
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	1.64E+00	(8)	1.64E+00	-	<0.997	<1.001	<0.199	<0.199	<0.198	1	<0.199	<0.2	2.5	<1.003	<0.998	0.71	<0.199
Nitrobenzene	5.35E+01	(1)	3.32E+02	(4)	2.88E-01	(8)	2.88E-01	-	<2.492	<2.503	<0.498	<0.497	<0.496	<2.489	<0.498	<0.5	<2.53	<2.507	<2.494	<2.508	<0.497
N-Nitrosodi-n-propylamine	6.90E-01	(3)	2.50E-01	(6)	3.23E-03	(8)	3.23E-03	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
N-Nitrosodiphenylamine	9.93E+02	(1)	3.36E+04	(4)	2.61E+02	(8)	2.61E+02	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Pentachlorophenol	8.94E+00	(1)	3.10E+02	(4)	5.90E+00	(8)	5.90E+00	-	<1.993	<2.002	<0.399	<0.398	<0.397	<1.991	<0.398	<0.4	<2.024	<2.005	<1.995	<2.006	<0.397
Phenanthrene	1.83E+03	(1)	7.15E+03	(4)	1.32E+04	(8)	1.83E+03	-	<0.997	<1.001	0.57	<0.199	<0.198	3.2	<0.199	<0.2	3	<1.003	<0.998	2.2	<0.199
Phenol	1.83E+04	(1)	6.88E+04	(4)	2.29E+03	(8)	2.29E+03	-	<0.997	<1.001	<0.199	<0.199	<0.198	<0.996	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Pyrene	1.72E+03	(1)	6.68E+03	(4)	4.12E+04	(8)	1.72E+03	-	<0.997	<1.001	<0.199	<0.199	<0.198	0.93	<0.199	<0.2	<1.012	<1.003	<0.998	<1.003	<0.199
Pyridine	7.80E+01	(2)	1.00E+03	(5)	2.44E+00	(8)	2.44E+00	-	<2.492	<2.503	<0.498	<0.497	<0.496	<2.489	<0.498	<0.5	<2.53	<2.507	<2.494	<2.508	<0.497
Total Petroleum Hydrocarbons - (EPA Method 8015B) mg/kg																					
Diesel Range Organics (DRO)	1.00E+03	(10)	1.00E+03	(10)	1.00E+03	(10)	-	-	33	30	220	<10	53	**6200**	34	<10	**3300**	640	280	920	<10
Gasoline Range Organics (GRO)	-	-	-	-	-	-	-	-	<5	<5	1.7	<5	2.8	150	1.3	<5	210	<20	<10	90	<5
Motor Oil Range Organics (MRO)	3.00E+03	(11)	3.00E+03	(11)	3.00E+03	(11)	-	-	<49	<50	<50	<51	<50	<980	<48	<51	<974	<995	310	<964	<49

-- No screening level or analytical result available

NMED - Risk Assessment Guidance for Site Investigations and Remediation (June 14, 2012)

EPA - Regional Screening Levels (November 2012)

(1) NMED Residential Screening Level

(2) EPA Residential Screening Level

(3) EPA Residential - Screening Levels (November 2012) multiplied by 10 because the constituent is listed as carcinogenic

(4) NMED Construction Worker Screening Level

(5) EPA Industrial - Screening Levels (Nov. 2012)

(6) EPA Industrial - Screening Levels (Nov. 2012) multiplied by 10

(7) SoilGW NMED Dilution Attenuation Factor (DAF) = 461

(8) SoilGW Risk-based EPA DAF = 461

(9) SoilGW MCL-based EPA DAF = 461

(10) NMED Table 6-2 TPH Screening Guidelines for Potable Groundwater "uknown oil" with DAF = 1.0 - see report Section 5 for use of screening levels

(11) NMED Table 6-2 TPH Screening Guidelines for Potable Groundwater "waste oil" with DAF = 1.0 - see report Section 5 for use of screening levels

(12) Background concentrations to be determined.

Bold represents value above Residential Screening Level

yellow highlight represents value above Leachate (DAF) Screening Level

Bold with yellow - value exceeds Residential Screening Level and

Table 8
Old API Separator Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	SWMU 14-3 (8-10')	SWMU 14-4 (0-0.5')	SWMU 14-4 (1.5-2.0')	SWMU 14-4 (10-12')	SWMU 14-4 (19.5-20')	SWMU 14-5 (0-0.5')	SWMU 14-5 (1.5-2.0')	SWMU 14-6 (0-0.5')	SWMU 14-6 (1.5-2')	SWMU 14-6 (10-12')	SWMU 14-6 (17-18')	SWMU 14-7 (0-0.5')	SWMU 14-7 (1.5-2')
									1207900-003 7/18/2012	1207917-001 7/17/2012	1207917-002 7/17/2012	1207917-003 7/17/2012	1207917-004 7/17/2012	1207940-016 7/19/2012	1207940-018 7/19/2012	1210582-001 10/9/2012	1210582-002 10/9/2012	1210582-003 10/9/2012	1210582-004 10/9/2012	1207922-006 7/18/2012	1207922-007 7/18/2012
Metals (mg/kg)																					
Antimony	3.13E+01	(1)	1.24E+02	(4)	3.05E+02	(8)	3.13E+01	-	<12.5	<2.5	<2.5	<12.5	<12.5	<12.5	3.4	<12.5	<12.5	<12.5	<12.5	5.3	<12.501
Arsenic	3.90E+00	(1)	5.30E+01	(4)	6.05E+00	(8)	3.90E+00	-	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.501
Barium	1.56E+04	(1)	4.35E+03	(4)	1.39E+05	(8)	4.35E+03	-	380	870	870	460	480	490	340	350	330	340	290	650	550
Beryllium	1.56E+02	(1)	1.44E+02	(4)	2.66E+04	(8)	1.44E+02	-	0.8	0.33	0.51	0.86	1.3	0.68	0.61	1	0.78	0.83	0.87	0.76	0.68
Cadmium	7.03E+01	(1)	2.77E+02	(4)	6.33E+02	(8)	7.03E+01	-	<0.5	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium III	1.17E+05	(1)	4.65E+05	(4)	4.54E+10	(8)	1.17E+05	-	100	3.4	5.2	12	22	63	11	9.7	23	9.1	8.9	9.6	7.1
Chromium VI	2.97E+00	(1)	6.56E+01	(4)	3.83E+00	(8)	2.97E+00	-	100	3.4	5.2	12	22	63	11	9.7	23	9.1	8.9	9.6	7.1
Cobalt	2.30E+01	(2)	3.00E+02	(5)	9.68E+01	(8)	2.30E+01	-	5.6	2.5	2.7	5	8	5.3	4.6	5	4.5	4.7	5.6	4.1	3.7
Cyanide	4.69E+01	(1)	1.86E+02	(4)	1.02E+02	(8)	4.69E+01	-	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.3	<0.3	<0.3	<0.3	<0.5	<0.5
Iron	5.48E+04	(1)	2.17E+05	(4)	2.98E+05	(8)	5.48E+04	-	14000	3200	7500	16000	23000	18000	13000	15000	13000	13000	16000	15000	11000
Lead	4.00E+02	(1)	8.00E+02	(4)	6.45E+03	(8)	4.00E+02	-	11	<0.25	0.37	2.4	1.4	14	2.5	6.4	5.6	4.5	2.9	3.5	3.2
Manganese	1.86E+03	(1)	4.40E+02	(4)	2.64E+04	(8)	4.40E+02	-	350	320	340	720	1000	550	450	420	370	340	1100	600	1100
Mercury	1.56E+01	(1)	1.36E+01	(4)	1.51E+01	(8)	1.36E+01	-	0.65	0.014	0.017	<0.033	<0.033	0.27	0.011	<0.033	0.095	<0.033	<0.033	0.0068	<0.033
Nickel	1.56E+03	(1)	6.19E+03	(4)	2.20E+04	(8)	1.56E+03	-	9.3	3.1	4.4	8.6	17	9.8	7.1	8.2	7.1	7.6	11	6.8	5.6
Selenium	3.91E+02	(1)	1.55E+03	(4)	4.45E+02	(8)	3.91E+02	-	<12.5	<2.5	<2.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.501
Silver	3.91E+02	(1)	1.55E+03	(4)	7.22E+02	(8)	3.91E+02	-	<1.25	<0.25	<0.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25
Vanadium	3.91E+02	(1)	1.55E+03	(4)	8.42E+04	(8)	3.91E+02	-	29	17	13	25	15	26	26	17	23	21	<12.5	22	18
Zinc	2.35E+04	(1)	9.29E+04	(4)	3.14E+05	(8)	2.35E+04	-	67	8.3	10	22	25	190	20	17	26	16	17	30	12
Volatile Organic Compounds - (EPA Method 8260) mg/kg																					
1,1,1,2-Tetrachloroethane	2.91E+01	(1)	7.79E+02	(4)	7.59E-01	(8)	7.59E-01	-	<1	<0.001	<0.001	<1	<0.001	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	<0.001
1,1,1-Trichloroethane	1.56E+04	(1)	1.48E+04	(4)	1.34E+03	(8)	1.34E+03	-	<1	<0.001	<0.001	<1	<0.001	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	<0.001
1,1,2,2-Tetrachloroethane	8.02E+00	(1)	2.21E+02	(4)	9.82E-02	(8)	9.82E-02	-	<1	<0.001	<0.001	<1	<0.001	0.00104	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	<0.001
1,1,2-Trichloroethane	2.81E+00	(1)	4.72E+02	(4)	5.14E-02	(8)	5.14E-02	-	<1	<0.001	<0.001	<1	<0.001	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	<0.001
1,1-Dichloroethane	6.45E+01	(1)	1.70E+03	(4)	2.75E+00	(8)	2.75E+00	-	<2	<0.001	<0.001	<2	<0.001	<0.001	<0.1	<0.001	<0.0008	<1	<0.0011	<2	<0.001
1,1-Dichloroethene	4.49E+02	(1)	4.32E+02	(4)	5.36E+01	(8)	5.36E+01	-	<1	<0.001	<0.001	<1	<0.001	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	<0.001
1,1-Dichloropropene	-	-	-	-	-	-	-	-	<2	<0.001	<0.001	<2	<0.001	<0.001	<0.1	<0.001	<0.0008	<1	<0.0011	<2	<0.001
1,2,3-Trichlorobenzene	4.90E+01	(2)	4.90E+02	(5)	6.92E+00	(8)	6.92E+00	-	<2	<0.001	<0.001	<2	<0.001	<0.001	<0.1	<0.001	<0.0008	<1	<0.0011	<2	<0.001
1,2,3-Trichloropropane	4.97E-02	(1)	7.23E+00	(4)	1.15E-03	(8)	1.15E-03	-	<2	<0.001	<0.001	<2	<0.001	<0.001	<0.1	<0.001	<0.0008	<1	<0.0011	<2	<0.001
1,2,4-Trichlorobenzene	7.30E+01	(1)	6.87E+01	(4)	4.21E+00	(8)	4.21E+00	-	<1	<0.001	<0.001	<1	<0.001	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	<0.001
1,2,4-Trimethylbenzene	6.20E+01	(2)	2.60E+02	(5)	9.68E+00	(8)	9.68E+00	-	6.2	<0.001	<0.001	7.8	<0.001	<0.001	<0.05	0.00104	<0.0008	13	0.00148	0.32	0.00562
1,2-Dibromo-3-chloropropane	1.86E+00	(1)	5.07E+00	(4)	5.07E-04	(8)	5.07E-04	-	<2	<0.002	<0.002	<2	<0.002	<0.002	<0.1	<0.001	<0.0008	<1	<0.0011	0.18	0.000593
1,2-Dibromoethane (EDB)	5.88E-01	(1)	1.60E+01	(4)	7.10E-03	(8)	7.10E-03	-	0.36	<0.001	<0.001	0.3	<0.001	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	0.22	<0.001
1,2-Dichlorobenzene	2.31E+03	(1)	2.71E+03	(4)	1.29E+02	(8)	1.29E+02	-	<1	<0.001	<0.001	<1	<0.001	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	<0.001
1,2-Dichloroethane (EDC)	7.89E+00	(1)	5.87E+01	(4)	1.64E-01	(8)	1.64E-01	-	<1	<0.001	<0.001	<1	<0.001	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	<0.001
1,2-Dichloropropane	1.52E+01	(1)	2.50E+01	(4)	4.94E-01	(8)	4.94E-01	-	0.17	<0.002	<0.002	0.15	<0.002	<0.002	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	<0.002
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.00E+04	(5)	5.53E+01	(8)	5.53E+01	-	0.49	<0.001	<0.001	1.7	<0.001	<0.001	<0.05	<0.001	<0.0008	4.2	<0.0011	0.19	0.00487
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	<1	<0.001	<0.001	<1	<0.001	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	<0.001
1,3-Dichloropropane	1.60E+03	(2)	2.00E+04	(5)	4.56E+01	(8)	4.56E+01	-	<1	<0.001	<0.001	<1	<0.001	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	<0.001
1,4-Dichlorobenzene	3.17E+01	(1)	8.31E+02	(4)	1.47E+00	(8)	1.47E+00	-	<1	<0.001	<0.001	<1	<0.001	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	<0.001
1-Methylnaphthalene	1.60E+02	(3)	5.30E+01	(6)	2.35E+00	(8)	2.35E+00	-	18	<0.004	<0.003	45	<0.004	<0.005	0.021	<0.004	<0.0032	14	<0.0043	0.66	0.00502
2,2-Dichloropropane	-	-	-	-	-	-	-	-	<2	<0.001	<0.001	<2	<0.001	<0.001	<0.1	<0.001	<0.0008	<1	<0.0011	<2	<0.001
2-Butanone (MEK)	3.71E+04	(1)	8.43E+04	(4)	5.87E+02	(8)	5.87E+02	-	<10	<0.005	0.000987	<10	0.00143	<0.006	<0.5	<0.0101	<0.0081	<5	<0.0108	<10	<0.002
2-Chlorotoluene	1.56E+03	(1)	6.19E+03	(4)	2.57E+02	(8)	2.57E+02	-	<1	<0.001	<0.001	<1	<0.001	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	0.12	<0.001
2-Hexanone	9.38E+02	(1)	9.73E+02	(4)	3.53E+03	(8)	9.38E+02	-	<10	<0.005	<0.004	<10	<0.005	<0.006	<0.5	<0.0101	<0.0081	<5	<0.0108	<10	<0.002
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	6.45E+01	(8)	6.45E+01	-	23	<0.004	<0.003	90	<0.004	<0.005	0.024	<0.004	<0.0032	25	<0.0043	0.67	0.00402
4-Chlorotoluene	1.60E+03	(2)	2.00E+04	(5)	8.30E+01	(8)	8.30E+01	-	<1	<0.001	<0.001	<1	<0.001	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	<0.001
4-Isopropyltoluene	-	-	-	-	-	-	-	-	0.49	<0.001	<0.001	0.53	<0.001	<0.001	<0.05	<0.001	<0.0008	0.57	<0.0011	0.095	0.0017

Table 8
Old API Separator Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	SWMU 14-3 (8-10')	SWMU 14-4 (0-0.5')	SWMU 14-4 (1.5-2.0')	SWMU 14-4 (10-12')	SWMU 14-4 (19.5-20')	SWMU 14-5 (0-0.5')	SWMU 14-5 (1.5-2.0')	SWMU 14-6 (0-0.5')	SWMU 14-6 (1.5-2')	SWMU 14-6 (10-12')	SWMU 14-6 (17-18')	SWMU 14-7 (0-0.5')	SWMU 14-7 (1.5-2')
									1207900-003 7/18/2012	1207917-001 7/17/2012	1207917-002 7/17/2012	1207917-003 7/17/2012	1207917-004 7/17/2012	1207940-016 7/19/2012	1207940-018 7/19/2012	1210582-001 10/9/2012	1210582-002 10/9/2012	1210582-003 10/9/2012	1210582-004 10/9/2012	1207922-006 7/18/2012	1207922-007 7/18/2012
4-Methyl-2-pentanone	5.30E+03	(2)	5.30E+04	(5)	1.06E+02	(8)	1.06E+02	-	<10	<0.005	<0.004	<10	<0.005	<0.006	<0.5	<0.0101	<0.0081	<5	<0.0108	<10	<0.002
Acetone	6.66E+04	(1)	2.21E+05	(4)	1.78E+03	(8)	1.78E+03	-	8.9	<0.028	0.0222	6.5	0.00793	0.0181	0.11	0.0973	0.0187	<7.5	<0.0108	3.7	<0.009
Benzene	1.54E+01	(1)	1.38E+02	(4)	7.96E-01	(8)	7.96E-01	-	0.14	<0.001	<0.001	0.34	<0.001	<0.001	<0.05	0.00291	<0.0008	0.96	0.00909	<1	0.0126
Bromobenzene	3.00E+02	(2)	1.80E+03	(5)	1.66E+01	(8)	1.66E+01	-	<1	<0.001	<0.001	<1	<0.001	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	<0.001
Bromodichloromethane	5.41E+00	(1)	1.43E+02	(4)	1.25E-01	(8)	1.25E-01	-	<1	<0.001	<0.001	<1	<0.001	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	<0.001
Bromoform	6.16E+02	(1)	4.76E+03	(4)	2.78E+02	(8)	2.78E+02	-	<1	<0.001	<0.001	<1	<0.001	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	<0.001
Bromomethane	1.65E+01	(1)	1.64E+01	(4)	8.86E-01	(8)	8.86E-01	-	<3	-	-	<3	-	-	<0.15	<0.001	<0.0008	<1.5	<0.0011	<3	-
Carbon disulfide	1.53E+03	(1)	1.58E+03	(4)	1.30E+02	(8)	1.30E+02	-	<10	<0.005	<0.004	<10	<0.005	<0.006	<0.5	<0.0101	<0.0081	<5	<0.0108	<10	0.000629
Carbon tetrachloride	1.08E+01	(1)	2.26E+02	(4)	7.39E-01	(8)	7.39E-01	-	<2	<0.001	<0.001	<2	<0.001	<0.001	<0.1	<0.001	<0.0008	<1	<0.0011	<2	<0.001
Chlorobenzene	3.76E+02	(1)	4.06E+02	(4)	2.27E+01	(8)	2.27E+01	-	<1	<0.001	<0.001	<1	<0.001	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	0.000323
Chloroethane	2.98E+04	(1)	2.61E+04	(4)	2.48E+03	(8)	2.48E+03	-	<2	<0.001	<0.001	<2	<0.001	<0.001	<0.1	<0.001	<0.0008	<1	<0.0011	<2	<0.001
Chloroform	5.86E+00	(1)	1.54E+02	(4)	2.12E-01	(8)	2.12E-01	-	<1	<0.001	<0.001	<1	<0.001	<0.001	0.006	<0.001	<0.0008	<0.5	<0.0011	<1	<0.001
Chloromethane	2.75E+02	(1)	2.41E+02	(4)	2.03E+01	(8)	2.03E+01	-	<3	<0.001	<0.001	<3	<0.001	<0.001	<0.15	<0.001	<0.0008	<1.5	<0.0011	<3	<0.001
cis-1,2-DCE	1.56E+02	(1)	6.19E+02	(4)	8.47E+00	(8)	8.47E+00	-	<1	<0.001	<0.001	<1	<0.001	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	<0.001
cis-1,3-Dichloropropene	3.37E+01	(1)	2.09E+02	(4)	5.71E-01	(8)	5.71E-01	-	<1	<0.001	<0.001	<1	<0.001	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	<0.001
Dibromochloromethane	1.21E+01	(1)	3.32E+02	(4)	1.52E-01	(8)	1.52E-01	-	<1	<0.001	<0.001	<1	<0.001	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	<0.001
Dibromomethane	5.16E+01	(1)	3.10E+03	(4)	7.89E-01	(8)	7.89E-01	-	<2	<0.001	<0.001	<2	<0.001	<0.001	<0.1	<0.001	<0.0008	<1	<0.0011	<2	<0.001
Dichlorodifluoromethane	1.68E+02	(1)	1.49E+02	(4)	1.71E+02	(8)	1.49E+02	-	<1	<0.001	<0.001	<1	<0.001	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	<0.001
Ethylbenzene	6.84E+01	(1)	1.83E+03	(4)	5.98E+00	(8)	5.98E+00	-	0.75	<0.001	<0.001	1.4	<0.001	<0.001	<0.05	0.00157	<0.0008	7.5	0.00134	<1	0.00691
Hexachlorobutadiene	6.11E+01	(1)	2.38E+02	(4)	5.91E+00	(8)	5.91E+00	-	<2	<0.001	<0.001	<2	<0.001	<0.001	<0.1	<0.001	<0.0008	<1	<0.0011	<2	<0.001
Isopropylbenzene	2.43E+03	(1)	2.81E+03	(4)	3.99E+02	(8)	3.99E+02	-	0.3	<0.001	<0.001	0.58	<0.001	<0.001	<0.05	<0.001	<0.0008	1.7	<0.0011	<1	0.00208
Methyl tert-butyl ether (MTBE)	9.01E+02	(1)	2.49E+04	(4)	1.11E+01	(8)	1.11E+01	-	<1	<0.002	0.00107	<1	<0.002	<0.002	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	0.0102
Methylene chloride	4.09E+02	(1)	1.12E+03	(4)	1.90E+01	(8)	1.90E+01	-	0.12	<0.005	<0.004	<3	<0.005	<0.006	0.042	<0.003	0.0173	<1.5	0.031	<3	<0.002
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	1.64E+00	(8)	1.64E+00	-	3.3	<0.001	<0.001	9.2	<0.001	<0.001	0.016	<0.002	<0.0016	9.1	<0.0022	0.35	0.00218
n-Butylbenzene	3.90E+03	(2)	5.10E+04	(5)	1.15E+03	(8)	1.15E+03	-	0.7	<0.001	<0.001	1	<0.001	<0.001	<0.05	<0.001	<0.0008	2	<0.0011	0.15	0.00116
n-Propylbenzene	3.40E+03	(2)	2.10E+04	(5)	4.56E+02	(8)	4.56E+02	-	0.56	<0.001	<0.001	0.89	<0.001	<0.001	<0.05	<0.001	<0.0008	3.3	<0.0011	<1	0.00257
sec-Butylbenzene	-	-	-	-	-	-	-	-	0.34	<0.001	<0.001	0.48	<0.001	<0.001	<0.05	<0.001	<0.0008	1.2	<0.0011	<1	0.00203
Styrene	7.28E+03	(1)	9.99E+03	(4)	6.40E+02	(8)	6.40E+02	-	<1	<0.001	<0.001	<1	<0.001	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	<0.001
tert-Butylbenzene	-	-	-	-	-	-	-	-	<1	<0.001	<0.001	<1	<0.001	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	<0.001
Tetrachloroethene (PCE)	7.02E+00	(1)	2.12E+02	(4)	1.98E-01	(8)	1.98E-01	-	<1	<0.001	<0.001	<1	<0.001	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	<0.001
Toluene	5.27E+03	(1)	1.34E+04	(4)	5.84E+02	(8)	5.84E+02	-	<1	<0.001	<0.001	<1	<0.001	0.000344	<0.05	0.00336	<0.0008	<0.5	0.00596	<1	<0.001
trans-1,2-DCE	2.70E+02	(1)	2.73E+02	(4)	1.24E+01	(8)	1.24E+01	-	<1	<0.001	<0.001	<1	<0.001	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	<0.001
trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-	<1	<0.001	<0.001	<1	<0.001	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	<0.001
Trichloroethene (TCE)	8.77E+00	(1)	7.68E+00	(4)	4.85E-01	(8)	4.85E-01	-	<1	<0.001	<0.001	<1	<0.001	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	<0.001
Trichlorofluoromethane	1.41E+03	(1)	1.30E+03	(4)	4.10E+02	(8)	4.10E+02	-	<1	0.000477	0.000596	<1	0.000301	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	<0.001
Vinyl chloride	7.28E-01	(1)	1.49E+02	(4)	2.50E-02	(8)	2.50E-02	-	<1	<0.001	<0.001	<1	<0.001	<0.001	<0.05	<0.001	<0.0008	<0.5	<0.0011	<1	<0.001
Xylenes, Total	8.14E+02	(1)	7.43E+02	(4)	7.21E+01	(8)	7.21E+01	-	1.1	<0.003	<0.003	0.56	<0.003	<0.004	<0.1	0.00786	<0.0016	12	0.0046	<2	0.00795
Semi Volatile Organics - (EPA Method 8270) mg/kg																					
1,2,4-Trichlorobenzene	7.30E+01	(1)	6.87E+01	(4)	4.21E+00	(8)	4.21E+00	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
1,2-Dichlorobenzene	2.31E+03	(1)	2.71E+03	(4)	1.29E+02	(8)	1.29E+02	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
1,4-Dichlorobenzene	3.17E+01	(1)	8.31E+02	(4)	1.47E+00	(8)	1.47E+00	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
1-Methylnaphthalene	1.60E+02	(3)	5.30E+01	(6)	2.35E+00	(8)	2.35E+00	-	24	<0.399	<0.402	29	<0.199	<0.996	<0.198	<0.3995	<0.397	12	<0.1996	<1.008	<0.403
2,4,5-Trichlorophenol	6.11E+03	(1)	2.38E+04	(4)	4.78E+03	(8)	4.78E+03	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
2,4,6-Trichlorophenol	6.11E+01	(1)	2.38E+02	(4)	4.78E+01	(8)	4.78E+01	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
2,4-Dichlorophenol	1.83E+02	(1)	7.15E+02	(4)	4.60E+01	(8)	4.60E+01	-	<4.003	<0.798	<0.803	<0.797	<0.398	<1.992	<0.397	<0.7989	<0.7939	<0.7921	<0.3992	<2.017	<0.805
2,4-Dimethylphenol	1.22E+03	(1)	4.76E+03	(4)	3.07E+02	(8)	3.07E+02	-	<3.002	<0.598	<0.602	<0.597	<0.299	<1.494	<0.298	<0.5992	<0.5954	<0.5941	<0.2994	<1.513	<0.604
2,4-Dinitrophenol	1.22E+02	(1)	4.76E+02	(4)	2.91E+01	(8)	2.91E+01	-	<4.003	<0.798	<0.803	0.2	0.09	<1.992	<0.397	<0.7989	<0.7939	<0.7921	<0.3992	<2.017	0.19

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Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	SWMU 14-3 (8-10')	SWMU 14-4 (0-0.5')	SWMU 14-4 (1.5-2.0')	SWMU 14-4 (10-12')	SWMU 14-4 (19.5-20')	SWMU 14-5 (0-0.5')	SWMU 14-5 (1.5-2.0')	SWMU 14-6 (0-0.5')	SWMU 14-6 (1.5-2')	SWMU 14-6 (10-12')	SWMU 14-6 (17-18')	SWMU 14-7 (0-0.5')	SWMU 14-7 (1.5-2')
									1207900-003	1207917-001	1207917-002	1207917-003	1207917-004	1207940-016	1207940-018	1210582-001	1210582-002	1210582-003	1210582-004	1207922-006	1207922-007
									7/18/2012	7/17/2012	7/17/2012	7/17/2012	7/17/2012	7/19/2012	7/19/2012	10/9/2012	10/9/2012	10/9/2012	10/9/2012	7/18/2012	7/18/2012
2,4-Dinitrotoluene	1.57E+01	(1)	4.76E+02	(4)	1.04E+00	(8)	1.04E+00	-	<5.003	<0.997	<1.004	<0.996	<0.498	<2.49	<0.496	<0.9987	<0.9924	<0.9901	<0.499	<2.521	<1.007
2,6-Dinitrotoluene	6.11E+01	(1)	2.38E+02	(4)	1.77E+01	(8)	1.77E+01	-	<5.003	<0.997	<1.004	<0.996	<0.498	<2.49	<0.496	<0.9987	<0.9924	<0.9901	<0.499	<2.521	<1.007
2-Chloronaphthalene	6.11E+01	(1)	2.94E+02	(4)	4.01E-01	(8)	4.01E-01	-	<2.502	<0.499	<0.502	<0.498	<0.249	<1.245	<0.248	<0.4993	<0.4962	<0.495	<0.2495	<1.261	<0.503
2-Chlorophenol	3.91E+02	(1)	1.55E+03	(4)	5.33E+01	(8)	5.33E+01	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	6.45E+01	(8)	6.45E+01	-	29	<0.399	<0.402	46	<0.199	<0.996	<0.198	<0.3995	<0.397	17	<0.1996	<1.008	<0.403
2-Methylphenol	3.10E+03	(2)	3.10E+04	(5)	2.67E+02	(8)	2.67E+02	-	<5.003	<0.997	<1.004	<0.996	<0.498	<2.49	<0.496	<0.9987	<0.9924	<0.9901	<0.499	<2.521	<1.007
2-Nitroaniline	6.10E+02	(2)	6.00E+03	(5)	2.86E+01	(8)	2.86E+01	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
2-Nitrophenol	-	-	-	-	-	-	-	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
3,3'-Dichlorobenzidine	1.08E+01	(1)	3.64E+02	(4)	3.41E+00	(8)	3.41E+00	-	<2.502	<0.499	<0.502	<0.498	<0.249	<1.245	<0.248	<0.4993	<0.4962	<0.495	<0.2495	<1.261	<0.503
3+4-Methylphenol	-	-	-	-	-	-	-	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
3-Nitroaniline	-	-	-	-	-	-	-	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
4,6-Dinitro-2-methylphenol	4.90E+00	(2)	4.90E+01	(5)	9.22E-01	(8)	9.22E-01	-	<5.003	<0.997	<1.004	<0.996	<0.498	<2.49	<0.496	<0.9987	<0.9924	<0.9901	<0.499	<2.521	<1.007
4-Bromophenyl phenyl ether	-	-	-	-	-	-	-	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
4-Chloro-3-methylphenol	6.10E+03	(2)	6.20E+04	(5)	5.99E+02	(8)	5.99E+02	-	<5.003	<0.997	<1.004	<0.996	<0.498	<2.49	<0.496	<0.9987	<0.9924	<0.9901	<0.499	<2.521	<1.007
4-Chloroaniline	2.40E+01	(3)	8.60E+00	(6)	5.99E-02	(8)	5.99E-02	-	<5.003	<0.997	<1.004	<0.996	<0.498	<2.49	<0.496	<0.9987	<0.9924	<0.9901	<0.499	<2.521	<1.007
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	-	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
4-Nitroaniline	2.40E+02	(3)	8.60E+01	(6)	6.45E-01	(8)	6.45E-01	-	<4.003	<0.798	<0.803	<0.797	<0.398	<1.992	<0.397	<0.7989	<0.7939	<0.7921	<0.3992	<2.017	<0.805
4-Nitrophenol	-	-	-	-	-	-	-	-	<2.502	<0.499	<0.502	<0.498	<0.249	<1.245	<0.248	<0.4993	<0.4962	<0.495	<0.2495	<1.261	<0.503
Acenaphthene	3.44E+03	(1)	1.86E+04	(4)	7.79E+03	(8)	3.44E+03	-	2	<0.399	<0.402	1	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Acenaphthylene	-	-	-	-	-	-	-	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Aniline	8.50E+02	(3)	3.00E+02	(6)	1.80E+00	(8)	1.80E+00	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Anthracene	1.72E+04	(1)	6.68E+04	(4)	1.25E+05	(8)	1.72E+04	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Azobenzene	5.10E+01	(3)	2.30E+01	(6)	3.69E-01	(8)	3.69E-01	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Benz(a)anthracene	1.48E+00	(1)	2.13E+02	(4)	3.61E+01	(8)	1.48E+00	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Benzo(a)pyrene	1.48E-01	(1)	2.13E+01	(4)	1.20E+01	(8)	1.48E-01	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Benzo(b)fluoranthene	1.48E+00	(1)	2.13E+02	(4)	1.22E+02	(8)	1.48E+00	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Benzo(g,h,i)perylene	-	-	-	-	-	-	-	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Benzo(k)fluoranthene	1.48E+01	(1)	2.06E+03	(4)	1.20E+03	(8)	1.48E+01	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Benzoic acid	2.40E+05	(2)	2.50E+06	(5)	6.45E+03	(8)	6.45E+03	-	<5.003	<0.997	<1.004	<0.996	<0.498	0.44	<0.496	<0.9987	<0.9924	<0.9901	<0.499	1.2	<1.007
Benzyl alcohol	6.10E+03	(2)	6.20E+04	(5)	1.71E+02	(8)	1.71E+02	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Bis(2-chloroethoxy)methane	1.80E+02	(2)	1.80E+03	(5)	5.07E+00	(8)	5.07E+00	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Bis(2-chloroethyl)ether	2.68E+00	(1)	7.78E+01	(4)	1.21E-02	(8)	1.21E-02	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Bis(2-chloroisopropyl)ether	9.15E+01	(1)	3.10E+03	(4)	1.07E+00	(8)	1.07E+00	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Bis(2-ethylhexyl)phthalate	3.47E+02	(1)	4.76E+03	(4)	3.97E+03	(8)	3.47E+02	-	<5.003	0.24	<1.004	0.52	<0.498	<2.49	<0.496	<0.9987	<0.9924	<0.9901	<0.499	<2.521	<1.007
Butyl benzyl phthalate	2.60E+03	(3)	9.10E+02	(6)	9.22E+01	(8)	9.22E+01	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Carbazole	-	-	-	-	-	-	-	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Chrysene	1.48E+02	(1)	2.06E+04	(4)	3.68E+03	(8)	1.48E+02	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Dibenz(a,h)anthracene	1.48E-01	(1)	2.13E+01	(4)	3.90E+01	(8)	1.48E-01	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Dibenzofuran	7.80E+01	(2)	1.00E+03	(5)	5.07E+01	(8)	5.07E+01	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Diethyl phthalate	4.89E+04	(1)	1.91E+05	(4)	4.45E+03	(8)	4.45E+03	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(4)	3.71E+04	(8)	3.71E+04	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Di-n-butyl phthalate	6.11E+03	(1)	2.38E+04	(4)	3.21E+03	(8)	3.21E+03	-	<5.003	<0.997	<1.004	<0.996	<0.498	<2.49	<0.496	<0.9987	<0.9924	<0.9901	<0.499	<2.521	<1.007
Di-n-octyl phthalate	-	-	-	-	-	-	-	-	<2.502	<0.499	<0.502	<0.498	<0.249	<1.245	<0.248	<0.4993	<0.4962	<0.495	<0.2495	<1.261	<0.503
Fluoranthene	2.29E+03	(1)	8.91E+03	(4)	5.61E+04	(8)	2.29E+03	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Fluorene	2.29E+03	(1)	8.91E+03	(4)	9.36E+03	(8)	2.29E+03	-	<2.001	<0.399	<0.402	1.4	<0.199	<0.996	<0.198	<0.3995	<0.397	1.2	<0.1996	<1.008	<0.403
Hexachlorobenzene	3.04E+00	(1)	1.03E+02	(4)	1.83E+00	(8)	1.83E+00	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Hexachlorobutadiene	6.11E+01	(1)	2.38E+02	(4)	5.91E+00	(8)	5.91E+00	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Hexachlorocyclopentadiene	3.67E+02	(1)	8.11E+02	(4)	2.43E+02	(8)	2.43E+02	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403

Table 8
Old API Separator Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	SWMU 14-3 (8-10')	SWMU 14-4 (0-0.5')	SWMU 14-4 (1.5-2.0')	SWMU 14-4 (10-12')	SWMU 14-4 (19.5-20')	SWMU 14-5 (0-0.5')	SWMU 14-5 (1.5-2.0')	SWMU 14-6 (0-0.5')	SWMU 14-6 (1.5-2')	SWMU 14-6 (10-12')	SWMU 14-6 (17-18')	SWMU 14-7 (0-0.5')	SWMU 14-7 (1.5-2')
									1207900-003 7/18/2012	1207917-001 7/17/2012	1207917-002 7/17/2012	1207917-003 7/17/2012	1207917-004 7/17/2012	1207940-016 7/19/2012	1207940-018 7/19/2012	1210582-001 10/9/2012	1210582-002 10/9/2012	1210582-003 10/9/2012	1210582-004 10/9/2012	1207922-006 7/18/2012	1207922-007 7/18/2012
Hexachloroethane	4.28E+01	(1)	1.67E+02	(4)	3.77E+00	(8)	3.77E+00	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Indeno(1,2,3-cd)pyrene	1.48E+00	(1)	2.13E+02	(4)	3.98E+02	(8)	1.48E+00	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Isophorone	5.12E+03	(1)	4.75E+04	(4)	8.84E+01	(8)	8.84E+01	-	<5.003	<0.997	<1.004	<0.996	<0.498	<2.49	<0.496	<0.9987	<0.9924	<0.9901	<0.499	<2.521	<1.007
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	1.64E+00	(8)	1.64E+00	-	3.8	<0.399	<0.402	4	<0.199	<0.996	<0.198	<0.3995	<0.397	4.2	<0.1996	<1.008	<0.403
Nitrobenzene	5.35E+01	(1)	3.32E+02	(4)	2.88E-01	(8)	2.88E-01	-	<5.003	<0.997	<1.004	<0.996	<0.498	<2.49	<0.496	<0.9987	<0.9924	<0.9901	<0.499	<2.521	<1.007
N-Nitrosodi-n-propylamine	6.90E-01	(3)	2.50E-01	(6)	3.23E-03	(8)	3.23E-03	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
N-Nitrosodiphenylamine	9.93E+02	(1)	3.36E+04	(4)	2.61E+02	(8)	2.61E+02	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Pentachlorophenol	8.94E+00	(1)	3.10E+02	(4)	5.90E+00	(8)	5.90E+00	-	<4.003	<0.798	<0.803	<0.797	<0.398	<1.992	<0.397	<0.7989	<0.7939	<0.7921	<0.3992	<2.017	<0.805
Phenanthrene	1.83E+03	(1)	7.15E+03	(4)	1.32E+04	(8)	1.83E+03	-	4.8	<0.399	<0.402	3.3	<0.199	<0.996	<0.198	<0.3995	<0.397	2.6	<0.1996	<1.008	<0.403
Phenol	1.83E+04	(1)	6.88E+04	(4)	2.29E+03	(8)	2.29E+03	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Pyrene	1.72E+03	(1)	6.68E+03	(4)	4.12E+04	(8)	1.72E+03	-	<2.001	<0.399	<0.402	<0.398	<0.199	<0.996	<0.198	<0.3995	<0.397	<0.396	<0.1996	<1.008	<0.403
Pyridine	7.80E+01	(2)	1.00E+03	(5)	2.44E+00	(8)	2.44E+00	-	<5.003	<0.997	<1.004	<0.996	<0.498	<2.49	<0.496	<0.9987	<0.9924	<0.9901	<0.499	<2.521	<1.007
Total Petroleum Hydrocarbons - (EPA Method 8015B) mg/kg																					
Diesel Range Organics (DRO)	1.00E+03	(10)	1.00E+03	(10)	1.00E+03	(10)	-	-	**2000**	88	39	610	<10	300	53	<10	260	**2200**	<10	**3900**	**2100**
Gasoline Range Organics (GRO)	-	-	-	-	-	-	-	-	84	<10	<5	67	4	5.4	<5	<5	<5	220	<5	<250	15
Motor Oil Range Organics (MRO)	3.00E+03	(11)	3.00E+03	(11)	3.00E+03	(11)	-	-	<1005	56	<51	<510	<51	240	<51	<52	320	<482	<50	<994	<486

-- No screening level or analytical result available

NMED - Risk Assessment Guidance for Site Investigations and Remediation (June 14, 2012)

EPA - Regional Screening Levels (November 2012)

(1) NMED Residential Screening Level

(2) EPA Residential Screening Level

(3) EPA Residential - Screening Levels (November 2012) multiplied by 10 because the constituent is listed as carcinogenic

(4) NMED Construction Worker Screening Level

(5) EPA Industrial - Screening Levels (Nov. 2012)

(6) EPA Industrial - Screening Levels (Nov. 2012) multiplied by 10

(7) SoilGW NMED Dilution Attenuation Factor (DAF) = 461

(8) SoilGW Risk-based EPA DAF = 461

(9) SoilGW MCL-based EPA DAF = 461

(10) NMED Table 6-2 TPH Screening Guidelines for Potable Groundwater "uknown oil" with DAF = 1.0 - see report Section 5 for use of screening levels

(11) NMED Table 6-2 TPH Screening Guidelines for Potable Groundwater "waste oil" with DAF = 1.0 - see report Section 5 for use of screening levels

(12) Background concentrations to be determined.

Bold represents value above Residential Screening Level

yellow highlight represents value above Leachate (DAF) Screening Level

Bold with yellow - value exceeds Residential Screening Level and

Table 8
Old API Separator Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	SWMU 14-7 (23.5-24')	SWMU 14-7 (6-8')	SWMU 14-8 (0-0.5')	SWMU 14-8 (1.5-2.0')	SWMU 14-9 (0-0.5')	SWMU 14-9 (1.5-2')	SWMU 14-9 (13-14')	SWMU 14-9 (4-6')	SWMU 14-10 (0-0.5')	SWMU 14-10 (1.5-2.0')	SWMU 14-11 (0-0.5')	SWMU 14-11 (1.5-2.0')	SWMU 14-12 (0-0.5')
									1207922-009 7/18/2012	1207922-008 7/18/2012	1207940-003 7/19/2012	1207940-004 7/19/2012	1207922-001 7/18/2012	1207922-003 7/18/2012	1207922-005 7/18/2012	1207922-004 7/18/2012	1207940-001 7/19/2012	1207940-002 7/19/2012	1207940-012 7/19/2012	1207940-013 7/19/2012	1207940-006 7/19/2012
Metals (mg/kg)																					
Antimony	3.13E+01	(1)	1.24E+02	(4)	3.05E+02	(8)	3.13E+01	-	4.5	4.6	4.5	<12.5	<12.499	<12.5	4.5	<12.501	3.3	<12.5	<12.5	<12.5	<12.5
Arsenic	3.90E+00	(1)	5.30E+01	(4)	6.05E+00	(8)	3.90E+00	-	<12.5	<12.501	<12.5	<12.5	<12.499	<12.5	<12.5	<12.501	<12.5	<12.5	<12.5	<12.5	<12.5
Barium	1.56E+04	(1)	4.35E+03	(4)	1.39E+05	(8)	4.35E+03	-	350	2400	610	690	480	500	190	200	430	430	590	620	150
Beryllium	1.56E+02	(1)	1.44E+02	(4)	2.66E+04	(8)	1.44E+02	-	1.2	1.2	0.77	0.88	0.58	0.52	1.3	1.1	0.89	0.83	0.83	0.84	1
Cadmium	7.03E+01	(1)	2.77E+02	(4)	6.33E+02	(8)	7.03E+01	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium III	1.17E+05	(1)	4.65E+05	(4)	4.54E+10	(8)	1.17E+05	-	17	14	16	10	13	10	19	12	23	23	21	17	12
Chromium VI	2.97E+00	(1)	6.56E+01	(4)	3.83E+00	(8)	2.97E+00	-	17	14	16	10	13	10	19	12	23	23	21	17	12
Cobalt	2.30E+01	(2)	3.00E+02	(5)	9.68E+01	(8)	2.30E+01	-	7.6	6	5	4.7	3.8	3.1	6.5	4.9	5.4	5.1	5.4	4.9	5.9
Cyanide	4.69E+01	(1)	1.86E+02	(4)	1.02E+02	(8)	4.69E+01	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Iron	5.48E+04	(1)	2.17E+05	(4)	2.98E+05	(8)	5.48E+04	-	21000	20000	15000	13000	14000	8800	23000	16000	15000	14000	14000	15000	15000
Lead	4.00E+02	(1)	8.00E+02	(4)	6.45E+03	(8)	4.00E+02	-	<1.25	2.6	6.2	5	5.5	1.9	<1.25	2.4	7.7	6.8	7	5.8	4.4
Manganese	1.86E+03	(1)	4.40E+02	(4)	2.64E+04	(8)	4.40E+02	-	740	400	470	190	1800	930	460	280	510	530	550	700	240
Mercury	1.56E+01	(1)	1.36E+01	(4)	1.51E+01	(8)	1.36E+01	-	<0.033	<0.033	0.041	<0.033	0.68	0.09	<0.033	<0.033	0.32	0.21	0.14	0.058	0.04
Nickel	1.56E+03	(1)	6.19E+03	(4)	2.20E+04	(8)	1.56E+03	-	16	11	7.4	7.9	6.3	5.9	13	8.5	9.3	8.8	9.7	7.9	9.8
Selenium	3.91E+02	(1)	1.55E+03	(4)	4.45E+02	(8)	3.91E+02	-	<12.5	<12.501	<12.5	<12.5	<12.499	<12.5	<12.5	<12.501	<12.5	<12.5	<12.5	<12.5	<12.5
Silver	3.91E+02	(1)	1.55E+03	(4)	7.22E+02	(8)	3.91E+02	-	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25
Vanadium	3.91E+02	(1)	1.55E+03	(4)	8.42E+04	(8)	3.91E+02	-	16	27	25	18	18	19	29	20	25	23	25	24	23
Zinc	2.35E+04	(1)	9.29E+04	(4)	3.14E+05	(8)	2.35E+04	-	25	22	33	15	44	28	27	17	49	43	59	38	18
Volatile Organic Compounds - (EPA Method 8260) mg/kg																					
1,1,1,2-Tetrachloroethane	2.91E+01	(1)	7.79E+02	(4)	7.59E-01	(8)	7.59E-01	-	<0.001	<1	<0.001	<1	<0.001	<0.5	<0.001	<0.5	<0.001	<0.001	<0.001	<0.001	<2.5
1,1,1-Trichloroethane	1.56E+04	(1)	1.48E+04	(4)	1.34E+03	(8)	1.34E+03	-	<0.001	<1	<0.001	<1	<0.001	<0.5	<0.001	<0.5	<0.001	<0.001	<0.001	<0.001	<2.5
1,1,2,2-Tetrachloroethane	8.02E+00	(1)	2.21E+02	(4)	9.82E-02	(8)	9.82E-02	-	<0.001	<1	<0.001	<1	0.00043	<0.5	<0.001	<0.5	<0.001	<0.001	<0.001	<0.001	<2.5
1,1,2-Trichloroethane	2.81E+00	(1)	4.72E+02	(4)	5.14E-02	(8)	5.14E-02	-	<0.001	<1	<0.001	<1	<0.001	<0.5	<0.001	<0.5	<0.001	<0.001	<0.001	<0.001	<2.5
1,1-Dichloroethane	6.45E+01	(1)	1.70E+03	(4)	2.75E+00	(8)	2.75E+00	-	<0.001	<2	0.000918	<2	<0.001	<1	<0.001	<1	<0.001	<0.001	<0.001	<0.001	<5
1,1-Dichloroethene	4.49E+02	(1)	4.32E+02	(4)	5.36E+01	(8)	5.36E+01	-	<0.001	<1	<0.001	<1	<0.001	<0.5	<0.001	<0.5	<0.001	<0.001	<0.001	<0.001	<2.5
1,1-Dichloropropene	-	-	-	-	-	-	-	-	<0.001	<2	<0.001	<2	<0.001	<1	<0.001	<1	<0.001	<0.001	<0.001	<0.001	<5
1,2,3-Trichlorobenzene	4.90E+01	(2)	4.90E+02	(5)	6.92E+00	(8)	6.92E+00	-	<0.001	<2	<0.001	<2	<0.001	<1	<0.001	<1	<0.001	<0.001	<0.001	<0.001	<5
1,2,3-Trichloropropane	4.97E-02	(1)	7.23E+00	(4)	1.15E-03	(8)	1.15E-03	-	<0.001	<2	<0.001	<2	<0.001	<1	<0.001	<1	<0.001	<0.001	<0.001	<0.001	<5
1,2,4-Trichlorobenzene	7.30E+01	(1)	6.87E+01	(4)	4.21E+00	(8)	4.21E+00	-	<0.001	<1	<0.001	<1	<0.001	<0.5	<0.001	<0.5	<0.001	<0.001	<0.001	<0.001	<2.5
1,2,4-Trimethylbenzene	6.20E+01	(2)	2.60E+02	(5)	9.68E+00	(8)	9.68E+00	-	<0.001	12	<0.001	6.7	0.002	1.5	<0.001	3.2	<0.001	<0.001	<0.001	0.000507	38
1,2-Dibromo-3-chloropropane	1.86E+00	(1)	5.07E+00	(4)	5.07E-04	(8)	5.07E-04	-	<0.002	<2	<0.002	<2	<0.002	<1	<0.002	<1	<0.002	<0.002	<0.002	<0.003	**2.2**
1,2-Dibromoethane (EDB)	5.88E-01	(1)	1.60E+01	(4)	7.10E-03	(8)	7.10E-03	-	<0.001	0.41	<0.001	0.31	<0.001	<0.5	<0.001	0.12	<0.001	<0.001	<0.001	<0.001	**0.82**
1,2-Dichlorobenzene	2.31E+03	(1)	2.71E+03	(4)	1.29E+02	(8)	1.29E+02	-	<0.001	<1	<0.001	<1	<0.001	<0.5	<0.001	<0.5	<0.001	<0.001	<0.001	<0.001	<2.5
1,2-Dichloroethane (EDC)	7.89E+00	(1)	5.87E+01	(4)	1.64E-01	(8)	1.64E-01	-	<0.001	<1	<0.001	<1	<0.001	<0.5	<0.001	<0.5	<0.001	<0.001	<0.001	<0.001	<2.5
1,2-Dichloropropane	1.52E+01	(1)	2.50E+01	(4)	4.94E-01	(8)	4.94E-01	-	<0.002	0.14	<0.002	0.23	<0.002	<0.5	<0.002	<0.5	<0.002	<0.002	<0.002	<0.003	0.6
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.00E+04	(5)	5.53E+01	(8)	5.53E+01	-	<0.001	1.7	<0.001	2.2	0.000458	0.46	<0.001	0.92	<0.001	<0.001	<0.001	0.00726	11
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	<0.001	<1	<0.001	<1	<0.001	<0.5	<0.001	<0.5	<0.001	<0.001	<0.001	<0.001	<2.5
1,3-Dichloropropane	1.60E+03	(2)	2.00E+04	(5)	4.56E+01	(8)	4.56E+01	-	<0.001	<1	<0.001	<1	<0.001	<0.5	<0.001	<0.5	<0.001	<0.001	<0.001	<0.001	<2.5
1,4-Dichlorobenzene	3.17E+01	(1)	8.31E+02	(4)	1.47E+00	(8)	1.47E+00	-	<0.001	<1	0.000252	<1	<0.001	<0.5	<0.001	<0.5	<0.001	0.000221	<0.001	<0.001	<2.5
1-Methylnaphthalene	1.60E+02	(3)	5.30E+01	(6)	2.35E+00	(8)	2.35E+00	-	<0.004	7.2	<0.003	2	0.0674	0.58	<0.005	2.9	0.002	<0.004	<0.004	0.0152	29
2,2-Dichloropropane	-	-	-	-	-	-	-	-	<0.001	<2	<0.001	<2	<0.001	<1	<0.001	<1	<0.001	<0.001	<0.001	<0.001	<5
2-Butanone (MEK)	3.71E+04	(1)	8.43E+04	(4)	5.87E+02	(8)	5.87E+02	-	<0.002	<10	0.00321	<10	<0.002	<5	<0.002	<5	0.002	<0.004	<0.005	<0.006	<25
2-Chlorotoluene	1.56E+03	(1)	6.19E+03	(4)	2.57E+02	(8)	2.57E+02	-	<0.001	<1	<0.001	<1	<0.001	<0.5	<0.001	0.049	<0.001	<0.001	<0.001	<0.001	0.26
2-Hexanone	9.38E+02	(1)	9.73E+02	(4)	3.53E+03	(8)	9.38E+02	-	<0.002	<10	<0.004	<10	<0.002	<5	<0.002	<5	<0.005	<0.004	<0.005	<0.006	<25
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	6.45E+01	(8)	6.45E+01	-	<0.004	12	<0.003	2.3	0.107	0.65	0.000628	4.7	0.00182	0.000302	<0.004	0.00211	50
4-Chlorotoluene	1.60E+03	(2)	2.00E+04	(5)	8.30E+01	(8)	8.30E+01	-	<0.001	<1	<0.001	<1	<0.001	<0.5	<0.001	<0.5	<0.001	<0.001	<0.001	<0.001	<2.5
4-Isopropyltoluene	-	-	-	-	-	-	-	-	<0.001	0.73	<0.001	0.44	<0.001	0.056	<0.001	0.15	<0.001	<0.001	<0.001	0.000723	2.1

Table 8
Old API Separator Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	SWMU 14-7 (23.5-24')	SWMU 14-7 (6-8')	SWMU 14-8 (0-0.5')	SWMU 14-8 (1.5-2.0')	SWMU 14-9 (0-0.5')	SWMU 14-9 (1.5-2')	SWMU 14-9 (13-14')	SWMU 14-9 (4-6')	SWMU 14-10 (0-0.5')	SWMU 14-10 (1.5-2.0')	SWMU 14-11 (0-0.5')	SWMU 14-11 (1.5-2.0')	SWMU 14-12 (0-0.5')
									1207922-009 7/18/2012	1207922-008 7/18/2012	1207940-003 7/19/2012	1207940-004 7/19/2012	1207922-001 7/18/2012	1207922-003 7/18/2012	1207922-005 7/18/2012	1207922-004 7/18/2012	1207940-001 7/19/2012	1207940-002 7/19/2012	1207940-012 7/19/2012	1207940-013 7/19/2012	1207940-006 7/19/2012
4-Methyl-2-pentanone	5.30E+03	(2)	5.30E+04	(5)	1.06E+02	(8)	1.06E+02	-	<0.002	<10	<0.004	<10	<0.002	<5	<0.002	<5	<0.005	<0.004	<0.005	<0.006	<25
Acetone	6.66E+04	(1)	2.21E+05	(4)	1.78E+03	(8)	1.78E+03	-	0.00266	8.2	0.014	7.1	0.00307	<7.5	0.00673	<7.5	0.0158	<0.026	<0.029	<0.038	<37.5
Benzene	1.54E+01	(1)	1.38E+02	(4)	7.96E-01	(8)	7.96E-01	-	<0.001	0.97	0.0122	0.35	<0.001	0.06	<0.001	0.69	0.00072	<0.001	<0.001	<0.001	5.9
Bromobenzene	3.00E+02	(2)	1.80E+03	(5)	1.66E+01	(8)	1.66E+01	-	<0.001	<1	<0.001	<1	<0.001	<0.5	<0.001	<0.5	<0.001	<0.001	<0.001	<0.001	<2.5
Bromodichloromethane	5.41E+00	(1)	1.43E+02	(4)	1.25E-01	(8)	1.25E-01	-	<0.001	<1	<0.001	<1	<0.001	<0.5	<0.001	<0.5	<0.001	<0.001	<0.001	<0.001	<2.5
Bromoform	6.16E+02	(1)	4.76E+03	(4)	2.78E+02	(8)	2.78E+02	-	<0.001	<1	<0.001	<1	<0.001	<0.5	<0.001	<0.5	<0.001	<0.001	<0.001	<0.001	<2.5
Bromomethane	1.65E+01	(1)	1.64E+01	(4)	8.86E-01	(8)	8.86E-01	-	-	<3	-	<3	-	<1.5	-	<1.5	-	-	-	-	<7.5
Carbon disulfide	1.53E+03	(1)	1.58E+03	(4)	1.30E+02	(8)	1.30E+02	-	<0.002	<10	<0.004	<10	<0.002	<5	<0.002	<5	0.00144	<0.004	<0.005	<0.006	<25
Carbon tetrachloride	1.08E+01	(1)	2.26E+02	(4)	7.39E-01	(8)	7.39E-01	-	<0.001	<2	<0.001	<2	<0.001	<1	<0.001	<1	<0.001	<0.001	<0.001	<0.001	<5
Chlorobenzene	3.76E+02	(1)	4.06E+02	(4)	2.27E+01	(8)	2.27E+01	-	<0.001	<1	<0.001	<1	<0.001	<0.5	<0.001	<0.5	<0.001	<0.001	<0.001	<0.001	<2.5
Chloroethane	2.98E+04	(1)	2.61E+04	(4)	2.48E+03	(8)	2.48E+03	-	<0.001	<2	<0.001	<2	<0.001	<1	<0.001	<1	<0.001	<0.001	<0.001	<0.001	<5
Chloroform	5.86E+00	(1)	1.54E+02	(4)	2.12E-01	(8)	2.12E-01	-	<0.001	<1	<0.001	<1	<0.001	<0.5	<0.001	<0.5	<0.001	<0.001	<0.001	<0.001	<2.5
Chloromethane	2.75E+02	(1)	2.41E+02	(4)	2.03E+01	(8)	2.03E+01	-	<0.001	<3	0.00053	<3	<0.001	<1.5	<0.001	<1.5	<0.001	<0.001	<0.001	<0.001	<7.5
cis-1,2-DCE	1.56E+02	(1)	6.19E+02	(4)	8.47E+00	(8)	8.47E+00	-	<0.001	<1	<0.001	<1	<0.001	<0.5	<0.001	<0.5	<0.001	<0.001	<0.001	<0.001	<2.5
cis-1,3-Dichloropropene	3.37E+01	(1)	2.09E+02	(4)	5.71E-01	(8)	5.71E-01	-	<0.001	<1	<0.001	<1	<0.001	<0.5	<0.001	<0.5	<0.001	<0.001	<0.001	<0.001	<2.5
Dibromochloromethane	1.21E+01	(1)	3.32E+02	(4)	1.52E-01	(8)	1.52E-01	-	<0.001	<1	<0.001	<1	<0.001	<0.5	<0.001	<0.5	<0.001	<0.001	<0.001	<0.001	<2.5
Dibromomethane	5.16E+01	(1)	3.10E+03	(4)	7.89E-01	(8)	7.89E-01	-	<0.001	<2	<0.001	<2	<0.001	<1	<0.001	<1	<0.001	<0.001	<0.001	<0.001	<5
Dichlorodifluoromethane	1.68E+02	(1)	1.49E+02	(4)	1.71E+02	(8)	1.49E+02	-	<0.001	<1	<0.001	<1	<0.001	<0.5	<0.001	<0.5	<0.001	<0.001	<0.001	<0.001	<2.5
Ethylbenzene	6.84E+01	(1)	1.83E+03	(4)	5.98E+00	(8)	5.98E+00	-	<0.001	3.1	<0.001	3.8	0.000542	0.35	<0.001	1.1	<0.001	<0.001	<0.001	<0.001	17
Hexachlorobutadiene	6.11E+01	(1)	2.38E+02	(4)	5.91E+00	(8)	5.91E+00	-	<0.001	<2	<0.001	<2	<0.001	<1	<0.001	<1	<0.001	<0.001	<0.001	<0.001	<5
Isopropylbenzene	2.43E+03	(1)	2.81E+03	(4)	3.99E+02	(8)	3.99E+02	-	<0.001	0.84	<0.001	0.97	<0.001	0.064	<0.001	0.19	<0.001	<0.001	<0.001	<0.001	3
Methyl tert-butyl ether (MTBE)	9.01E+02	(1)	2.49E+04	(4)	1.11E+01	(8)	1.11E+01	-	<0.001	0.8	0.00157	<1	<0.001	<0.5	<0.001	0.1	<0.002	<0.002	<0.002	<0.003	0.83
Methylene chloride	4.09E+02	(1)	1.12E+03	(4)	1.90E+01	(8)	1.90E+01	-	<0.002	<3	<0.004	<3	<0.002	<1.5	<0.002	<1.5	<0.005	<0.004	<0.005	<0.006	<7.5
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	1.64E+00	(8)	1.64E+00	-	<0.001	3.9	<0.001	1.1	0.0183	0.3	<0.001	1.1	0.00069	<0.001	<0.001	<0.001	16
n-Butylbenzene	3.90E+03	(2)	5.10E+04	(5)	1.15E+03	(8)	1.15E+03	-	<0.001	1.6	<0.001	0.58	0.000177	0.1	<0.001	0.28	<0.001	<0.001	<0.001	<0.001	4
n-Propylbenzene	3.40E+03	(2)	2.10E+04	(5)	4.56E+02	(8)	4.56E+02	-	<0.001	2	<0.001	1.4	<0.001	0.17	<0.001	0.45	<0.001	<0.001	<0.001	<0.001	6.2
sec-Butylbenzene	-	-	-	-	-	-	-	-	<0.001	0.86	<0.001	0.47	<0.001	<0.5	<0.001	0.15	<0.001	<0.001	<0.001	<0.001	2.4
Styrene	7.28E+03	(1)	9.99E+03	(4)	6.40E+02	(8)	6.40E+02	-	<0.001	<1	<0.001	<1	<0.001	0.077	<0.001	<0.5	<0.001	<0.001	<0.001	<0.001	<2.5
tert-Butylbenzene	-	-	-	-	-	-	-	-	<0.001	<1	<0.001	<1	<0.001	<0.5	<0.001	<0.5	<0.001	<0.001	<0.001	<0.001	<2.5
Tetrachloroethene (PCE)	7.02E+00	(1)	2.12E+02	(4)	1.98E-01	(8)	1.98E-01	-	<0.001	<1	<0.001	<1	<0.001	<0.5	<0.001	<0.5	<0.001	<0.001	<0.001	<0.001	<2.5
Toluene	5.27E+03	(1)	1.34E+04	(4)	5.84E+02	(8)	5.84E+02	-	<0.001	0.75	0.000743	1.4	0.000262	0.14	<0.001	2.8	0.00292	0.000892	<0.001	<0.001	45
trans-1,2-DCE	2.70E+02	(1)	2.73E+02	(4)	1.24E+01	(8)	1.24E+01	-	<0.001	<1	<0.001	<1	<0.001	<0.5	<0.001	<0.5	<0.001	<0.001	<0.001	<0.001	<2.5
trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-	<0.001	<1	<0.001	<1	<0.001	<0.5	<0.001	<0.5	<0.001	<0.001	<0.001	<0.001	<2.5
Trichloroethene (TCE)	8.77E+00	(1)	7.68E+00	(4)	4.85E-01	(8)	4.85E-01	-	<0.001	<1	<0.001	<1	<0.001	<0.5	<0.001	<0.5	<0.001	<0.001	<0.001	<0.001	<2.5
Trichlorofluoromethane	1.41E+03	(1)	1.30E+03	(4)	4.10E+02	(8)	4.10E+02	-	<0.001	<1	<0.001	<1	<0.001	<0.5	<0.001	<0.5	<0.001	0.000219	<0.001	0.000685	<2.5
Vinyl chloride	7.28E-01	(1)	1.49E+02	(4)	2.50E-02	(8)	2.50E-02	-	<0.001	<1	<0.001	<1	<0.001	<0.5	<0.001	<0.5	<0.001	<0.001	<0.001	<0.001	<2.5
Xylenes, Total	8.14E+02	(1)	7.43E+02	(4)	7.21E+01	(8)	7.21E+01	-	<0.002	8.1	<0.003	9.3	0.00282	2.4	<0.002	5.6	<0.003	<0.003	<0.003	<0.004	86
Semi Volatile Organics - (EPA Method 8270) mg/kg																					
1,2,4-Trichlorobenzene	7.30E+01	(1)	6.87E+01	(4)	4.21E+00	(8)	4.21E+00	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
1,2-Dichlorobenzene	2.31E+03	(1)	2.71E+03	(4)	1.29E+02	(8)	1.29E+02	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
1,4-Dichlorobenzene	3.17E+01	(1)	8.31E+02	(4)	1.47E+00	(8)	1.47E+00	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
1-Methylnaphthalene	1.60E+02	(3)	5.30E+01	(6)	2.35E+00	(8)	2.35E+00	-	<0.199	6.5	<1.002	3.6	1.5	<0.994	<0.202	5.1	<1.006	<0.989	<0.997	<1.004	21
2,4,5-Trichlorophenol	6.11E+03	(1)	2.38E+04	(4)	4.78E+03	(8)	4.78E+03	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
2,4,6-Trichlorophenol	6.11E+01	(1)	2.38E+02	(4)	4.78E+01	(8)	4.78E+01	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
2,4-Dichlorophenol	1.83E+02	(1)	7.15E+02	(4)	4.60E+01	(8)	4.60E+01	-	<0.399	<0.797	<2.003	<1.995	<1.982	<1.988	<0.403	<0.803	<2.011	<1.978	<1.995	<2.009	<0.801
2,4-Dimethylphenol	1.22E+03	(1)	4.76E+03	(4)	3.07E+02	(8)	3.07E+02	-	<0.299	<0.597	<1.503	<1.497	<1.486	<1.491	<0.303	0.52	<1.509	<1.484	<1.496	<1.507	<0.601
2,4-Dinitrophenol	1.22E+02	(1)	4.76E+02	(4)	2.91E+01	(8)	2.91E+01	-	0.091	<0.797	<2.003	0.56	<1.982	0.46	<0.403	<0.803	<2.011	<1.978	<1.995	<2.009	<0.801

Table 8
Old API Separator Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	SWMU 14-7 (23.5-24')	SWMU 14-7 (6-8')	SWMU 14-8 (0-0.5')	SWMU 14-8 (1.5-2.0')	SWMU 14-9 (0-0.5')	SWMU 14-9 (1.5-2')	SWMU 14-9 (13-14')	SWMU 14-9 (4-6')	SWMU 14-10 (0-0.5')	SWMU 14-10 (1.5-2.0')	SWMU 14-11 (0-0.5')	SWMU 14-11 (1.5-2.0')	SWMU 14-12 (0-0.5')
									1207922-009 7/18/2012	1207922-008 7/18/2012	1207940-003 7/19/2012	1207940-004 7/19/2012	1207922-001 7/18/2012	1207922-003 7/18/2012	1207922-005 7/18/2012	1207922-004 7/18/2012	1207940-001 7/19/2012	1207940-002 7/19/2012	1207940-012 7/19/2012	1207940-013 7/19/2012	1207940-006 7/19/2012
2,4-Dinitrotoluene	1.57E+01	(1)	4.76E+02	(4)	1.04E+00	(8)	1.04E+00	-	<0.498	<0.996	<2.504	<2.494	<2.477	<2.485	<0.504	<1.004	<2.514	<2.473	<2.493	<2.511	<1.001
2,6-Dinitrotoluene	6.11E+01	(1)	2.38E+02	(4)	1.77E+01	(8)	1.77E+01	-	<0.498	<0.996	<2.504	<2.494	<2.477	<2.485	<0.504	<1.004	<2.514	<2.473	<2.493	<2.511	<1.001
2-Chloronaphthalene	6.11E+01	(1)	2.94E+02	(4)	4.01E-01	(8)	4.01E-01	-	<0.249	<0.498	<1.252	<1.247	<1.238	<1.243	<0.252	<0.502	<1.257	<1.236	<1.247	<1.255	<0.501
2-Chlorophenol	3.91E+02	(1)	1.55E+03	(4)	5.33E+01	(8)	5.33E+01	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	6.45E+01	(8)	6.45E+01	-	<0.199	9.2	<1.002	4.2	1.9	<0.994	<0.202	8	<1.006	<0.989	<0.997	<1.004	32
2-Methylphenol	3.10E+03	(2)	3.10E+04	(5)	2.67E+02	(8)	2.67E+02	-	<0.498	<0.996	<2.504	<2.494	<2.477	<2.485	<0.504	0.33	<2.514	<2.473	<2.493	<2.511	<1.001
2-Nitroaniline	6.10E+02	(2)	6.00E+03	(5)	2.86E+01	(8)	2.86E+01	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
2-Nitrophenol	-	-	-	-	-	-	-	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
3,3'-Dichlorobenzidine	1.08E+01	(1)	3.64E+02	(4)	3.41E+00	(8)	3.41E+00	-	<0.249	<0.498	<1.252	<1.247	<1.238	<1.243	<0.252	<0.502	<1.257	<1.236	<1.247	<1.255	<0.501
3+4-Methylphenol	-	-	-	-	-	-	-	-	<0.199	<0.398	<1.002	<0.998	0.4	<0.994	<0.202	0.26	<1.006	<0.989	<0.997	<1.004	1.1
3-Nitroaniline	-	-	-	-	-	-	-	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
4,6-Dinitro-2-methylphenol	4.90E+00	(2)	4.90E+01	(5)	9.22E-01	(8)	9.22E-01	-	<0.498	<0.996	<2.504	<2.494	<2.477	<2.485	<0.504	<1.004	<2.514	<2.473	<2.493	<2.511	<1.001
4-Bromophenyl phenyl ether	-	-	-	-	-	-	-	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
4-Chloro-3-methylphenol	6.10E+03	(2)	6.20E+04	(5)	5.99E+02	(8)	5.99E+02	-	<0.498	<0.996	<2.504	<2.494	<2.477	<2.485	<0.504	<1.004	<2.514	<2.473	<2.493	<2.511	<1.001
4-Chloroaniline	2.40E+01	(3)	8.60E+00	(6)	5.99E-02	(8)	5.99E-02	-	<0.498	<0.996	<2.504	<2.494	<2.477	<2.485	<0.504	<1.004	<2.514	<2.473	<2.493	<2.511	<1.001
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	-	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
4-Nitroaniline	2.40E+02	(3)	8.60E+01	(6)	6.45E-01	(8)	6.45E-01	-	<0.399	<0.797	<2.003	<1.995	<1.982	<1.988	<0.403	<0.803	<2.011	<1.978	<1.995	<2.009	<0.801
4-Nitrophenol	-	-	-	-	-	-	-	-	<0.249	<0.498	<1.252	<1.247	<1.238	<1.243	<0.252	0.22	<1.257	<1.236	<1.247	<1.255	<0.501
Acenaphthene	3.44E+03	(1)	1.86E+04	(4)	7.79E+03	(8)	3.44E+03	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
Acenaphthylene	-	-	-	-	-	-	-	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
Aniline	8.50E+02	(3)	3.00E+02	(6)	1.80E+00	(8)	1.80E+00	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
Anthracene	1.72E+04	(1)	6.68E+04	(4)	1.25E+05	(8)	1.72E+04	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
Azobenzene	5.10E+01	(3)	2.30E+01	(6)	3.69E-01	(8)	3.69E-01	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
Benz(a)anthracene	1.48E+00	(1)	2.13E+02	(4)	3.61E+01	(8)	1.48E+00	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
Benzo(a)pyrene	1.48E-01	(1)	2.13E+01	(4)	1.20E+01	(8)	1.48E-01	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
Benzo(b)fluoranthene	1.48E+00	(1)	2.13E+02	(4)	1.22E+02	(8)	1.48E+00	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
Benzo(g,h,i)perylene	-	-	-	-	-	-	-	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
Benzo(k)fluoranthene	1.48E+01	(1)	2.06E+03	(4)	1.20E+03	(8)	1.48E+01	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
Benzoic acid	2.40E+05	(2)	2.50E+06	(5)	6.45E+03	(8)	6.45E+03	-	<0.498	<0.996	<2.504	2.3	0.59	0.5	<0.504	<1.004	<2.514	<2.473	0.47	0.66	<1.001
Benzyl alcohol	6.10E+03	(2)	6.20E+04	(5)	1.71E+02	(8)	1.71E+02	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
Bis(2-chloroethoxy)methane	1.80E+02	(2)	1.80E+03	(5)	5.07E+00	(8)	5.07E+00	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
Bis(2-chloroethyl)ether	2.68E+00	(1)	7.78E+01	(4)	1.21E-02	(8)	1.21E-02	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	0.18	<1.006	<0.989	<0.997	<1.004	<0.401
Bis(2-chloroisopropyl)ether	9.15E+01	(1)	3.10E+03	(4)	1.07E+00	(8)	1.07E+00	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
Bis(2-ethylhexyl)phthalate	3.47E+02	(1)	4.76E+03	(4)	3.97E+03	(8)	3.47E+02	-	<0.498	<0.996	<2.504	<2.494	2.6	<2.485	<0.504	<1.004	<2.514	<2.473	<2.493	<2.511	<1.001
Butyl benzyl phthalate	2.60E+03	(3)	9.10E+02	(6)	9.22E+01	(8)	9.22E+01	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
Carbazole	-	-	-	-	-	-	-	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
Chrysene	1.48E+02	(1)	2.06E+04	(4)	3.68E+03	(8)	1.48E+02	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
Dibenz(a,h)anthracene	1.48E-01	(1)	2.13E+01	(4)	3.90E+01	(8)	1.48E-01	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
Dibenzofuran	7.80E+01	(2)	1.00E+03	(5)	5.07E+01	(8)	5.07E+01	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
Diethyl phthalate	4.89E+04	(1)	1.91E+05	(4)	4.45E+03	(8)	4.45E+03	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(4)	3.71E+04	(8)	3.71E+04	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
Di-n-butyl phthalate	6.11E+03	(1)	2.38E+04	(4)	3.21E+03	(8)	3.21E+03	-	<0.498	<0.996	<2.504	<2.494	<2.477	<2.485	<0.504	<1.004	<2.514	<2.473	<2.493	<2.511	<1.001
Di-n-octyl phthalate	-	-	-	-	-	-	-	-	<0.249	<0.498	<1.252	<1.247	<1.238	<1.243	<0.252	<0.502	<1.257	<1.236	<1.247	<1.255	<0.501
Fluoranthene	2.29E+03	(1)	8.91E+03	(4)	5.61E+04	(8)	2.29E+03	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
Fluorene	2.29E+03	(1)	8.91E+03	(4)	9.36E+03	(8)	2.29E+03	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
Hexachlorobenzene	3.04E+00	(1)	1.03E+02	(4)	1.83E+00	(8)	1.83E+00	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
Hexachlorobutadiene	6.11E+01	(1)	2.38E+02	(4)	5.91E+00	(8)	5.91E+00	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
Hexachlorocyclopentadiene	3.67E+02	(1)	8.11E+02	(4)	2.43E+02	(8)	2.43E+02	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401

Table 8
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Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	SWMU 14-7 (23.5-24')	SWMU 14-7 (6-8')	SWMU 14-8 (0-0.5')	SWMU 14-8 (1.5-2.0')	SWMU 14-9 (0-0.5')	SWMU 14-9 (1.5-2')	SWMU 14-9 (13-14')	SWMU 14-9 (4-6')	SWMU 14-10 (0-0.5')	SWMU 14-10 (1.5-2.0')	SWMU 14-11 (0-0.5')	SWMU 14-11 (1.5-2.0')	SWMU 14-12 (0-0.5')
									1207922-009 7/18/2012	1207922-008 7/18/2012	1207940-003 7/19/2012	1207940-004 7/19/2012	1207922-001 7/18/2012	1207922-003 7/18/2012	1207922-005 7/18/2012	1207922-004 7/18/2012	1207940-001 7/19/2012	1207940-002 7/19/2012	1207940-012 7/19/2012	1207940-013 7/19/2012	1207940-006 7/19/2012
Hexachloroethane	4.28E+01	(1)	1.67E+02	(4)	3.77E+00	(8)	3.77E+00	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
Indeno(1,2,3-cd)pyrene	1.48E+00	(1)	2.13E+02	(4)	3.98E+02	(8)	1.48E+00	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
Isophorone	5.12E+03	(1)	4.75E+04	(4)	8.84E+01	(8)	8.84E+01	-	<0.498	<0.996	<2.504	<2.494	<2.477	<2.485	<0.504	<1.004	<2.514	<2.473	<2.493	<2.511	<1.001
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	1.64E+00	(8)	1.64E+00	-	<0.199	2.2	<1.002	1.5	<0.991	<0.994	<0.202	1.8	<1.006	<0.989	<0.997	<1.004	6.6
Nitrobenzene	5.35E+01	(1)	3.32E+02	(4)	2.88E-01	(8)	2.88E-01	-	<0.498	<0.996	<2.504	<2.494	<2.477	<2.485	<0.504	<1.004	<2.514	<2.473	<2.493	<2.511	<1.001
N-Nitrosodi-n-propylamine	6.90E-01	(3)	2.50E-01	(6)	3.23E-03	(8)	3.23E-03	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
N-Nitrosodiphenylamine	9.93E+02	(1)	3.36E+04	(4)	2.61E+02	(8)	2.61E+02	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	<0.401
Pentachlorophenol	8.94E+00	(1)	3.10E+02	(4)	5.90E+00	(8)	5.90E+00	-	<0.399	<0.797	<2.003	<1.995	<1.982	<1.988	<0.403	<0.803	<2.011	<1.978	<1.995	<2.009	<0.801
Phenanthrene	1.83E+03	(1)	7.15E+03	(4)	1.32E+04	(8)	1.83E+03	-	<0.199	2	<1.002	1.1	1.7	<0.994	<0.202	1.1	<1.006	<0.989	<0.997	<1.004	7.3
Phenol	1.83E+04	(1)	6.88E+04	(4)	2.29E+03	(8)	2.29E+03	-	<0.199	<0.398	<1.002	<0.998	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	2.1
Pyrene	1.72E+03	(1)	6.68E+03	(4)	4.12E+04	(8)	1.72E+03	-	<0.199	0.25	<1.002	0.6	<0.991	<0.994	<0.202	<0.401	<1.006	<0.989	<0.997	<1.004	1.1
Pyridine	7.80E+01	(2)	1.00E+03	(5)	2.44E+00	(8)	2.44E+00	-	<0.498	<0.996	<2.504	<2.494	<2.477	<2.485	<0.504	<1.004	<2.514	<2.473	<2.493	<2.511	<1.001
Total Petroleum Hydrocarbons - (EPA Method 8015B) mg/kg																					
Diesel Range Organics (DRO)	1.00E+03	(10)	1.00E+03	(10)	1.00E+03	(10)	-	-	<10	1000	550	**4300**	1000	**1200**	<10	**1800**	350	240	350	350	**15000**
Gasoline Range Organics (GRO)	-	-	-	-	-	-	-	-	3.4	150	7.9	170	20	<50	1.1	59	3.7	7.5	5.8	27	700
Motor Oil Range Organics (MRO)	3.00E+03	(11)	3.00E+03	(11)	3.00E+03	(11)	-	-	<50	<499	<1010	<994	<990	<988	<50	<490	190	150	150	80	790

-- No screening level or analytical result available

NMED - Risk Assessment Guidance for Site Investigations and Remediation (June 14, 2012)

EPA - Regional Screening Levels (November 2012)

(1) NMED Residential Screening Level

(2) EPA Residential Screening Level

(3) EPA Residential - Screening Levels (November 2012) multiplied by 10 because the constituent is listed as carcinogenic

(4) NMED Construction Worker Screening Level

(5) EPA Industrial - Screening Levels (Nov. 2012)

(6) EPA Industrial - Screening Levels (Nov. 2012) multiplied by 10

(7) SoilGW NMED Dilution Attenuation Factor (DAF) = 461

(8) SoilGW Risk-based EPA DAF = 461

(9) SoilGW MCL-based EPA DAF = 461

(10) NMED Table 6-2 TPH Screening Guidelines for Potable Groundwater "uknown oil" with DAF = 1.0 - see report Section 5 for use of screening levels

(11) NMED Table 6-2 TPH Screening Guidelines for Potable Groundwater "waste oil" with DAF = 1.0 - see report Section 5 for use of screening levels

(12) Background concentrations to be determined.

Bold represents value above Residential Screening Level

yellow highlight represents value above Leachate (DAF) Screening Level

Bold with yellow - value exceeds Residential Screening Level and

Table 8
Old API Separator Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	SWMU 14-12 (1.5-2.0')	SWMU 14-13 (0-0.5')	SWMU 14-13 (1.5-2.0')	SWMU 14-14 (0-0.5')	SWMU 14-14 (1.5-2.0')	SWMU 14-15 (0-0.5')	SWMU 14-15 (1.5-2.0')	SWMU 14-16 (0-0.5')	SWMU 14-16 (1.5-2.0')	SWMU 14-17 (0-0.5')	SWMU 14-17 (1.5-2.0')	SWMU 14-18 (0-0.5')	SWMU 14-18 (1.5-2.0')
									1207940-007 7/19/2012	1207940-008 7/19/2012	1207940-009 7/19/2012	1207940-010 7/19/2012	1207940-011 7/19/2012	1207940-025 7/19/2012	1207940-026 7/19/2012	1207940-023 7/19/2012	1207940-024 7/19/2012	1207940-021 7/19/2012	1207940-022 7/19/2012	1207940-014 7/19/2012	1207940-015 7/19/2012
Metals (mg/kg)																					
Antimony	3.13E+01	(1)	1.24E+02	(4)	3.05E+02	(8)	3.13E+01	-	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5
Arsenic	3.90E+00	(1)	5.30E+01	(4)	6.05E+00	(8)	3.90E+00	-	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5
Barium	1.56E+04	(1)	4.35E+03	(4)	1.39E+05	(8)	4.35E+03	-	120	350	230	980	190	670	650	550	1000	850	600	620	680
Beryllium	1.56E+02	(1)	1.44E+02	(4)	2.66E+04	(8)	1.44E+02	-	0.95	0.97	1	0.93	1	0.67	0.51	0.62	0.73	0.86	0.87	0.86	0.76
Cadmium	7.03E+01	(1)	2.77E+02	(4)	6.33E+02	(8)	7.03E+01	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium III	1.17E+05	(1)	4.65E+05	(4)	4.54E+10	(8)	1.17E+05	-	12	17	13	18	11	14	8.9	13	15	20	25	25	26
Chromium VI	2.97E+00	(1)	6.56E+01	(4)	3.83E+00	(8)	2.97E+00	-	12	17	13	18	11	14	8.9	13	15	20	25	25	26
Cobalt	2.30E+01	(2)	3.00E+02	(5)	9.68E+01	(8)	2.30E+01	-	5.3	5.7	5.7	5.7	4.9	4.7	3.6	4.4	4.5	5.4	5.4	5.2	5.5
Cyanide	4.69E+01	(1)	1.86E+02	(4)	1.02E+02	(8)	4.69E+01	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.33	<0.5	1.22	1.5
Iron	5.48E+04	(1)	2.17E+05	(4)	2.98E+05	(8)	5.48E+04	-	15000	8400	16000	16000	14000	12000	7300	11000	15000	17000	15000	16000	15000
Lead	4.00E+02	(1)	8.00E+02	(4)	6.45E+03	(8)	4.00E+02	-	2.6	2	3.3	3.3	2.9	4.1	1.3	4.8	5.1	7.1	3.2	10	14
Manganese	1.86E+03	(1)	4.40E+02	(4)	2.64E+04	(8)	4.40E+02	-	300	340	390	350	240	540	360	1100	560	560	640	580	540
Mercury	1.56E+01	(1)	1.36E+01	(4)	1.51E+01	(8)	1.36E+01	-	0.097	0.14	<0.033	0.33	0.0074	0.13	0.22	0.062	0.052	1.3	0.12	0.2	0.15
Nickel	1.56E+03	(1)	6.19E+03	(4)	2.20E+04	(8)	1.56E+03	-	8.7	9.1	9.5	9.1	8.1	8.2	5.6	6.9	7.1	12	8.7	8.5	8.9
Selenium	3.91E+02	(1)	1.55E+03	(4)	4.45E+02	(8)	3.91E+02	-	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5
Silver	3.91E+02	(1)	1.55E+03	(4)	7.22E+02	(8)	3.91E+02	-	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25
Vanadium	3.91E+02	(1)	1.55E+03	(4)	8.42E+04	(8)	3.91E+02	-	22	26	23	27	21	23	20	22	25	28	27	30	26
Zinc	2.35E+04	(1)	9.29E+04	(4)	3.14E+05	(8)	2.35E+04	-	18	36	19	34	19	140	68	69	25	230	37	68	65
Volatile Organic Compounds - (EPA Method 8260) mg/kg																					
1,1,1,2-Tetrachloroethane	2.91E+01	(1)	7.79E+02	(4)	7.59E-01	(8)	7.59E-01	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	<0.001	<1	<0.001	<2.5
1,1,1-Trichloroethane	1.56E+04	(1)	1.48E+04	(4)	1.34E+03	(8)	1.34E+03	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	<0.001	<1	<0.001	<2.5
1,1,2,2-Tetrachloroethane	8.02E+00	(1)	2.21E+02	(4)	9.82E-02	(8)	9.82E-02	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	<0.001	<1	<0.001	<2.5
1,1,2-Trichloroethane	2.81E+00	(1)	4.72E+02	(4)	5.14E-02	(8)	5.14E-02	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	<0.001	1	<0.001	<2.5
1,1-Dichloroethane	6.45E+01	(1)	1.70E+03	(4)	2.75E+00	(8)	2.75E+00	-	<5	<2	<1	<5	<1	<0.001	<5	<0.001	<2	<0.001	<2	<0.001	<5
1,1-Dichloroethene	4.49E+02	(1)	4.32E+02	(4)	5.36E+01	(8)	5.36E+01	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	<0.001	<1	<0.001	<2.5
1,1-Dichloropropene	-	-	-	-	-	-	-	-	<5	<2	<1	<5	<1	<0.001	<5	<0.001	<2	<0.001	<2	<0.001	<5
1,2,3-Trichlorobenzene	4.90E+01	(2)	4.90E+02	(5)	6.92E+00	(8)	6.92E+00	-	<5	<2	<1	<5	<1	<0.001	<5	<0.001	<2	<0.001	<2	<0.001	<5
1,2,3-Trichloropropane	4.97E-02	(1)	7.23E+00	(4)	1.15E-03	(8)	1.15E-03	-	<5	<2	<1	<5	<1	<0.001	<5	<0.001	<2	<0.001	<2	<0.001	<5
1,2,4-Trichlorobenzene	7.30E+01	(1)	6.87E+01	(4)	4.21E+00	(8)	4.21E+00	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	<0.001	<1	<0.001	<2.5
1,2,4-Trimethylbenzene	6.20E+01	(2)	2.60E+02	(5)	9.68E+00	(8)	9.68E+00	-	22	3.7	3.5	38	4.8	<0.001	44	<0.001	3.6	<0.001	33	<0.001	37
1,2-Dibromo-3-chloropropane	1.86E+00	(1)	5.07E+00	(4)	5.07E-04	(8)	5.07E-04	-	<5	<2	<1	<5	<1	<0.002	<5	<0.002	<2	<0.002	<2	<0.002	<5
1,2-Dibromoethane (EDB)	5.88E-01	(1)	1.60E+01	(4)	7.10E-03	(8)	7.10E-03	-	0.56	0.15	0.14	1	0.17	<0.001	<2.5	<0.001	0.21	<0.001	0.9	<0.001	1.2
1,2-Dichlorobenzene	2.31E+03	(1)	2.71E+03	(4)	1.29E+02	(8)	1.29E+02	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	<0.001	<1	<0.001	<2.5
1,2-Dichloroethane (EDC)	7.89E+00	(1)	5.87E+01	(4)	1.64E-01	(8)	1.64E-01	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	<0.001	<1	<0.001	<2.5
1,2-Dichloropropane	1.52E+01	(1)	2.50E+01	(4)	4.94E-01	(8)	4.94E-01	-	0.46	<1	<0.5	0.48	0.089	<0.002	<2.5	<0.002	<1	<0.002	0.33	<0.002	0.82
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.00E+04	(5)	5.53E+01	(8)	5.53E+01	-	6.3	1.4	0.93	12	0.87	<0.001	16	<0.001	1.1	<0.001	7.8	<0.001	13
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	<0.001	<1	<0.001	<2.5
1,3-Dichloropropane	1.60E+03	(2)	2.00E+04	(5)	4.56E+01	(8)	4.56E+01	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	<0.001	<1	<0.001	<2.5
1,4-Dichlorobenzene	3.17E+01	(1)	8.31E+02	(4)	1.47E+00	(8)	1.47E+00	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	<0.001	<1	<0.001	<2.5
1-Methylnaphthalene	1.60E+02	(3)	5.30E+01	(6)	2.35E+00	(8)	2.35E+00	-	21	12	2.6	31	3.3	<0.004	6.7	<0.004	12	<0.004	38	<0.004	12
2,2-Dichloropropane	-	-	-	-	-	-	-	-	<5	<2	<1	<5	<1	<0.001	<5	<0.001	<2	<0.001	<2	<0.001	<5
2-Butanone (MEK)	3.71E+04	(1)	8.43E+04	(4)	5.87E+02	(8)	5.87E+02	-	<25	<10	<5	<25	<5	<0.005	<25	<0.005	<10	0.00152	<10	<0.005	<25
2-Chlorotoluene	1.56E+03	(1)	6.19E+03	(4)	2.57E+02	(8)	2.57E+02	-	<2.5	<1	0.053	0.46	<0.5	<0.001	<2.5	<0.001	0.11	<0.001	0.22	<0.001	<2.5
2-Hexanone	9.38E+02	(1)	9.73E+02	(4)	3.53E+03	(8)	9.38E+02	-	<25	<10	<5	<25	<5	<0.005	<25	<0.005	0.37	<0.005	<10	<0.005	<25
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	6.45E+01	(8)	6.45E+01	-	36	13	4.6	55	6.1	<0.004	9.8	<0.004	9.6	<0.004	60	<0.004	20
4-Chlorotoluene	1.60E+03	(2)	2.00E+04	(5)	8.30E+01	(8)	8.30E+01	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	<0.001	<1	<0.001	<2.5
4-Isopropyltoluene	-	-	-	-	-	-	-	-	1.3	0.38	0.22	1.7	0.29	<0.001	3.4	<0.001	0.27	<0.001	2.7	<0.001	1.9

Table 8
Old API Separator Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	SWMU 14-12 (1.5-2.0')	SWMU 14-13 (0-0.5')	SWMU 14-13 (1.5-2.0')	SWMU 14-14 (0-0.5')	SWMU 14-14 (1.5-2.0')	SWMU 14-15 (0-0.5')	SWMU 14-15 (1.5-2.0')	SWMU 14-16 (0-0.5')	SWMU 14-16 (1.5-2.0')	SWMU 14-17 (0-0.5')	SWMU 14-17 (1.5-2.0')	SWMU 14-18 (0-0.5')	SWMU 14-18 (1.5-2.0')
									1207940-007 7/19/2012	1207940-008 7/19/2012	1207940-009 7/19/2012	1207940-010 7/19/2012	1207940-011 7/19/2012	1207940-025 7/19/2012	1207940-026 7/19/2012	1207940-023 7/19/2012	1207940-024 7/19/2012	1207940-021 7/19/2012	1207940-022 7/19/2012	1207940-014 7/19/2012	1207940-015 7/19/2012
4-Methyl-2-pentanone	5.30E+03	(2)	5.30E+04	(5)	1.06E+02	(8)	1.06E+02	-	<25	<10	<5	<25	<5	<0.005	<25	<0.005	<10	<0.005	<10	<0.005	<25
Acetone	6.66E+04	(1)	2.21E+05	(4)	1.78E+03	(8)	1.78E+03	-	47	4.1	3.6	13	3.8	<0.029	35	<0.027	4.1	0.00602	12	<0.033	34
Benzene	1.54E+01	(1)	1.38E+02	(4)	7.96E-01	(8)	7.96E-01	-	2.9	<1	0.48	<2.5	0.84	<0.001	2.8	<0.001	0.46	0.00129	1.6	<0.001	2.2
Bromobenzene	3.00E+02	(2)	1.80E+03	(5)	1.66E+01	(8)	1.66E+01	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	<0.001	<1	<0.001	<2.5
Bromodichloromethane	5.41E+00	(1)	1.43E+02	(4)	1.25E-01	(8)	1.25E-01	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	<0.001	<1	<0.001	<2.5
Bromoform	6.16E+02	(1)	4.76E+03	(4)	2.78E+02	(8)	2.78E+02	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	<0.001	<1	<0.001	<2.5
Bromomethane	1.65E+01	(1)	1.64E+01	(4)	8.86E-01	(8)	8.86E-01	-	<7.5	<3	<1.5	<7.5	<1.5	-	<7.5	-	<3	-	<3	-	<7.5
Carbon disulfide	1.53E+03	(1)	1.58E+03	(4)	1.30E+02	(8)	1.30E+02	-	<25	<10	<5	<25	<5	<0.005	<25	<0.005	<10	<0.005	<10	<0.005	<25
Carbon tetrachloride	1.08E+01	(1)	2.26E+02	(4)	7.39E-01	(8)	7.39E-01	-	<5	<2	<1	<5	<1	<0.001	<5	<0.001	<2	<0.001	<2	<0.001	<5
Chlorobenzene	3.76E+02	(1)	4.06E+02	(4)	2.27E+01	(8)	2.27E+01	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	<0.001	0.11	<0.001	<2.5
Chloroethane	2.98E+04	(1)	2.61E+04	(4)	2.48E+03	(8)	2.48E+03	-	<5	<2	<1	<5	<1	<0.001	<5	<0.001	<2	<0.001	<2	<0.001	<5
Chloroform	5.86E+00	(1)	1.54E+02	(4)	2.12E-01	(8)	2.12E-01	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	<0.001	<1	<0.001	<2.5
Chloromethane	2.75E+02	(1)	2.41E+02	(4)	2.03E+01	(8)	2.03E+01	-	<7.5	<3	<1.5	<7.5	<1.5	<0.001	<7.5	<0.001	<3	0.000352	<3	<0.001	<7.5
cis-1,2-DCE	1.56E+02	(1)	6.19E+02	(4)	8.47E+00	(8)	8.47E+00	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	<0.001	<1	<0.001	<2.5
cis-1,3-Dichloropropene	3.37E+01	(1)	2.09E+02	(4)	5.71E-01	(8)	5.71E-01	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	<0.001	<1	<0.001	<2.5
Dibromochloromethane	1.21E+01	(1)	3.32E+02	(4)	1.52E-01	(8)	1.52E-01	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	<0.001	<1	<0.001	<2.5
Dibromomethane	5.16E+01	(1)	3.10E+03	(4)	7.89E-01	(8)	7.89E-01	-	<5	<2	<1	<5	<1	<0.001	<5	<0.001	<2	<0.001	<2	<0.001	<5
Dichlorodifluoromethane	1.68E+02	(1)	1.49E+02	(4)	1.71E+02	(8)	1.49E+02	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	<0.001	<1	<0.001	<2.5
Ethylbenzene	6.84E+01	(1)	1.83E+03	(4)	5.98E+00	(8)	5.98E+00	-	7.5	0.47	1.3	4.3	1.7	<0.001	23	<0.001	0.67	<0.001	13	<0.001	17
Hexachlorobutadiene	6.11E+01	(1)	2.38E+02	(4)	5.91E+00	(8)	5.91E+00	-	<5	<2	<1	<5	<1	<0.001	<5	<0.001	<2	<0.001	<2	<0.001	<5
Isopropylbenzene	2.43E+03	(1)	2.81E+03	(4)	3.99E+02	(8)	3.99E+02	-	1.6	0.2	0.28	1.6	0.39	<0.001	6.6	<0.001	0.13	<0.001	2.9	<0.001	3.5
Methyl tert-butyl ether (MTBE)	9.01E+02	(1)	2.49E+04	(4)	1.11E+01	(8)	1.11E+01	-	1.5	<1	0.19	<2.5	0.2	<0.002	<2.5	<0.002	<1	<0.002	0.16	<0.002	<2.5
Methylene chloride	4.09E+02	(1)	1.12E+03	(4)	1.90E+01	(8)	1.90E+01	-	0.31	<3	0.24	0.35	0.24	<0.005	2	<0.005	0.63	<0.005	0.14	<0.005	0.31
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	1.64E+00	(8)	1.64E+00	-	10	1.8	1.2	11	1.4	<0.001	3.6	<0.001	3.9	<0.001	17	0.000458	8.8
n-Butylbenzene	3.90E+03	(2)	5.10E+04	(5)	1.15E+03	(8)	1.15E+03	-	2.4	0.66	0.4	3.3	0.51	<0.001	3.8	<0.001	0.31	<0.001	4.6	<0.001	2.8
n-Propylbenzene	3.40E+03	(2)	2.10E+04	(5)	4.56E+02	(8)	4.56E+02	-	3.6	0.47	0.55	4	0.73	<0.001	8.1	<0.001	0.22	<0.001	4.9	<0.001	5.7
sec-Butylbenzene	-	-	-	-	-	-	-	-	1.4	0.28	0.23	1.6	0.3	<0.001	3.8	<0.001	0.17	<0.001	2.9	<0.001	2
Styrene	7.28E+03	(1)	9.99E+03	(4)	6.40E+02	(8)	6.40E+02	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	<0.001	<1	<0.001	<2.5
tert-Butylbenzene	-	-	-	-	-	-	-	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	<0.001	<1	<0.001	<2.5
Tetrachloroethene (PCE)	7.02E+00	(1)	2.12E+02	(4)	1.98E-01	(8)	1.98E-01	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	<0.001	<1	<0.001	<2.5
Toluene	5.27E+03	(1)	1.34E+04	(4)	5.84E+02	(8)	5.84E+02	-	14	0.15	0.61	1.3	0.83	<0.001	<2.5	0.00033	<1	0.00273	0.17	0.00075	<2.5
trans-1,2-DCE	2.70E+02	(1)	2.73E+02	(4)	1.24E+01	(8)	1.24E+01	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	<0.001	<1	<0.001	<2.5
trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	<0.001	<1	<0.001	<2.5
Trichloroethene (TCE)	8.77E+00	(1)	7.68E+00	(4)	4.85E-01	(8)	4.85E-01	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	<0.001	<1	<0.001	<2.5
Trichlorofluoromethane	1.41E+03	(1)	1.30E+03	(4)	4.10E+02	(8)	4.10E+02	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	0.000414	<1	<0.001	<2.5
Vinyl chloride	7.28E-01	(1)	1.49E+02	(4)	2.50E-02	(8)	2.50E-02	-	<2.5	<1	<0.5	<2.5	<0.5	<0.001	<2.5	<0.001	<1	<0.001	<1	<0.001	<2.5
Xylenes, Total	8.14E+02	(1)	7.43E+02	(4)	7.21E+01	(8)	7.21E+01	-	36	2.4	5.5	45	5.3	<0.003	120	<0.003	1.1	<0.003	14	<0.003	53
Semi Volatile Organics - (EPA Method 8270) mg/kg																					
1,2,4-Trichlorobenzene	7.30E+01	(1)	6.87E+01	(4)	4.21E+00	(8)	4.21E+00	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
1,2-Dichlorobenzene	2.31E+03	(1)	2.71E+03	(4)	1.29E+02	(8)	1.29E+02	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
1,4-Dichlorobenzene	3.17E+01	(1)	8.31E+02	(4)	1.47E+00	(8)	1.47E+00	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
1-Methylnaphthalene	1.60E+02	(3)	5.30E+01	(6)	2.35E+00	(8)	2.35E+00	-	5.2	1.6	1.4	18	17	<1.003	4.4	<1.006	6.3	<1.979	29	<0.995	4.5
2,4,5-Trichlorophenol	6.11E+03	(1)	2.38E+04	(4)	4.78E+03	(8)	4.78E+03	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
2,4,6-Trichlorophenol	6.11E+01	(1)	2.38E+02	(4)	4.78E+01	(8)	4.78E+01	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
2,4-Dichlorophenol	1.83E+02	(1)	7.15E+02	(4)	4.60E+01	(8)	4.60E+01	-	<0.805	<0.401	<0.398	<2.004	<1.983	<2.005	<1.996	<2.012	<2	<3.958	<2.007	<1.989	<3.991
2,4-Dimethylphenol	1.22E+03	(1)	4.76E+03	(4)	3.07E+02	(8)	3.07E+02	-	<0.603	<0.301	0.29	<1.503	<1.488	<1.504	<1.497	<1.509	<1.5	<2.968	<1.506	<1.492	<2.993
2,4-Dinitrophenol	1.22E+02	(1)	4.76E+02	(4)	2.91E+01	(8)	2.91E+01	-	<0.805	0.16	0.12	0.59	0.66	<2.005	0.49	0.46	<2	<3.958	0.53	0.46	<3.991

Table 8
Old API Separator Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	SWMU 14-12 (1.5-2.0')	SWMU 14-13 (0-0.5')	SWMU 14-13 (1.5-2.0')	SWMU 14-14 (0-0.5')	SWMU 14-14 (1.5-2.0')	SWMU 14-15 (0-0.5')	SWMU 14-15 (1.5-2.0')	SWMU 14-16 (0-0.5')	SWMU 14-16 (1.5-2.0')	SWMU 14-17 (0-0.5')	SWMU 14-17 (1.5-2.0')	SWMU 14-18 (0-0.5')	SWMU 14-18 (1.5-2.0')
									1207940-007 7/19/2012	1207940-008 7/19/2012	1207940-009 7/19/2012	1207940-010 7/19/2012	1207940-011 7/19/2012	1207940-025 7/19/2012	1207940-026 7/19/2012	1207940-023 7/19/2012	1207940-024 7/19/2012	1207940-021 7/19/2012	1207940-022 7/19/2012	1207940-014 7/19/2012	1207940-015 7/19/2012
2,4-Dinitrotoluene	1.57E+01	(1)	4.76E+02	(4)	1.04E+00	(8)	1.04E+00	-	<1.006	<0.502	<0.498	<2.505	<2.479	<2.507	<2.495	<2.515	<2.5	<4.947	<2.509	<2.487	<4.988
2,6-Dinitrotoluene	6.11E+01	(1)	2.38E+02	(4)	1.77E+01	(8)	1.77E+01	-	<1.006	<0.502	<0.498	<2.505	<2.479	<2.507	<2.495	<2.515	<2.5	<4.947	<2.509	<2.487	<4.988
2-Chloronaphthalene	6.11E+01	(1)	2.94E+02	(4)	4.01E-01	(8)	4.01E-01	-	<0.503	<0.251	<0.249	<1.253	<1.24	<1.253	<1.248	<1.258	<1.25	<2.474	<1.255	<1.243	<2.494
2-Chlorophenol	3.91E+02	(1)	1.55E+03	(4)	5.33E+01	(8)	5.33E+01	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	6.45E+01	(8)	6.45E+01	-	7.7	0.81	2.3	28	27	<1.003	6.7	<1.006	6.1	<1.979	38	<0.995	7
2-Methylphenol	3.10E+03	(2)	3.10E+04	(5)	2.67E+02	(8)	2.67E+02	-	1.1	<0.502	<0.498	<2.505	<2.479	<2.507	<2.495	<2.515	<2.5	<4.947	<2.509	<2.487	<4.988
2-Nitroaniline	6.10E+02	(2)	6.00E+03	(5)	2.86E+01	(8)	2.86E+01	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
2-Nitrophenol	-	-	-	-	-	-	-	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
3,3'-Dichlorobenzidine	1.08E+01	(1)	3.64E+02	(4)	3.41E+00	(8)	3.41E+00	-	<0.503	<0.251	<0.249	<1.253	<1.24	<1.253	<1.248	<1.258	<1.25	<2.474	<1.255	<1.243	<2.494
3+4-Methylphenol	-	-	-	-	-	-	-	-	2.2	<0.201	0.088	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
3-Nitroaniline	-	-	-	-	-	-	-	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
4,6-Dinitro-2-methylphenol	4.90E+00	(2)	4.90E+01	(5)	9.22E-01	(8)	9.22E-01	-	<1.006	<0.502	<0.498	<2.505	<2.479	<2.507	<2.495	<2.515	<2.5	<4.947	<2.509	<2.487	<4.988
4-Bromophenyl phenyl ether	-	-	-	-	-	-	-	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
4-Chloro-3-methylphenol	6.10E+03	(2)	6.20E+04	(5)	5.99E+02	(8)	5.99E+02	-	<1.006	<0.502	<0.498	<2.505	<2.479	<2.507	<2.495	<2.515	<2.5	<4.947	<2.509	<2.487	<4.988
4-Chloroaniline	2.40E+01	(3)	8.60E+00	(6)	5.99E-02	(8)	5.99E-02	-	<1.006	<0.502	<0.498	<2.505	<2.479	<2.507	<2.495	<2.515	<2.5	<4.947	<2.509	<2.487	<4.988
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	-	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
4-Nitroaniline	2.40E+02	(3)	8.60E+01	(6)	6.45E-01	(8)	6.45E-01	-	<0.805	<0.401	<0.398	<2.004	<1.983	<2.005	<1.996	<2.012	<2	<3.958	<2.007	<1.989	<3.991
4-Nitrophenol	-	-	-	-	-	-	-	-	<0.503	<0.251	<0.249	<1.253	<1.24	<1.253	<1.248	<1.258	<1.25	<2.474	<1.255	<1.243	<2.494
Acenaphthene	3.44E+03	(1)	1.86E+04	(4)	7.79E+03	(8)	3.44E+03	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
Acenaphthylene	-	-	-	-	-	-	-	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
Aniline	8.50E+02	(3)	3.00E+02	(6)	1.80E+00	(8)	1.80E+00	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
Anthracene	1.72E+04	(1)	6.68E+04	(4)	1.25E+05	(8)	1.72E+04	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
Azobenzene	5.10E+01	(3)	2.30E+01	(6)	3.69E-01	(8)	3.69E-01	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
Benz(a)anthracene	1.48E+00	(1)	2.13E+02	(4)	3.61E+01	(8)	1.48E+00	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	0.61	<1.006	<1	<1.979	<1.004	<0.995	<1.995
Benzo(a)pyrene	1.48E-01	(1)	2.13E+01	(4)	1.20E+01	(8)	1.48E-01	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
Benzo(b)fluoranthene	1.48E+00	(1)	2.13E+02	(4)	1.22E+02	(8)	1.48E+00	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
Benzo(g,h,i)perylene	-	-	-	-	-	-	-	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
Benzo(k)fluoranthene	1.48E+01	(1)	2.06E+03	(4)	1.20E+03	(8)	1.48E+01	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
Benzoic acid	2.40E+05	(2)	2.50E+06	(5)	6.45E+03	(8)	6.45E+03	-	<1.006	<0.502	<0.498	<2.505	<2.479	<2.507	<2.495	<2.515	<2.5	<4.947	<2.509	<2.487	<4.988
Benzyl alcohol	6.10E+03	(2)	6.20E+04	(5)	1.71E+02	(8)	1.71E+02	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
Bis(2-chloroethoxy)methane	1.80E+02	(2)	1.80E+03	(5)	5.07E+00	(8)	5.07E+00	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
Bis(2-chloroethyl)ether	2.68E+00	(1)	7.78E+01	(4)	1.21E-02	(8)	1.21E-02	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	0.43	<1.006	<1	<1.979	<1.004	<0.995	<1.995
Bis(2-chloroisopropyl)ether	9.15E+01	(1)	3.10E+03	(4)	1.07E+00	(8)	1.07E+00	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
Bis(2-ethylhexyl)phthalate	3.47E+02	(1)	4.76E+03	(4)	3.97E+03	(8)	3.47E+02	-	<1.006	<0.502	<0.498	<2.505	<2.479	<2.507	1.1	<2.515	<2.5	<4.947	<2.509	<2.487	<4.988
Butyl benzyl phthalate	2.60E+03	(3)	9.10E+02	(6)	9.22E+01	(8)	9.22E+01	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
Carbazole	-	-	-	-	-	-	-	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
Chrysene	1.48E+02	(1)	2.06E+04	(4)	3.68E+03	(8)	1.48E+02	-	<0.402	0.16	<0.199	<1.002	<0.992	<1.003	0.65	<1.006	<1	<1.979	<1.004	<0.995	<1.995
Dibenz(a,h)anthracene	1.48E-01	(1)	2.13E+01	(4)	3.90E+01	(8)	1.48E-01	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
Dibenzofuran	7.80E+01	(2)	1.00E+03	(5)	5.07E+01	(8)	5.07E+01	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
Diethyl phthalate	4.89E+04	(1)	1.91E+05	(4)	4.45E+03	(8)	4.45E+03	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(4)	3.71E+04	(8)	3.71E+04	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
Di-n-butyl phthalate	6.11E+03	(1)	2.38E+04	(4)	3.21E+03	(8)	3.21E+03	-	<1.006	<0.502	<0.498	<2.505	<2.479	<2.507	<2.495	<2.515	<2.5	<4.947	<2.509	<2.487	<4.988
Di-n-octyl phthalate	-	-	-	-	-	-	-	-	<0.503	<0.251	<0.249	<1.253	<1.24	<1.253	<1.248	<1.258	<1.25	<2.474	<1.255	<1.243	<2.494
Fluoranthene	2.29E+03	(1)	8.91E+03	(4)	5.61E+04	(8)	2.29E+03	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
Fluorene	2.29E+03	(1)	8.91E+03	(4)	9.36E+03	(8)	2.29E+03	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	0.86	<1.006	<1	<1.979	3	<0.995	<1.995
Hexachlorobenzene	3.04E+00	(1)	1.03E+02	(4)	1.83E+00	(8)	1.83E+00	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
Hexachlorobutadiene	6.11E+01	(1)	2.38E+02	(4)	5.91E+00	(8)	5.91E+00	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
Hexachlorocyclopentadiene	3.67E+02	(1)	8.11E+02	(4)	2.43E+02	(8)	2.43E+02	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995

Table 8
Old API Separator Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	SWMU 14-12 (1.5-2.0')	SWMU 14-13 (0-0.5')	SWMU 14-13 (1.5-2.0')	SWMU 14-14 (0-0.5')	SWMU 14-14 (1.5-2.0')	SWMU 14-15 (0-0.5')	SWMU 14-15 (1.5-2.0')	SWMU 14-16 (0-0.5')	SWMU 14-16 (1.5-2.0')	SWMU 14-17 (0-0.5')	SWMU 14-17 (1.5-2.0')	SWMU 14-18 (0-0.5')	SWMU 14-18 (1.5-2.0')
									1207940-007 7/19/2012	1207940-008 7/19/2012	1207940-009 7/19/2012	1207940-010 7/19/2012	1207940-011 7/19/2012	1207940-025 7/19/2012	1207940-026 7/19/2012	1207940-023 7/19/2012	1207940-024 7/19/2012	1207940-021 7/19/2012	1207940-022 7/19/2012	1207940-014 7/19/2012	1207940-015 7/19/2012
Hexachloroethane	4.28E+01	(1)	1.67E+02	(4)	3.77E+00	(8)	3.77E+00	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
Indeno(1,2,3-cd)pyrene	1.48E+00	(1)	2.13E+02	(4)	3.98E+02	(8)	1.48E+00	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
Isophorone	5.12E+03	(1)	4.75E+04	(4)	8.84E+01	(8)	8.84E+01	-	<1.006	<0.502	<0.498	<2.505	<2.479	<2.507	<2.495	<2.515	<2.5	<4.947	<2.509	<2.487	<4.988
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	1.64E+00	(8)	1.64E+00	-	1.6	<0.201	0.65	3.7	4.3	<1.003	1.7	<1.006	1.4	<1.979	7.1	<0.995	2.8
Nitrobenzene	5.35E+01	(1)	3.32E+02	(4)	2.88E-01	(8)	2.88E-01	-	<1.006	<0.502	<0.498	<2.505	<2.479	<2.507	<2.495	<2.515	<2.5	<4.947	<2.509	<2.487	<4.988
N-Nitrosodi-n-propylamine	6.90E-01	(3)	2.50E-01	(6)	3.23E-03	(8)	3.23E-03	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
N-Nitrosodiphenylamine	9.93E+02	(1)	3.36E+04	(4)	2.61E+02	(8)	2.61E+02	-	<0.402	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
Pentachlorophenol	8.94E+00	(1)	3.10E+02	(4)	5.90E+00	(8)	5.90E+00	-	<0.805	<0.401	<0.398	<2.004	<1.983	<2.005	<1.996	<2.012	<2	<3.958	<2.007	<1.989	<3.991
Phenanthrene	1.83E+03	(1)	7.15E+03	(4)	1.32E+04	(8)	1.83E+03	-	1.2	1.4	0.6	6.6	6.2	<1.003	2.8	<1.006	1.7	<1.979	9.8	<0.995	2.2
Phenol	1.83E+04	(1)	6.88E+04	(4)	2.29E+03	(8)	2.29E+03	-	2.8	<0.201	<0.199	<1.002	<0.992	<1.003	<0.998	<1.006	<1	<1.979	<1.004	<0.995	<1.995
Pyrene	1.72E+03	(1)	6.68E+03	(4)	4.12E+04	(8)	1.72E+03	-	<0.402	0.21	0.11	1	0.68	<1.003	0.9	<1.006	<1	<1.979	2.6	<0.995	<1.995
Pyridine	7.80E+01	(2)	1.00E+03	(5)	2.44E+00	(8)	2.44E+00	-	<1.006	<0.502	<0.498	<2.505	<2.479	<2.507	<2.495	<2.515	<2.5	<4.947	<2.509	<2.487	<4.988
Total Petroleum Hydrocarbons - (EPA Method 8015B) mg/kg																					
Diesel Range Organics (DRO)	1.00E+03	(10)	1.00E+03	(10)	1.00E+03	(10)	-	-	**1500**	1000	**1300**	**7700**	**2800**	**1400**	**10000**	480	**4800**	**2900**	**13000**	**1200**	**14000**
Gasoline Range Organics (GRO)	-	-	-	-	-	-	-	-	370	43	58	450	60	27	1600	14	<250	<25	230	24	570
Motor Oil Range Organics (MRO)	3.00E+03	(11)	3.00E+03	(11)	3.00E+03	(11)	-	-	<486	<495	<495	<977	<496	<994	<5066	480	1100	2800	<2503	680	<2535

-- No screening level or analytical result available

NMED - Risk Assessment Guidance for Site Investigations and Remediation (June 14, 2012)

EPA - Regional Screening Levels (November 2012)

(1) NMED Residential Screening Level

(2) EPA Residential Screening Level

(3) EPA Residential - Screening Levels (November 2012) multiplied by 10 because the constituent is listed as carcinogenic

(4) NMED Construction Worker Screening Level

(5) EPA Industrial - Screening Levels (Nov. 2012)

(6) EPA Industrial - Screening Levels (Nov. 2012) multiplied by 10

(7) SoilGW NMED Dilution Attenuation Factor (DAF) = 461

(8) SoilGW Risk-based EPA DAF = 461

(9) SoilGW MCL-based EPA DAF = 461

(10) NMED Table 6-2 TPH Screening Guidelines for Potable Groundwater "uknown oil" with DAF = 1.0 - see report Section 5 for use of screening levels

(11) NMED Table 6-2 TPH Screening Guidelines for Potable Groundwater "waste oil" with DAF = 1.0 - see report Section 5 for use of screening levels

(12) Background concentrations to be determined.

Bold represents value above Residential Screening Level

yellow highlight represents value above Leachate (DAF) Screening Level

Bold with yellow - value exceeds Residential Screening Level and

Table 8
Old API Separator Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	SWMU 14-19 (0-0.5')	SWMU 14-19 (1.5-2.0')	SWMU 14-20 (0-0.5')	SWMU 14-21 (0-0.5')	SWMU 14-21 (1.5-2')	SWMU 14-21 (8-10')	SWMU 14-22 (0-0.5')	SWMU 14-22 (1.5-2')	SWMU 14-22 (4-6')	SWMU 14-22 (8-10')	SWMU 14-23 (0-0.5')	SWMU 14-23 (1.5-2')	SWMU 14-23 (12-14')	SWMU 14-23 (14-16')
									1207940-019	1207940-020	1207940-027	1210582-005	1210582-006	1210582-007	1210583-001	1210583-002	1210583-003	1210583-005	1210656-001	1210656-002	1210656-003	1210656-004
									7/19/2012	7/19/2012	7/19/2012	10/9/2012	10/9/2012	10/9/2012	10/9/2012	10/9/2012	10/9/2012	10/9/2012	10/10/2012	10/10/2012	10/10/2012	10/10/2012
Metals (mg/kg)																						
Antimony	3.13E+01	(1)	1.24E+02	(4)	3.05E+02	(8)	3.13E+01	-	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<5	<5	<5	<5	<5	<5	<5
Arsenic	3.90E+00	(1)	5.30E+01	(4)	6.05E+00	(8)	3.90E+00	-	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<4.9999	<4.9995	<4.9995	<5	<5	<5	<5
Barium	1.56E+04	(1)	4.35E+03	(4)	1.39E+05	(8)	4.35E+03	-	180	790	940	470	750	160	630	430	170	250	600	460	220	130
Beryllium	1.56E+02	(1)	1.44E+02	(4)	2.66E+04	(8)	1.44E+02	-	0.38	0.81	0.69	<0.75	<0.75	0.91	0.9	0.83	0.89	0.8	0.61	0.62	0.87	0.75
Cadmium	7.03E+01	(1)	2.77E+02	(4)	6.33E+02	(8)	7.03E+01	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chromium III	1.17E+05	(1)	4.65E+05	(4)	4.54E+10	(8)	1.17E+05	-	6.6	12	9.4	5.7	7.4	8	12	10	7.6	9.3	9.6	15	8.3	7.8
Chromium VI	2.97E+00	(1)	6.56E+01	(4)	3.83E+00	(8)	2.97E+00	-	6.6	12	9.4	5.7	7.4	8	12	10	7.6	9.3	9.6	15	8.3	7.8
Cobalt	2.30E+01	(2)	3.00E+02	(5)	9.68E+01	(8)	2.30E+01	-	3.2	4.8	5.2	3.2	3.9	4.3	5.5	4.2	4.3	3.8	3.4	3.7	4	4
Cyanide	4.69E+01	(1)	1.86E+02	(4)	1.02E+02	(8)	4.69E+01	-	<0.5	<0.5	<0.5	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.36	5.5	<0.3	<0.3
Iron	5.48E+04	(1)	2.17E+05	(4)	2.98E+05	(8)	5.48E+04	-	8200	12000	13000	11000	12000	12000	15000	14000	13000	13000	13000	12000	13000	12000
Lead	4.00E+02	(1)	8.00E+02	(4)	6.45E+03	(8)	4.00E+02	-	2.2	4.1	2.7	10	5	4.7	5.9	4.3	4	3.9	4.2	7.6	3.7	3.5
Manganese	1.86E+03	(1)	4.40E+02	(4)	2.64E+04	(8)	4.40E+02	-	300	640	650	550	550	220	550	540	370	270	720	570	300	570
Mercury	1.56E+01	(1)	1.36E+01	(4)	1.51E+01	(8)	1.36E+01	-	0.011	0.063	0.0064	<0.033	<0.033	<0.033	0.083	0.05	<0.033	<0.033	0.1	<0.033	<0.033	<0.033
Nickel	1.56E+03	(1)	6.19E+03	(4)	2.20E+04	(8)	1.56E+03	-	6.9	8	6.9	4.3	6.1	7.3	8.3	7.2	7.2	7.4	5.9	6.5	7.2	6.8
Selenium	3.91E+02	(1)	1.55E+03	(4)	4.45E+02	(8)	3.91E+02	-	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<5	<5	<5	<5	<5	<5	<5
Silver	3.91E+02	(1)	1.55E+03	(4)	7.22E+02	(8)	3.91E+02	-	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.2499	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vanadium	3.91E+02	(1)	1.55E+03	(4)	8.42E+04	(8)	3.91E+02	-	22	21	21	17	16	14	25	17	13	13	18	16	14	15
Zinc	2.35E+04	(1)	9.29E+04	(4)	3.14E+05	(8)	2.35E+04	-	18	34	17	29	22	13	33	20	13	14	140	41	13	12
Volatile Organic Compounds - (EPA Method 8260) mg/kg																						
1,1,1,2-Tetrachloroethane	2.91E+01	(1)	7.79E+02	(4)	7.59E-01	(8)	7.59E-01	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
1,1,1-Trichloroethane	1.56E+04	(1)	1.48E+04	(4)	1.34E+03	(8)	1.34E+03	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
1,1,2,2-Tetrachloroethane	8.02E+00	(1)	2.21E+02	(4)	9.82E-02	(8)	9.82E-02	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
1,1,2-Trichloroethane	2.81E+00	(1)	4.72E+02	(4)	5.14E-02	(8)	5.14E-02	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
1,1-Dichloroethane	6.45E+01	(1)	1.70E+03	(4)	2.75E+00	(8)	2.75E+00	-	<0.1	<0.1	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<1	<0.1
1,1-Dichloroethene	4.49E+02	(1)	4.32E+02	(4)	5.36E+01	(8)	5.36E+01	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
1,1-Dichloropropene	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<1	<0.1
1,2,3-Trichlorobenzene	4.90E+01	(2)	4.90E+02	(5)	6.92E+00	(8)	6.92E+00	-	<0.1	<0.1	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<1	<0.1
1,2,3-Trichloropropane	4.97E-02	(1)	7.23E+00	(4)	1.15E-03	(8)	1.15E-03	-	<0.1	<0.1	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<1	<0.1
1,2,4-Trichlorobenzene	7.30E+01	(1)	6.87E+01	(4)	4.21E+00	(8)	4.21E+00	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
1,2,4-Trimethylbenzene	6.20E+01	(2)	2.60E+02	(5)	9.68E+00	(8)	9.68E+00	-	<0.05	<0.05	<0.001	0.00163	<0.001	<0.0009	0.00263	<0.0009	<0.001	<0.0011	0.00512	0.000894	<0.5	<0.05
1,2-Dibromo-3-chloropropane	1.86E+00	(1)	5.07E+00	(4)	5.07E-04	(8)	5.07E-04	-	<0.1	<0.1	<0.002	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<1	<0.1
1,2-Dibromoethane (EDB)	5.88E-01	(1)	1.60E+01	(4)	7.10E-03	(8)	7.10E-03	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
1,2-Dichlorobenzene	2.31E+03	(1)	2.71E+03	(4)	1.29E+02	(8)	1.29E+02	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
1,2-Dichloroethane (EDC)	7.89E+00	(1)	5.87E+01	(4)	1.64E-01	(8)	1.64E-01	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
1,2-Dichloropropane	1.52E+01	(1)	2.50E+01	(4)	4.94E-01	(8)	4.94E-01	-	<0.05	<0.05	<0.002	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.00E+04	(5)	5.53E+01	(8)	5.53E+01	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	0.000983	<0.0009	<0.001	<0.0011	0.00205	<0.0007	<0.5	<0.05
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
1,3-Dichloropropane	1.60E+03	(2)	2.00E+04	(5)	4.56E+01	(8)	4.56E+01	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
1,4-Dichlorobenzene	3.17E+01	(1)	8.31E+02	(4)	1.47E+00	(8)	1.47E+00	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
1-Methylnaphthalene	1.60E+02	(3)	5.30E+01	(6)	2.35E+00	(8)	2.35E+00	-	0.02	0.022	<0.005	<0.0032	<0.0041	<0.0037	<0.0038	<0.0036	<0.004	<0.0045	<0.0043	<0.0029	2.3	<0.2
2,2-Dichloropropane	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<1	<0.1
2-Butanone (MEK)	3.71E+04	(1)	8.43E+04	(4)	5.87E+02	(8)	5.87E+02	-	<0.5	0.055	<0.006	0.0217	<0.0104	<0.0093	0.0165	<0.0089	<0.01	<0.0112	0.0188	<0.0073	<5	<0.5
2-Chlorotoluene	1.56E+03	(1)	6.19E+03	(4)	2.57E+02	(8)	2.57E+02	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
2-Hexanone	9.38E+02	(1)	9.73E+02	(4)	3.53E+03	(8)	9.38E+02	-	<0.5	<0.5	<0.006	<0.0081	<0.0104	<0.0093	<0.0095	<0.0089	<0.01	<0.0112	<0.0108	<0.0073	<5	<0.5
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	6.45E+01	(8)	6.45E+01	-	0.024	0.027	<0.005	<0.0032	<0.0041	<0.0037	<0.0038	<0.0036	<0.004	<0.0045	<0.0043	<0.0029	3.5	<0.2
4-Chlorotoluene	1.60E+03	(2)	2.00E+04	(5)	8.30E+01	(8)	8.30E+01	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
4-Isopropyltoluene	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05

Table 8
Old API Separator Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	SWMU 14-19 (0-0.5')	SWMU 14-19 (1.5-2.0')	SWMU 14-20 (0-0.5')	SWMU 14-21 (0-0.5')	SWMU 14-21 (1.5-2')	SWMU 14-21 (8-10')	SWMU 14-22 (0-0.5')	SWMU 14-22 (1.5-2')	SWMU 14-22 (4-6')	SWMU 14-22 (8-10')	SWMU 14-23 (0-0.5')	SWMU 14-23 (1.5-2')	SWMU 14-23 (12-14')	SWMU 14-23 (14-16')
									1207940-019 7/19/2012	1207940-020 7/19/2012	1207940-027 7/19/2012	1210582-005 10/9/2012	1210582-006 10/9/2012	1210582-007 10/9/2012	1210583-001 10/9/2012	1210583-002 10/9/2012	1210583-003 10/9/2012	1210583-005 10/9/2012	1210656-001 10/10/2012	1210656-002 10/10/2012	1210656-003 10/10/2012	1210656-004 10/10/2012
4-Methyl-2-pentanone	5.30E+03	(2)	5.30E+04	(5)	1.06E+02	(8)	1.06E+02	-	<0.5	<0.5	<0.006	<0.0081	<0.0104	<0.0093	<0.0095	<0.0089	<0.01	<0.0112	0.0142	<0.0073	<5	<0.5
Acetone	6.66E+04	(1)	2.21E+05	(4)	1.78E+03	(8)	1.78E+03	-	0.14	<0.75	<0.034	0.627	0.0315	<0.0093	0.48	0.0505	0.0151	<0.0112	0.101	0.0383	<7.5	<0.75
Benzene	1.54E+01	(1)	1.38E+02	(4)	7.96E-01	(8)	7.96E-01	-	<0.05	<0.05	<0.001	0.00192	0.00145	<0.0009	0.00124	0.000971	0.0019	0.00171	0.00261	0.00151	1.1	<0.05
Bromobenzene	3.00E+02	(2)	1.80E+03	(5)	1.66E+01	(8)	1.66E+01	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
Bromodichloromethane	5.41E+00	(1)	1.43E+02	(4)	1.25E-01	(8)	1.25E-01	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
Bromoform	6.16E+02	(1)	4.76E+03	(4)	2.78E+02	(8)	2.78E+02	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
Bromomethane	1.65E+01	(1)	1.64E+01	(4)	8.86E-01	(8)	8.86E-01	-	<0.15	<0.15	-	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<1.5	<0.15
Carbon disulfide	1.53E+03	(1)	1.58E+03	(4)	1.30E+02	(8)	1.30E+02	-	<0.5	<0.5	<0.006	<0.0081	<0.0104	<0.0093	<0.0095	<0.0089	<0.01	<0.0112	<0.0108	<0.0073	<5	<0.5
Carbon tetrachloride	1.08E+01	(1)	2.26E+02	(4)	7.39E-01	(8)	7.39E-01	-	<0.1	<0.1	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<1	<0.1
Chlorobenzene	3.76E+02	(1)	4.06E+02	(4)	2.27E+01	(8)	2.27E+01	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
Chloroethane	2.98E+04	(1)	2.61E+04	(4)	2.48E+03	(8)	2.48E+03	-	<0.1	<0.1	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<1	<0.1
Chloroform	5.86E+00	(1)	1.54E+02	(4)	2.12E-01	(8)	2.12E-01	-	<0.05	0.0069	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
Chloromethane	2.75E+02	(1)	2.41E+02	(4)	2.03E+01	(8)	2.03E+01	-	<0.15	<0.15	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<1.5	<0.15
cis-1,2-DCE	1.56E+02	(1)	6.19E+02	(4)	8.47E+00	(8)	8.47E+00	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
cis-1,3-Dichloropropene	3.37E+01	(1)	2.09E+02	(4)	5.71E-01	(8)	5.71E-01	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
Dibromochloromethane	1.21E+01	(1)	3.32E+02	(4)	1.52E-01	(8)	1.52E-01	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
Dibromomethane	5.16E+01	(1)	3.10E+03	(4)	7.89E-01	(8)	7.89E-01	-	<0.1	<0.1	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<1	<0.1
Dichlorodifluoromethane	1.68E+02	(1)	1.49E+02	(4)	1.71E+02	(8)	1.49E+02	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
Ethylbenzene	6.84E+01	(1)	1.83E+03	(4)	5.98E+00	(8)	5.98E+00	-	<0.05	<0.05	<0.001	0.00194	<0.001	<0.0009	0.00152	<0.0009	<0.001	<0.0011	0.00207	<0.0007	3.8	<0.05
Hexachlorobutadiene	6.11E+01	(1)	2.38E+02	(4)	5.91E+00	(8)	5.91E+00	-	<0.1	<0.1	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<1	<0.1
Isopropylbenzene	2.43E+03	(1)	2.81E+03	(4)	3.99E+02	(8)	3.99E+02	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	0.74	<0.05
Methyl tert-butyl ether (MTBE)	9.01E+02	(1)	2.49E+04	(4)	1.11E+01	(8)	1.11E+01	-	<0.05	<0.05	<0.002	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
Methylene chloride	4.09E+02	(1)	1.12E+03	(4)	1.90E+01	(8)	1.90E+01	-	0.048	0.016	<0.006	<0.0024	0.0142	0.00978	0.00694	<0.0027	<0.003	<0.0034	<0.0032	<0.0022	<1.5	<0.15
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	1.64E+00	(8)	1.64E+00	-	<0.1	<0.1	<0.001	<0.0016	<0.0021	<0.0019	<0.0019	<0.0018	<0.002	<0.0022	<0.0022	<0.0015	1.3	<0.1
n-Butylbenzene	3.90E+03	(2)	5.10E+04	(5)	1.15E+03	(8)	1.15E+03	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<1.5	<0.15
n-Propylbenzene	3.40E+03	(2)	2.10E+04	(5)	4.56E+02	(8)	4.56E+02	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	1.3	<0.05
sec-Butylbenzene	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	0.51	<0.05
Styrene	7.28E+03	(1)	9.99E+03	(4)	6.40E+02	(8)	6.40E+02	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
tert-Butylbenzene	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
Tetrachloroethene (PCE)	7.02E+00	(1)	2.12E+02	(4)	1.98E-01	(8)	1.98E-01	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
Toluene	5.27E+03	(1)	1.34E+04	(4)	5.84E+02	(8)	5.84E+02	-	<0.05	<0.05	<0.001	0.003	0.00126	<0.0009	0.00318	0.00135	0.00162	<0.0011	0.0075	0.00235	<0.5	<0.05
trans-1,2-DCE	2.70E+02	(1)	2.73E+02	(4)	1.24E+01	(8)	1.24E+01	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
Trichloroethene (TCE)	8.77E+00	(1)	7.68E+00	(4)	4.85E-01	(8)	4.85E-01	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
Trichlorofluoromethane	1.41E+03	(1)	1.30E+03	(4)	4.10E+02	(8)	4.10E+02	-	<0.05	<0.05	0.000525	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
Vinyl chloride	7.28E-01	(1)	1.49E+02	(4)	2.50E-02	(8)	2.50E-02	-	<0.05	<0.05	<0.001	<0.0008	<0.001	<0.0009	<0.0009	<0.0009	<0.001	<0.0011	<0.0011	<0.0007	<0.5	<0.05
Xylenes, Total	8.14E+02	(1)	7.43E+02	(4)	7.21E+01	(8)	7.21E+01	-	<0.1	<0.1	<0.003	0.0128	<0.0021	<0.0019	0.00894	<0.0018	<0.002	<0.0022	0.0103	<0.0015	<1	<0.1
Semi Volatile Organics - (EPA Method 8270) mg/kg																						
1,2,4-Trichlorobenzene	7.30E+01	(1)	6.87E+01	(4)	4.21E+00	(8)	4.21E+00	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
1,2-Dichlorobenzene	2.31E+03	(1)	2.71E+03	(4)	1.29E+02	(8)	1.29E+02	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
1,4-Dichlorobenzene	3.17E+01	(1)	8.31E+02	(4)	1.47E+00	(8)	1.47E+00	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
1-Methylnaphthalene	1.60E+02	(3)	5.30E+01	(6)	2.35E+00	(8)	2.35E+00	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
2,4,5-Trichlorophenol	6.11E+03	(1)	2.38E+04	(4)	4.78E+03	(8)	4.78E+03	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
2,4,6-Trichlorophenol	6.11E+01	(1)	2.38E+02	(4)	4.78E+01	(8)	4.78E+01	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
2,4-Dichlorophenol	1.83E+02	(1)	7.15E+02	(4)	4.60E+01	(8)	4.60E+01	-	<2.007	<3.954	<0.8	<0.3992	<0.3991	<0.3966	<0.3989	<0.3955	<0.4036	<0.3979	<0.7997	<1.973	<0.3963	<0.4034
2,4-Dimethylphenol	1.22E+03	(1)	4.76E+03	(4)	3.07E+02	(8)	3.07E+02	-	<1.506	<2.965	<0.6	<0.2994	<0.2993	<0.2974	<0.2992	<0.2966	<0.3027	<0.2984	<0.5998	<1.4798	<0.2972	<0.3025
2,4-Dinitrophenol	1.22E+02	(1)	4.76E+02	(4)	2.91E+01	(8)	2.91E+01	-	<2.007	<3.954	<0.8	<0.3992	<0.3991	<0.3966	<0.3989	<0.3955	<0.4036	<0.3979	<0.7997	<1.973	<0.3963	<0.4034

Table 8
Old API Separator Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	SWMU 14-19 (0-0.5')	SWMU 14-19 (1.5-2.0')	SWMU 14-20 (0-0.5')	SWMU 14-21 (0-0.5')	SWMU 14-21 (1.5-2')	SWMU 14-21 (8-10')	SWMU 14-22 (0-0.5')	SWMU 14-22 (1.5-2')	SWMU 14-22 (4-6')	SWMU 14-22 (8-10')	SWMU 14-23 (0-0.5')	SWMU 14-23 (1.5-2')	SWMU 14-23 (12-14')	SWMU 14-23 (14-16')
									1207940-019	1207940-020	1207940-027	1210582-005	1210582-006	1210582-007	1210583-001	1210583-002	1210583-003	1210583-005	1210656-001	1210656-002	1210656-003	1210656-004
									7/19/2012	7/19/2012	7/19/2012	10/9/2012	10/9/2012	10/9/2012	10/9/2012	10/9/2012	10/9/2012	10/9/2012	10/10/2012	10/10/2012	10/10/2012	10/10/2012
2,4-Dinitrotoluene	1.57E+01	(1)	4.76E+02	(4)	1.04E+00	(8)	1.04E+00	-	<2.509	<4.942	<1	<0.499	<0.4988	<0.4957	<0.4987	<0.4944	<0.5045	<0.4973	<0.9997	<2.4663	<0.4954	<0.5042
2,6-Dinitrotoluene	6.11E+01	(1)	2.38E+02	(4)	1.77E+01	(8)	1.77E+01	-	<2.509	<4.942	<1	<0.499	<0.4988	<0.4957	<0.4987	<0.4944	<0.5045	<0.4973	<0.9997	<2.4663	<0.4954	<0.5042
2-Chloronaphthalene	6.11E+01	(1)	2.94E+02	(4)	4.01E-01	(8)	4.01E-01	-	<1.255	<2.471	<0.5	<0.2495	<0.2494	<0.2479	<0.2493	<0.2472	<0.2523	<0.2487	<0.4998	<1.2331	<0.2477	<0.2521
2-Chlorophenol	3.91E+02	(1)	1.55E+03	(4)	5.33E+01	(8)	5.33E+01	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	6.45E+01	(8)	6.45E+01	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
2-Methylphenol	3.10E+03	(2)	3.10E+04	(5)	2.67E+02	(8)	2.67E+02	-	<2.509	<4.942	<1	<0.499	<0.4988	<0.4957	<0.4987	<0.4944	<0.5045	<0.4973	<0.9997	<2.4663	<0.4954	<0.5042
2-Nitroaniline	6.10E+02	(2)	6.00E+03	(5)	2.86E+01	(8)	2.86E+01	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
2-Nitrophenol	-	-	-	-	-	-	-	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
3,3´-Dichlorobenzidine	1.08E+01	(1)	3.64E+02	(4)	3.41E+00	(8)	3.41E+00	-	<1.255	<2.471	<0.5	<0.2495	<0.2494	<0.2479	<0.2493	<0.2472	<0.2523	<0.2487	<0.4998	<1.2331	<0.2477	<0.2521
3+4-Methylphenol	-	-	-	-	-	-	-	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
3-Nitroaniline	-	-	-	-	-	-	-	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
4,6-Dinitro-2-methylphenol	4.90E+00	(2)	4.90E+01	(5)	9.22E-01	(8)	9.22E-01	-	<2.509	<4.942	<1	<0.499	<0.4988	<0.4957	<0.4987	<0.4944	<0.5045	<0.4973	<0.9997	<2.4663	<0.4954	<0.5042
4-Bromophenyl phenyl ether	-	-	-	-	-	-	-	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
4-Chloro-3-methylphenol	6.10E+03	(2)	6.20E+04	(5)	5.99E+02	(8)	5.99E+02	-	<2.509	<4.942	<1	<0.499	<0.4988	<0.4957	<0.4987	<0.4944	<0.5045	<0.4973	<0.9997	<2.4663	<0.4954	<0.5042
4-Chloroaniline	2.40E+01	(3)	8.60E+00	(6)	5.99E-02	(8)	5.99E-02	-	<2.509	<4.942	<1	<0.499	<0.4988	<0.4957	<0.4987	<0.4944	<0.5045	<0.4973	<0.9997	<2.4663	<0.4954	<0.5042
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	-	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
4-Nitroaniline	2.40E+02	(3)	8.60E+01	(6)	6.45E-01	(8)	6.45E-01	-	<2.007	<3.954	<0.8	<0.3992	<0.3991	<0.3966	<0.3989	<0.3955	<0.4036	<0.3979	<0.7997	<1.973	<0.3963	<0.4034
4-Nitrophenol	-	-	-	-	-	-	-	-	<1.255	<2.471	<0.5	<0.2495	<0.2494	<0.2479	<0.2493	<0.2472	<0.2523	<0.2487	<0.4998	<1.2331	<0.2477	<0.2521
Acenaphthene	3.44E+03	(1)	1.86E+04	(4)	7.79E+03	(8)	3.44E+03	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Acenaphthylene	-	-	-	-	-	-	-	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Aniline	8.50E+02	(3)	3.00E+02	(6)	1.80E+00	(8)	1.80E+00	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Anthracene	1.72E+04	(1)	6.68E+04	(4)	1.25E+05	(8)	1.72E+04	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Azobenzene	5.10E+01	(3)	2.30E+01	(6)	3.69E-01	(8)	3.69E-01	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Benz(a)anthracene	1.48E+00	(1)	2.13E+02	(4)	3.61E+01	(8)	1.48E+00	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Benzo(a)pyrene	1.48E-01	(1)	2.13E+01	(4)	1.20E+01	(8)	1.48E-01	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Benzo(b)fluoranthene	1.48E+00	(1)	2.13E+02	(4)	1.22E+02	(8)	1.48E+00	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Benzo(g,h,i)perylene	-	-	-	-	-	-	-	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Benzo(k)fluoranthene	1.48E+01	(1)	2.06E+03	(4)	1.20E+03	(8)	1.48E+01	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Benzoic acid	2.40E+05	(2)	2.50E+06	(5)	6.45E+03	(8)	6.45E+03	-	<2.509	<4.942	<1	<0.499	<0.4988	<0.4957	<0.4987	<0.4944	<0.5045	<0.4973	<0.9997	<2.4663	<0.4954	<0.5042
Benzyl alcohol	6.10E+03	(2)	6.20E+04	(5)	1.71E+02	(8)	1.71E+02	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	0.26	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Bis(2-chloroethoxy)methane	1.80E+02	(2)	1.80E+03	(5)	5.07E+00	(8)	5.07E+00	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Bis(2-chloroethyl)ether	2.68E+00	(1)	7.78E+01	(4)	1.21E-02	(8)	1.21E-02	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Bis(2-chloroisopropyl)ether	9.15E+01	(1)	3.10E+03	(4)	1.07E+00	(8)	1.07E+00	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Bis(2-ethylhexyl)phthalate	3.47E+02	(1)	4.76E+03	(4)	3.97E+03	(8)	3.47E+02	-	<2.509	<4.942	<1	<0.499	<0.4988	<0.4957	<0.4987	<0.4944	<0.5045	<0.4973	<0.9997	<2.4663	<0.4954	<0.5042
Butyl benzyl phthalate	2.60E+03	(3)	9.10E+02	(6)	9.22E+01	(8)	9.22E+01	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Carbazole	-	-	-	-	-	-	-	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Chrysene	1.48E+02	(1)	2.06E+04	(4)	3.68E+03	(8)	1.48E+02	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Dibenz(a,h)anthracene	1.48E-01	(1)	2.13E+01	(4)	3.90E+01	(8)	1.48E-01	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Dibenzofuran	7.80E+01	(2)	1.00E+03	(5)	5.07E+01	(8)	5.07E+01	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Diethyl phthalate	4.89E+04	(1)	1.91E+05	(4)	4.45E+03	(8)	4.45E+03	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(4)	3.71E+04	(8)	3.71E+04	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Di-n-butyl phthalate	6.11E+03	(1)	2.38E+04	(4)	3.21E+03	(8)	3.21E+03	-	<2.509	<4.942	<1	<0.499	<0.4988	<0.4957	<0.4987	<0.4944	<0.5045	<0.4973	<0.9997	<2.4663	<0.4954	<0.5042
Di-n-octyl phthalate	-	-	-	-	-	-	-	-	<1.255	<2.471	<0.5	<0.2495	<0.2494	<0.2479	<0.2493	<0.2472	<0.2523	<0.2487	<0.7997	<1.973	<0.3963	<0.4034
Fluoranthene	2.29E+03	(1)	8.91E+03	(4)	5.61E+04	(8)	2.29E+03	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Fluorene	2.29E+03	(1)	8.91E+03	(4)	9.36E+03	(8)	2.29E+03	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Hexachlorobenzene	3.04E+00	(1)	1.03E+02	(4)	1.83E+00	(8)	1.83E+00	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Hexachlorobutadiene	6.11E+01	(1)	2.38E+02	(4)	5.91E+00	(8)	5.91E+00	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Hexachlorocyclopentadiene	3.67E+02	(1)	8.11E+02	(4)	2.43E+02	(8)	2.43E+02	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017

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Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	SWMU 14-19 (0-0.5')	SWMU 14-19 (1.5-2.0')	SWMU 14-20 (0-0.5')	SWMU 14-21 (0-0.5')	SWMU 14-21 (1.5-2')	SWMU 14-21 (8-10')	SWMU 14-22 (0-0.5')	SWMU 14-22 (1.5-2')	SWMU 14-22 (4-6')	SWMU 14-22 (8-10')	SWMU 14-23 (0-0.5')	SWMU 14-23 (1.5-2')	SWMU 14-23 (12-14')	SWMU 14-23 (14-16')
									1207940-019 7/19/2012	1207940-020 7/19/2012	1207940-027 7/19/2012	1210582-005 10/9/2012	1210582-006 10/9/2012	1210582-007 10/9/2012	1210583-001 10/9/2012	1210583-002 10/9/2012	1210583-003 10/9/2012	1210583-005 10/9/2012	1210656-001 10/10/2012	1210656-002 10/10/2012	1210656-003 10/10/2012	1210656-004 10/10/2012
Hexachloroethane	4.28E+01	(1)	1.67E+02	(4)	3.77E+00	(8)	3.77E+00	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Indeno(1,2,3-cd)pyrene	1.48E+00	(1)	2.13E+02	(4)	3.98E+02	(8)	1.48E+00	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Isophorone	5.12E+03	(1)	4.75E+04	(4)	8.84E+01	(8)	8.84E+01	-	<2.509	<4.942	<1	<0.499	<0.4988	<0.4957	<0.4987	<0.4944	<0.5045	<0.4973	<0.9997	<2.4663	<0.4954	<0.5042
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	1.64E+00	(8)	1.64E+00	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Nitrobenzene	5.35E+01	(1)	3.32E+02	(4)	2.88E-01	(8)	2.88E-01	-	<2.509	<4.942	<1	<0.499	<0.4988	<0.4957	<0.4987	<0.4944	<0.5045	<0.4973	<0.9997	<2.4663	<0.4954	<0.5042
N-Nitrosodi-n-propylamine	6.90E-01	(3)	2.50E-01	(6)	3.23E-03	(8)	3.23E-03	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
N-Nitrosodiphenylamine	9.93E+02	(1)	3.36E+04	(4)	2.61E+02	(8)	2.61E+02	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Pentachlorophenol	8.94E+00	(1)	3.10E+02	(4)	5.90E+00	(8)	5.90E+00	-	<2.007	<3.954	<0.8	<0.3992	<0.3991	<0.3966	<0.3989	<0.3955	<0.4036	<0.3979	<0.7997	<1.973	<0.3963	<0.4034
Phenanthrene	1.83E+03	(1)	7.15E+03	(4)	1.32E+04	(8)	1.83E+03	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Phenol	1.83E+04	(1)	6.88E+04	(4)	2.29E+03	(8)	2.29E+03	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Pyrene	1.72E+03	(1)	6.68E+03	(4)	4.12E+04	(8)	1.72E+03	-	<1.004	<1.977	<0.4	<0.1996	<0.1995	<0.1983	<0.1995	<0.1978	<0.2018	<0.1989	<0.3999	<0.9865	<0.1982	<0.2017
Pyridine	7.80E+01	(2)	1.00E+03	(5)	2.44E+00	(8)	2.44E+00	-	<2.509	<4.942	<1	<0.499	<0.4988	<0.4957	<0.4987	<0.4944	<0.5045	<0.4973	<0.9997	<2.4663	<0.4954	<0.5042
Total Petroleum Hydrocarbons - (EPA Method 8015B) mg/kg																						
Diesel Range Organics (DRO)	1.00E+03	(10)	1.00E+03	(10)	1.00E+03	(10)	-	-	<10	29	<10	21	<10	<10	150	90	<10	<10	45	32	140	19
Gasoline Range Organics (GRO)	-	-	-	-	-	-	-	-	1.2	<5	1.7	<5	<5	<5	<5	<5	<5	<5	<5	<5	160	<5
Motor Oil Range Organics (MRO)	3.00E+03	(11)	3.00E+03	(11)	3.00E+03	(11)	-	-	<49	51	<50	<50	<51	<50	96	60	<48	<48	<50	75	<49	<49

-- No screening level or analytical result available

NMED - Risk Assessment Guidance for Site Investigations and Remediation (June 14, 2012)

EPA - Regional Screening Levels (November 2012)

(1) NMED Residential Screening Level

(2) EPA Residential Screening Level

(3) EPA Residential - Screening Levels (November 2012) multiplied by 10 because the constituent is listed as carcinogenic

(4) NMED Construction Worker Screening Level

(5) EPA Industrial - Screening Levels (Nov. 2012)

(6) EPA Industrial - Screening Levels (Nov. 2012) multiplied by 10

(7) SoilGW NMED Dilution Attenuation Factor (DAF) = 461

(8) SoilGW Risk-based EPA DAF = 461

(9) SoilGW MCL-based EPA DAF = 461

(10) NMED Table 6-2 TPH Screening Guidelines for Potable Groundwater "uknown oil" with DAF = 1.0 - see report Section 5 for use of screening levels

(11) NMED Table 6-2 TPH Screening Guidelines for Potable Groundwater "waste oil" with DAF = 1.0 - see report Section 5 for use of screening levels

(12) Background concentrations to be determined.

Bold represents value above Residential Screening Level

yellow highlight represents value above Leachate (DAF) Screening Level

Bold with yellow - value exceeds Residential Screening Level and

Table 8
Old API Separator Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	SWMU 14-24 (0-0.5')	SWMU 14-24 (1.5-2')
									1210860-001	1210860-002
									10/17/2012	10/17/2012
Metals (mg/kg)										
Antimony	3.13E+01	(1)	1.24E+02	(4)	3.05E+02	(8)	3.13E+01	-	<5	<5
Arsenic	3.90E+00	(1)	5.30E+01	(4)	6.05E+00	(8)	3.90E+00	-	<5	<5
Barium	1.56E+04	(1)	4.35E+03	(4)	1.39E+05	(8)	4.35E+03	-	440	43
Beryllium	1.56E+02	(1)	1.44E+02	(4)	2.66E+04	(8)	1.44E+02	-	0.8	0.83
Cadmium	7.03E+01	(1)	2.77E+02	(4)	6.33E+02	(8)	7.03E+01	-	<0.2	<0.2
Chromium III	1.17E+05	(1)	4.65E+05	(4)	4.54E+10	(8)	1.17E+05	-	10	7.8
Chromium VI	2.97E+00	(1)	6.56E+01	(4)	3.83E+00	(8)	2.97E+00	-	10	7.8
Cobalt	2.30E+01	(2)	3.00E+02	(5)	9.68E+01	(8)	2.30E+01	-	4.6	3.5
Cyanide	4.69E+01	(1)	1.86E+02	(4)	1.02E+02	(8)	4.69E+01	-	<0.263	<0.311
Iron	5.48E+04	(1)	2.17E+05	(4)	2.98E+05	(8)	5.48E+04	-	15000	16000
Lead	4.00E+02	(1)	8.00E+02	(4)	6.45E+03	(8)	4.00E+02	-	2.5	3.3
Manganese	1.86E+03	(1)	4.40E+02	(4)	2.64E+04	(8)	4.40E+02	-	450	230
Mercury	1.56E+01	(1)	1.36E+01	(4)	1.51E+01	(8)	1.36E+01	-	<0.033	<0.033
Nickel	1.56E+03	(1)	6.19E+03	(4)	2.20E+04	(8)	1.56E+03	-	8	6.4
Selenium	3.91E+02	(1)	1.55E+03	(4)	4.45E+02	(8)	3.91E+02	-	<5	<5
Silver	3.91E+02	(1)	1.55E+03	(4)	7.22E+02	(8)	3.91E+02	-	<0.5	<0.5
Vanadium	3.91E+02	(1)	1.55E+03	(4)	8.42E+04	(8)	3.91E+02	-	22	14
Zinc	2.35E+04	(1)	9.29E+04	(4)	3.14E+05	(8)	2.35E+04	-	25	12
Volatile Organic Compounds - (EPA Method 8260) mg/kg										
1,1,1,2-Tetrachloroethane	2.91E+01	(1)	7.79E+02	(4)	7.59E-01	(8)	7.59E-01	-	<0.0008	<0.0008
1,1,1-Trichloroethane	1.56E+04	(1)	1.48E+04	(4)	1.34E+03	(8)	1.34E+03	-	<0.0008	<0.0008
1,1,2,2-Tetrachloroethane	8.02E+00	(1)	2.21E+02	(4)	9.82E-02	(8)	9.82E-02	-	<0.0008	<0.0008
1,1,2-Trichloroethane	2.81E+00	(1)	4.72E+02	(4)	5.14E-02	(8)	5.14E-02	-	<0.0008	<0.0008
1,1-Dichloroethane	6.45E+01	(1)	1.70E+03	(4)	2.75E+00	(8)	2.75E+00	-	<0.0008	<0.0008
1,1-Dichloroethene	4.49E+02	(1)	4.32E+02	(4)	5.36E+01	(8)	5.36E+01	-	<0.0008	<0.0008
1,1-Dichloropropene	-	-	-	-	-	-	-	-	<0.0008	<0.0008
1,2,3-Trichlorobenzene	4.90E+01	(2)	4.90E+02	(5)	6.92E+00	(8)	6.92E+00	-	<0.0008	<0.0008
1,2,3-Trichloropropane	4.97E-02	(1)	7.23E+00	(4)	1.15E-03	(8)	1.15E-03	-	<0.0008	<0.0008
1,2,4-Trichlorobenzene	7.30E+01	(1)	6.87E+01	(4)	4.21E+00	(8)	4.21E+00	-	<0.0008	<0.0008
1,2,4-Trimethylbenzene	6.20E+01	(2)	2.60E+02	(5)	9.68E+00	(8)	9.68E+00	-	0.000935	<0.0008
1,2-Dibromo-3-chloropropane	1.86E+00	(1)	5.07E+00	(4)	5.07E-04	(8)	5.07E-04	-	<0.0008	<0.0008
1,2-Dibromoethane (EDB)	5.88E-01	(1)	1.60E+01	(4)	7.10E-03	(8)	7.10E-03	-	<0.0008	<0.0008
1,2-Dichlorobenzene	2.31E+03	(1)	2.71E+03	(4)	1.29E+02	(8)	1.29E+02	-	<0.0008	<0.0008
1,2-Dichloroethane (EDC)	7.89E+00	(1)	5.87E+01	(4)	1.64E-01	(8)	1.64E-01	-	<0.0008	<0.0008
1,2-Dichloropropane	1.52E+01	(1)	2.50E+01	(4)	4.94E-01	(8)	4.94E-01	-	<0.0008	<0.0008
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.00E+04	(5)	5.53E+01	(8)	5.53E+01	-	<0.0008	<0.0008
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	<0.0008	<0.0008
1,3-Dichloropropane	1.60E+03	(2)	2.00E+04	(5)	4.56E+01	(8)	4.56E+01	-	<0.0008	<0.0008
1,4-Dichlorobenzene	3.17E+01	(1)	8.31E+02	(4)	1.47E+00	(8)	1.47E+00	-	<0.0008	<0.0008
1-Methylnaphthalene	1.60E+02	(3)	5.30E+01	(6)	2.35E+00	(8)	2.35E+00	-	<0.0032	<0.0031
2,2-Dichloropropane	-	-	-	-	-	-	-	-	<0.0008	<0.0008
2-Butanone (MEK)	3.71E+04	(1)	8.43E+04	(4)	5.87E+02	(8)	5.87E+02	-	0.00846	<0.0078
2-Chlorotoluene	1.56E+03	(1)	6.19E+03	(4)	2.57E+02	(8)	2.57E+02	-	<0.0008	<0.0008
2-Hexanone	9.38E+02	(1)	9.73E+02	(4)	3.53E+03	(8)	9.38E+02	-	<0.008	<0.0078
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	6.45E+01	(8)	6.45E+01	-	<0.0032	<0.0031
4-Chlorotoluene	1.60E+03	(2)	2.00E+04	(5)	8.30E+01	(8)	8.30E+01	-	<0.0008	<0.0008
4-Isopropyltoluene	-	-	-	-	-	-	-	-	<0.0008	<0.0008

Table 8
Old API Separator Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	SWMU 14-24 (0-0.5')	SWMU 14-24 (1.5-2')
									1210860-001	1210860-002
									10/17/2012	10/17/2012
4-Methyl-2-pentanone	5.30E+03	(2)	5.30E+04	(5)	1.06E+02	(8)	1.06E+02	-	<0.008	<0.0078
Acetone	6.66E+04	(1)	2.21E+05	(4)	1.78E+03	(8)	1.78E+03	-	0.048	0.0202
Benzene	1.54E+01	(1)	1.38E+02	(4)	7.96E-01	(8)	7.96E-01	-	0.00213	0.00129
Bromobenzene	3.00E+02	(2)	1.80E+03	(5)	1.66E+01	(8)	1.66E+01	-	<0.0008	<0.0008
Bromodichloromethane	5.41E+00	(1)	1.43E+02	(4)	1.25E-01	(8)	1.25E-01	-	<0.0008	<0.0008
Bromoform	6.16E+02	(1)	4.76E+03	(4)	2.78E+02	(8)	2.78E+02	-	<0.0008	<0.0008
Bromomethane	1.65E+01	(1)	1.64E+01	(4)	8.86E-01	(8)	8.86E-01	-	<0.0008	<0.0008
Carbon disulfide	1.53E+03	(1)	1.58E+03	(4)	1.30E+02	(8)	1.30E+02	-	<0.008	<0.0078
Carbon tetrachloride	1.08E+01	(1)	2.26E+02	(4)	7.39E-01	(8)	7.39E-01	-	<0.0008	<0.0008
Chlorobenzene	3.76E+02	(1)	4.06E+02	(4)	2.27E+01	(8)	2.27E+01	-	<0.0008	<0.0008
Chloroethane	2.98E+04	(1)	2.61E+04	(4)	2.48E+03	(8)	2.48E+03	-	<0.0008	<0.0008
Chloroform	5.86E+00	(1)	1.54E+02	(4)	2.12E-01	(8)	2.12E-01	-	<0.0008	<0.0008
Chloromethane	2.75E+02	(1)	2.41E+02	(4)	2.03E+01	(8)	2.03E+01	-	<0.0008	<0.0008
cis-1,2-DCE	1.56E+02	(1)	6.19E+02	(4)	8.47E+00	(8)	8.47E+00	-	<0.0008	<0.0008
cis-1,3-Dichloropropene	3.37E+01	(1)	2.09E+02	(4)	5.71E-01	(8)	5.71E-01	-	<0.0008	<0.0008
Dibromochloromethane	1.21E+01	(1)	3.32E+02	(4)	1.52E-01	(8)	1.52E-01	-	<0.0008	<0.0008
Dibromomethane	5.16E+01	(1)	3.10E+03	(4)	7.89E-01	(8)	7.89E-01	-	<0.0008	<0.0008
Dichlorodifluoromethane	1.68E+02	(1)	1.49E+02	(4)	1.71E+02	(8)	1.49E+02	-	<0.0008	<0.0008
Ethylbenzene	6.84E+01	(1)	1.83E+03	(4)	5.98E+00	(8)	5.98E+00	-	<0.0008	<0.0008
Hexachlorobutadiene	6.11E+01	(1)	2.38E+02	(4)	5.91E+00	(8)	5.91E+00	-	<0.0008	<0.0008
Isopropylbenzene	2.43E+03	(1)	2.81E+03	(4)	3.99E+02	(8)	3.99E+02	-	<0.0008	<0.0008
Methyl tert-butyl ether (MTBE)	9.01E+02	(1)	2.49E+04	(4)	1.11E+01	(8)	1.11E+01	-	<0.0008	<0.0008
Methylene chloride	4.09E+02	(1)	1.12E+03	(4)	1.90E+01	(8)	1.90E+01	-	<0.0024	<0.0023
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	1.64E+00	(8)	1.64E+00	-	<0.0016	<0.0016
n-Butylbenzene	3.90E+03	(2)	5.10E+04	(5)	1.15E+03	(8)	1.15E+03	-	<0.0008	<0.0008
n-Propylbenzene	3.40E+03	(2)	2.10E+04	(5)	4.56E+02	(8)	4.56E+02	-	<0.0008	<0.0008
sec-Butylbenzene	-	-	-	-	-	-	-	-	<0.0008	<0.0008
Styrene	7.28E+03	(1)	9.99E+03	(4)	6.40E+02	(8)	6.40E+02	-	<0.0008	<0.0008
tert-Butylbenzene	-	-	-	-	-	-	-	-	<0.0008	<0.0008
Tetrachloroethene (PCE)	7.02E+00	(1)	2.12E+02	(4)	1.98E-01	(8)	1.98E-01	-	<0.0008	<0.0008
Toluene	5.27E+03	(1)	1.34E+04	(4)	5.84E+02	(8)	5.84E+02	-	0.00222	0.000908
trans-1,2-DCE	2.70E+02	(1)	2.73E+02	(4)	1.24E+01	(8)	1.24E+01	-	<0.0008	<0.0008
trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-	<0.0008	<0.0008
Trichloroethene (TCE)	8.77E+00	(1)	7.68E+00	(4)	4.85E-01	(8)	4.85E-01	-	<0.0008	<0.0008
Trichlorofluoromethane	1.41E+03	(1)	1.30E+03	(4)	4.10E+02	(8)	4.10E+02	-	<0.0008	<0.0008
Vinyl chloride	7.28E-01	(1)	1.49E+02	(4)	2.50E-02	(8)	2.50E-02	-	<0.0008	<0.0008
Xylenes, Total	8.14E+02	(1)	7.43E+02	(4)	7.21E+01	(8)	7.21E+01	-	0.0038	<0.0016
Semi Volatile Organics - (EPA Method 8270) mg/kg										
1,2,4-Trichlorobenzene	7.30E+01	(1)	6.87E+01	(4)	4.21E+00	(8)	4.21E+00	-	<0.1997	<0.1997
1,2-Dichlorobenzene	2.31E+03	(1)	2.71E+03	(4)	1.29E+02	(8)	1.29E+02	-	<0.1997	<0.1997
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	<0.1997	<0.1997
1,4-Dichlorobenzene	3.17E+01	(1)	8.31E+02	(4)	1.47E+00	(8)	1.47E+00	-	<0.1997	<0.1997
1-Methylnaphthalene	1.60E+02	(3)	5.30E+01	(6)	2.35E+00	(8)	2.35E+00	-	<0.1997	<0.1997
2,4,5-Trichlorophenol	6.11E+03	(1)	2.38E+04	(4)	4.78E+03	(8)	4.78E+03	-	<0.1997	<0.1997
2,4,6-Trichlorophenol	6.11E+01	(1)	2.38E+02	(4)	4.78E+01	(8)	4.78E+01	-	<0.1997	<0.1997
2,4-Dichlorophenol	1.83E+02	(1)	7.15E+02	(4)	4.60E+01	(8)	4.60E+01	-	<0.3995	<0.3993
2,4-Dimethylphenol	1.22E+03	(1)	4.76E+03	(4)	3.07E+02	(8)	3.07E+02	-	<0.2996	<0.2995
2,4-Dinitrophenol	1.22E+02	(1)	4.76E+02	(4)	2.91E+01	(8)	2.91E+01	-	<0.3995	<0.3993

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									1210860-001	1210860-002
									10/17/2012	10/17/2012
2,4-Dinitrotoluene	1.57E+01	(1)	4.76E+02	(4)	1.04E+00	(8)	1.04E+00	-	<0.4993	<0.4992
2,6-Dinitrotoluene	6.11E+01	(1)	2.38E+02	(4)	1.77E+01	(8)	1.77E+01	-	<0.4993	<0.4992
2-Chloronaphthalene	6.11E+01	(1)	2.94E+02	(4)	4.01E-01	(8)	4.01E-01	-	<0.2497	<0.2496
2-Chlorophenol	3.91E+02	(1)	1.55E+03	(4)	5.33E+01	(8)	5.33E+01	-	<0.1997	<0.1997
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	6.45E+01	(8)	6.45E+01	-	<0.1997	<0.1997
2-Methylphenol	3.10E+03	(2)	3.10E+04	(5)	2.67E+02	(8)	2.67E+02	-	<0.4993	<0.4992
2-Nitroaniline	6.10E+02	(2)	6.00E+03	(5)	2.86E+01	(8)	2.86E+01	-	<0.1997	<0.1997
2-Nitrophenol	-	-	-	-	-	-	-	-	<0.1997	<0.1997
3,3'-Dichlorobenzidine	1.08E+01	(1)	3.64E+02	(4)	3.41E+00	(8)	3.41E+00	-	<0.2497	<0.2496
3+4-Methylphenol	-	-	-	-	-	-	-	-	<0.1997	<0.1997
3-Nitroaniline	-	-	-	-	-	-	-	-	<0.1997	<0.1997
4,6-Dinitro-2-methylphenol	4.90E+00	(2)	4.90E+01	(5)	9.22E-01	(8)	9.22E-01	-	<0.4993	<0.4992
4-Bromophenyl phenyl ether	-	-	-	-	-	-	-	-	<0.1997	<0.1997
4-Chloro-3-methylphenol	6.10E+03	(2)	6.20E+04	(5)	5.99E+02	(8)	5.99E+02	-	<0.4993	<0.4992
4-Chloroaniline	2.40E+01	(3)	8.60E+00	(6)	5.99E-02	(8)	5.99E-02	-	<0.4993	<0.4992
4-Chlorophenyl phenyl ether	-	-	-	-	-	-	-	-	<0.1997	<0.1997
4-Nitroaniline	2.40E+02	(3)	8.60E+01	(6)	6.45E-01	(8)	6.45E-01	-	<0.3995	<0.3993
4-Nitrophenol	-	-	-	-	-	-	-	-	<0.2497	<0.2496
Acenaphthene	3.44E+03	(1)	1.86E+04	(4)	7.79E+03	(8)	3.44E+03	-	<0.1997	<0.1997
Acenaphthylene	-	-	-	-	-	-	-	-	<0.1997	<0.1997
Aniline	8.50E+02	(3)	3.00E+02	(6)	1.80E+00	(8)	1.80E+00	-	<0.1997	<0.1997
Anthracene	1.72E+04	(1)	6.68E+04	(4)	1.25E+05	(8)	1.72E+04	-	<0.1997	<0.1997
Azobenzene	5.10E+01	(3)	2.30E+01	(6)	3.69E-01	(8)	3.69E-01	-	<0.1997	<0.1997
Benz(a)anthracene	1.48E+00	(1)	2.13E+02	(4)	3.61E+01	(8)	1.48E+00	-	<0.1997	<0.1997
Benzo(a)pyrene	1.48E-01	(1)	2.13E+01	(4)	1.20E+01	(8)	1.48E-01	-	<0.1997	<0.1997
Benzo(b)fluoranthene	1.48E+00	(1)	2.13E+02	(4)	1.22E+02	(8)	1.48E+00	-	<0.1997	<0.1997
Benzo(g,h,i)perylene	-	-	-	-	-	-	-	-	<0.1997	<0.1997
Benzo(k)fluoranthene	1.48E+01	(1)	2.06E+03	(4)	1.20E+03	(8)	1.48E+01	-	<0.1997	<0.1997
Benzoic acid	2.40E+05	(2)	2.50E+06	(5)	6.45E+03	(8)	6.45E+03	-	<0.4993	<0.4992
Benzyl alcohol	6.10E+03	(2)	6.20E+04	(5)	1.71E+02	(8)	1.71E+02	-	0.32	<0.1997
Bis(2-chloroethoxy)methane	1.80E+02	(2)	1.80E+03	(5)	5.07E+00	(8)	5.07E+00	-	<0.1997	<0.1997
Bis(2-chloroethyl)ether	2.68E+00	(1)	7.78E+01	(4)	1.21E-02	(8)	1.21E-02	-	<0.1997	<0.1997
Bis(2-chloroisopropyl)ether	9.15E+01	(1)	3.10E+03	(4)	1.07E+00	(8)	1.07E+00	-	<0.1997	<0.1997
Bis(2-ethylhexyl)phthalate	3.47E+02	(1)	4.76E+03	(4)	3.97E+03	(8)	3.47E+02	-	<0.4993	<0.4992
Butyl benzyl phthalate	2.60E+03	(3)	9.10E+02	(6)	9.22E+01	(8)	9.22E+01	-	<0.1997	<0.1997
Carbazole	-	-	-	-	-	-	-	-	<0.1997	<0.1997
Chrysene	1.48E+02	(1)	2.06E+04	(4)	3.68E+03	(8)	1.48E+02	-	<0.1997	<0.1997
Dibenz(a,h)anthracene	1.48E-01	(1)	2.13E+01	(4)	3.90E+01	(8)	1.48E-01	-	<0.1997	<0.1997
Dibenzofuran	7.80E+01	(2)	1.00E+03	(5)	5.07E+01	(8)	5.07E+01	-	<0.1997	<0.1997
Diethyl phthalate	4.89E+04	(1)	1.91E+05	(4)	4.45E+03	(8)	4.45E+03	-	<0.1997	<0.1997
Dimethyl phthalate	6.11E+05	(1)	2.38E+06	(4)	3.71E+04	(8)	3.71E+04	-	<0.1997	<0.1997
Di-n-butyl phthalate	6.11E+03	(1)	2.38E+04	(4)	3.21E+03	(8)	3.21E+03	-	<0.4993	<0.4992
Di-n-octyl phthalate	-	-	-	-	-	-	-	-	<0.3995	<0.3993
Fluoranthene	2.29E+03	(1)	8.91E+03	(4)	5.61E+04	(8)	2.29E+03	-	<0.1997	<0.1997
Fluorene	2.29E+03	(1)	8.91E+03	(4)	9.36E+03	(8)	2.29E+03	-	<0.1997	<0.1997
Hexachlorobenzene	3.04E+00	(1)	1.03E+02	(4)	1.83E+00	(8)	1.83E+00	-	<0.1997	<0.1997
Hexachlorobutadiene	6.11E+01	(1)	2.38E+02	(4)	5.91E+00	(8)	5.91E+00	-	<0.1997	<0.1997
Hexachlorocyclopentadiene	3.67E+02	(1)	8.11E+02	(4)	2.43E+02	(8)	2.43E+02	-	<0.1997	<0.1997

Table 8
Old API Separator Soil Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Leachate DAF (461) (mg/kg) SoilGW NMED	Source	Min	Background Concentrations (12)	SWMU 14-24 (0-0.5')	SWMU 14-24 (1.5-2')
									1210860-001 10/17/2012	1210860-002 10/17/2012
Hexachloroethane	4.28E+01	(1)	1.67E+02	(4)	3.77E+00	(8)	3.77E+00	-	<0.1997	<0.1997
Indeno(1,2,3-cd)pyrene	1.48E+00	(1)	2.13E+02	(4)	3.98E+02	(8)	1.48E+00	-	<0.1997	<0.1997
Isophorone	5.12E+03	(1)	4.75E+04	(4)	8.84E+01	(8)	8.84E+01	-	<0.4993	<0.4992
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	1.64E+00	(8)	1.64E+00	-	<0.1997	<0.1997
Nitrobenzene	5.35E+01	(1)	3.32E+02	(4)	2.88E-01	(8)	2.88E-01	-	<0.4993	<0.4992
N-Nitrosodi-n-propylamine	6.90E-01	(3)	2.50E-01	(6)	3.23E-03	(8)	3.23E-03	-	<0.1997	<0.1997
N-Nitrosodiphenylamine	9.93E+02	(1)	3.36E+04	(4)	2.61E+02	(8)	2.61E+02	-	<0.1997	<0.1997
Pentachlorophenol	8.94E+00	(1)	3.10E+02	(4)	5.90E+00	(8)	5.90E+00	-	<0.3995	<0.3993
Phenanthrene	1.83E+03	(1)	7.15E+03	(4)	1.32E+04	(8)	1.83E+03	-	<0.1997	<0.1997
Phenol	1.83E+04	(1)	6.88E+04	(4)	2.29E+03	(8)	2.29E+03	-	<0.1997	<0.1997
Pyrene	1.72E+03	(1)	6.68E+03	(4)	4.12E+04	(8)	1.72E+03	-	<0.1997	<0.1997
Pyridine	7.80E+01	(2)	1.00E+03	(5)	2.44E+00	(8)	2.44E+00	-	<0.4993	<0.4992
Total Petroleum Hydrocarbons - (EPA Method 8015B) mg/kg										
Diesel Range Organics (DRO)	1.00E+03	(10)	1.00E+03	(10)	1.00E+03	(10)	-	-	<10	<10
Gasoline Range Organics (GRO)	-	-	-	-	-	-	-	-	<5	<5
Motor Oil Range Organics (MRO)	3.00E+03	(11)	3.00E+03	(11)	3.00E+03	(11)	-	-	<50	<48

-- No screening level or analytical result available

NMED - Risk Assessment Guidance for Site Investigations and Remediation (June 14, 2012)

EPA - Regional Screening Levels (November 2012)

(1) NMED Residential Screening Level

(2) EPA Residential Screening Level

(3) EPA Residential - Screening Levels (November 2012) multiplied by 10 because the constituent is listed as carcinogenic

(4) NMED Construction Worker Screening Level

(5) EPA Industrial - Screening Levels (Nov. 2012)

(6) EPA Industrial - Screening Levels (Nov. 2012) multiplied by 10

(7) SoilGW NMED Dilution Attenuation Factor (DAF) = 461

(8) SoilGW Risk-based EPA DAF = 461

(9) SoilGW MCL-based EPA DAF = 461

(10) NMED Table 6-2 TPH Screening Guidelines for Potable Groundwater "uknown oil" with DAF = 1.0 - see report Section 5 for use of screening levels

(11) NMED Table 6-2 TPH Screening Guidelines for Potable Groundwater "waste oil" with DAF = 1.0 - see report Section 5 for use of screening levels

(12) Background concentrations to be determined.

Bold represents value above Residential Screening Level

yellow highlight represents value above Leachate (DAF) Screening Level

Bold with yellow - value exceeds Residential Screening Level and

Table 9
Aeration Basin Groundwater Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Screening Levels	Source	SWMU 1-2 GW	SWMU 1-3 GW	SWMU 1-4 GW	SWMU 1-5 GW	SWMU 1-6 GW	SWMU 1-7 GW	SWMU 1-8 GW	SWMU 1-24 GW	SWMU 1-37 GW
			1210279-006	1210332-005	1210372-012 / 026	1210372-013	1210372-027	1210372-028	1210372-014	1210660-001	1210692-026
Sample Date			10/2/2012	10/3/2012	10/4 & 10/5/2012	10/5/2012	10/4/2012	10/4/2012	10/5/2012	10/10/2012	10/11/2012
Metals											
Antimony	6.00E-03	(2)	<0.0125	<0.0025	<0.0025	-	<0.005	<0.005	<0.005	<0.005	<0.0025
Arsenic	1.00E-02	(2)	**0.063**	**0.015**	**0.016**	-	**0.054**	**0.046**	**0.032**	**0.052**	0.0082
Barium	1.00E+00	(3)	**56**	0.54	**1.2**	-	**3.4**	**3.2**	**4.7**	**17**	0.24
Beryllium	4.00E-03	(2)	**0.21**	**0.0066**	<0.002	-	**0.041**	**0.051**	**0.0065**	**0.032**	<0.002
Cadmium	1.00E-02	(3)	<0.05	<0.002	<0.002	-	<0.02	<0.02	<0.004	<0.004	<0.002
Chromium III	5.00E-02	(3)	**0.31**	0.015	<0.006	-	**0.16**	**0.17**	**0.058**	**0.14**	<0.006
Cobalt	5.00E-02	(3)	**0.53**	0.043	0.011	-	**0.27**	**0.16**	**0.053**	**0.11**	0.026
Cyanide, Total	2.00E-01	(3)	0.037	0.032	0.021	-	0.028	0.052	0.018	0.059	0.031
Iron, Total	1.00E+00	(3)	**140**	**20**	0.32	-	**94**	**130**	**39**	**160**	**2.5**
Lead	1.50E-02	(2)	**1.7**	**0.057**	<0.0025	-	**0.29**	**0.34**	**0.078**	**0.49**	0.0041
Manganese	2.00E-01	(3)	**95**	**2.1**	**0.99**	-	**39**	**33**	**7.9**	**43**	**1.1**
Mercury	2.00E-03	(3)	0.00027	<0.0002	<0.0002	-	0.00021	0.00034	<0.0002	0.00022	<0.0002
Nickel	2.00E-01	(3)	**0.95**	**0.35**	0.13	-	**0.55**	**0.46**	0.11	**0.21**	**0.26**
Selenium	5.00E-02	(3)	**0.059**	0.0097	0.0073	-	0.024	0.022	0.0075	0.023	0.0072
Silver	5.00E-02	(3)	<0.125	<0.005	<0.005	-	<0.05	<0.05	<0.01	<0.01	<0.005
Vanadium	1.83E-01	(4)	<1.25	<0.05	<0.05	-	<0.5	<0.5	<0.1	**0.2**	<0.05
Zinc	1.00E+01	(3)	1.1	0.068	0.047	-	0.88	0.42	0.11	0.27	0.023
Chloride	-		1600	1600	1900	-	1200	1800	660	1500	1100
Fluoride	1.60E+00	(3)	**3**	0.89	**4.8**	-	**8.8**	1.1	0.78	**13**	1.4
Sulfate	-		550	810	180	-	1800	2200	52	110	500
Volatile Organic Compounds - (EPA Method 8260B)											
1,1,1,2-Tetrachloroethane	5.24E-03	(4)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
1,1,1-Trichloroethane	6.00E-02	(3)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
1,1,2,2-Tetrachloroethane	2.00E-02	(3)	<0.004	<0.002	<0.002	<0.004	<0.002	<0.004	<0.002	<0.01	<0.002
1,1,2-Trichloroethane	5.00E-03	(2)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
1,1-Dichloroethane	2.50E-02	(3)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
1,1-Dichloroethene	5.00E-03	(3)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
1,1-Dichloropropene	-		<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
1,2,3-Trichlorobenzene	5.20E-02	(1)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
1,2,3-Trichloropropane	7.18E-06	(4)	<0.004	<0.002	<0.002	<0.004	<0.002	<0.004	<0.002	<0.01	<0.002
1,2,4-Trichlorobenzene	7.00E-02	(2)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
1,2,4-Trimethylbenzene	1.50E-02	(1)	0.01	<0.001	**0.032**	<0.002	<0.001	<0.002	0.0069	0.015	<0.001
1,2-Dibromo-3-chloropropane	2.00E-04	(2)	<0.004	<0.002	<0.002	<0.004	<0.002	<0.004	<0.002	<0.01	<0.002
1,2-Dibromoethane (EDB)	5.00E-05	(2)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
1,2-Dichlorobenzene	6.00E-01	(2)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
1,2-Dichloroethane (EDC)	5.00E-03	(2)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
1,2-Dichloropropane	5.00E-03	(2)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
1,3,5-Trimethylbenzene	8.70E-02	(1)	<0.002	<0.001	0.008	<0.002	<0.001	<0.002	0.0015	<0.005	<0.001
1,3-Dichlorobenzene	-		<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
1,3-Dichloropropane	2.90E-01	(1)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
1,4-Dichlorobenzene	7.50E-02	(2)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
1-Methylnaphthalene	9.70E-03	(5)	<0.008	<0.004	**0.011**	<0.008	<0.004	<0.008	**0.0098**	<0.02	<0.004
2,2-Dichloropropane	-		<0.004	<0.002	<0.002	<0.004	<0.002	<0.004	<0.002	<0.01	<0.002
2-Butanone	7.06E+00	(4)	<0.02	<0.01	0.047	0.02	0.026	<0.02	<0.01	<0.05	<0.01
2-Chlorotoluene	7.30E-01	(4)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
2-Hexanone	8.76E-01	(4)	<0.02	<0.01	0.016	<0.02	<0.01	<0.02	<0.01	<0.05	<0.01
2-Methylnaphthalene	2.70E-02	(1)	<0.008	<0.004	0.019	<0.008	<0.004	<0.008	0.01	<0.02	<0.004
4-Chlorotoluene	1.90E-01	(1)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
4-Isopropyltoluene	-		<0.002	<0.001	0.0015	<0.002	0.0012	<0.002	<0.001	<0.005	0.012
4-Methyl-2-pentanone	1.00E+00	(1)	<0.02	<0.01	0.015	<0.02	<0.01	<0.02	<0.01	<0.05	<0.01
Acetone	2.18E+01	(4)	0.027	0.014	0.13	0.049	0.27	<0.02	0.058	0.052	0.039
Benzene	5.00E-03	(2)	**0.017**	0.0034	**0.024**	0.0045	<0.001	<0.002	0.0023	**0.02**	0.0011
Bromobenzene	5.40E-02	(1)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
Bromodichloromethane	8.00E-02	(2)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
Bromoform	8.00E-02	(2)	<0.002	<0.001	<0.001	0.0027	<0.001	<0.002	<0.001	<0.005	<0.001
Bromomethane	8.66E-03	(4)	<0.006	<0.003	<0.003	<0.006	0.003	<0.006	<0.003	<0.015	<0.003
Carbon disulfide	1.04E+00	(4)	<0.02	<0.01	<0.01	<0.02	0.03	<0.02	<0.01	<0.05	<0.01
Carbon Tetrachloride	5.00E-03	(2)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
Chlorobenzene	1.00E-01	(2)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
Chloroethane	2.09E+01	(4)	<0.004	<0.002	<0.002	<0.004	<0.002	<0.004	<0.002	<0.01	<0.002

Table 9
Aeration Basin Groundwater Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Screening Levels	Source	SWMU 1-2 GW	SWMU 1-3 GW	SWMU 1-4 GW	SWMU 1-5 GW	SWMU 1-6 GW	SWMU 1-7 GW	SWMU 1-8 GW	SWMU 1-24 GW	SWMU 1-37 GW
			1210279-006	1210332-005	1210372-012 / 026	1210372-013	1210372-027	1210372-028	1210372-014	1210660-001	1210692-026
Sample Date			10/2/2012	10/3/2012	10/4 & 10/5/2012	10/5/2012	10/4/2012	10/4/2012	10/5/2012	10/10/2012	10/11/2012
Chloroform	8.00E-02	(2)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
Chloromethane	1.88E-01	(4)	<0.006	<0.003	<0.003	<0.006	0.0035	<0.006	<0.003	<0.015	<0.003
cis-1,2-DCE	7.00E-02	(2)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
cis-1,3-Dichloropropene	4.33E-03	(4)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
Dibromochloromethane	8.00E-02	(2)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
Dibromomethane	8.16E-03	(4)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
Dichlorodifluoromethane	2.03E-01	(4)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
Ethylbenzene	7.00E-01	(2)	0.0047	<0.001	0.016	<0.002	<0.001	<0.002	0.0028	0.0089	<0.001
Hexachlorobutadiene	8.62E-03	(4)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
Isopropylbenzene (Cumene)	6.79E-01	(4)	<0.002	<0.001	0.0015	<0.002	<0.001	<0.002	0.0013	<0.005	<0.001
Methyl tert-butyl ether (MTBE)	1.25E-01	(4)	0.043	0.04	0.059	<0.002	<0.001	0.014	**0.31**	0.065	**0.13**
Methylene Chloride	5.00E-03	(2)	<0.006	<0.003	<0.003	<0.006	<0.003	<0.006	<0.003	<0.015	<0.003
Naphthalene	1.43E-03	(4)	<0.004	<0.002	**0.032**	<0.004	<0.002	<0.004	**0.0023**	**0.022**	<0.002
n-Butylbenzene	7.80E-01	(1)	<0.006	<0.003	<0.003	<0.006	<0.003	<0.006	<0.003	<0.015	<0.003
n-Propylbenzene	5.30E-01	(1)	0.0027	<0.001	0.0027	<0.002	<0.001	<0.002	0.0017	<0.005	<0.001
sec-Butylbenzene	-		<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	0.0014	<0.005	<0.001
Styrene	1.00E-01	(2)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
tert-Butylbenzene	-		<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
Tetrachloroethene (PCE)	5.00E-03	(2)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
Toluene	7.50E-01	(3)	0.004	<0.001	0.016	0.0072	<0.001	<0.002	0.0023	0.018	<0.001
trans-1,2-DCE	1.00E-01	(2)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
trans-1,3-Dichloropropene	-		<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
Trichloroethene (TCE)	5.00E-03	(2)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
Trichlorofluoromethane	1.29E+00	(4)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
Vinyl chloride	1.00E-03	(3)	<0.002	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.001
Xylenes, Total	6.20E-01	(3)	0.02	<0.0015	0.1	<0.003	<0.0015	<0.003	0.0059	0.038	<0.0015
Semi Volatile Organics - (EPA Method 8270C)											
1,2,4-Trichlorobenzene	7.00E-02	(2)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
1,2-Dichlorobenzene	6.00E-01	(2)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
1,3-Dichlorobenzene	-		<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
1,4-Dichlorobenzene	7.50E-02	(2)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
1-Methylnaphthalene	9.70E-03	(5)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	**0.01**	<0.01
2,4,5-Trichlorophenol	3.65E+00	(4)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
2,4,6-Trichlorophenol	3.65E-02	(4)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
2,4-Dichlorophenol	1.10E-01	(4)	<0.02	<0.02	<0.02	<0.02	<0.04	<0.02	<0.02	<0.02	<0.02
2,4-Dimethylphenol	7.30E-01	(4)	0.026	<0.01	**0.85**	<0.01	<0.02	<0.01	<0.01	0.23	<0.01
2,4-Dinitrophenol	7.30E-02	(4)	<0.02	<0.02	<0.02	<0.02	<0.04	<0.02	<0.02	<0.02	<0.02
2,4-Dinitrotoluene	2.17E-03	(4)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
2,6-Dinitrotoluene	3.65E-02	(4)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
2-Chloronaphthalene	1.21E-03	(4)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
2-Chlorophenol	1.83E-01	(4)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
2-Methylnaphthalene	2.70E-02	(1)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
2-Methylphenol	7.20E-01	(1)	<0.01	<0.01	0.018	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
2-Nitroaniline	1.50E+00	(1)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
2-Nitrophenol	-		<0.01	<0.01	<0.01	<0.01	0.24	<0.01	<0.01	<0.01	<0.01
3,3'-Dichlorobenzidine	1.49E-03	(4)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
3+4-Methylphenol	-		<0.01	<0.01	0.018	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
3-Nitroaniline	-		<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
4,6-Dinitro-2-methylphenol	1.20E-03	(1)	<0.02	<0.02	<0.02	<0.02	<0.04	<0.02	<0.02	<0.02	<0.02
4-Bromophenyl phenyl ether	-		<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
4-Chloro-3-methylphenol	1.10E+00	(1)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
4-Chloroaniline	3.20E-03	(5)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
4-Chlorophenyl phenyl ether	-		<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
4-Nitroaniline	3.30E-02	(5)	<0.01	<0.02	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
4-Nitrophenol	-		<0.01	<0.01	<0.01	<0.01	0.026	<0.01	<0.01	<0.01	<0.01
Acenaphthene	2.19E+00	(4)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Acenaphthylene	-		<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Aniline	1.20E-01	(5)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Anthracene	1.10E+01	(4)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Azobenzene	1.00E-03	(5)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Benz(a)anthracene	2.95E-04	(4)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01

Table 9
Aeration Basin Groundwater Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Screening Levels	Source	SWMU 1-2 GW	SWMU 1-3 GW	SWMU 1-4 GW	SWMU 1-5 GW	SWMU 1-6 GW	SWMU 1-7 GW	SWMU 1-8 GW	SWMU 1-24 GW	SWMU 1-37 GW
			1210279-006	1210332-005	1210372-012 / 026	1210372-013	1210372-027	1210372-028	1210372-014	1210660-001	1210692-026
Sample Date			10/2/2012	10/3/2012	10/4 & 10/5/2012	10/5/2012	10/4/2012	10/4/2012	10/5/2012	10/10/2012	10/11/2012
Benzo(a)pyrene	2.00E-04	(2)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Benzo(b)fluoranthene	2.95E-04	(4)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Benzo(g,h,i)perylene	-		<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Benzo(k)fluoranthene	2.95E-03	(4)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Benzoic acid	5.80E+01	(1)	<0.02	<0.02	<0.02	<0.02	<0.04	<0.02	<0.02	<0.02	<0.02
Benzyl alcohol	1.50E+00	(1)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Bis(2-chloroethoxy)methane	4.60E-02	(1)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Bis(2-chloroethyl)ether	1.19E-04	(4)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Bis(2-chloroisopropyl)ether	9.60E-03	(4)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Bis(2-ethylhexyl)phthalate	6.00E-03	(2)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Butyl benzyl phthalate	1.40E-01	(5)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Carbazole	-		<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Chrysene	2.95E-02	(4)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Dibenz(a,h)anthracene	2.95E-05	(4)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Dibenzofuran	5.80E-03	(1)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Diethyl phthalate	2.92E+01	(4)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Dimethyl phthalate	3.65E+02	(4)	<0.01	<0.01	0.01	0.013	<0.02	<0.01	<0.01	<0.01	<0.01
Di-n-butyl phthalate	3.65E+00	(4)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Di-n-octyl phthalate	-		<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.02
Fluoranthene	1.46E+00	(4)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Fluorene	1.46E+00	(4)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Hexachlorobenzene	1.00E-03	(2)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Hexachlorobutadiene	8.62E-03	(4)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Hexachlorocyclopentadiene	5.00E-02	(2)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Hexachloroethane	1.68E-02	(4)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Indeno(1,2,3-cd)pyrene	2.95E-04	(4)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Isophorone	7.07E-01	(4)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Naphthalene	1.43E-03	(4)	<0.01	<0.01	**0.016**	<0.01	<0.02	<0.01	<0.01	**0.011**	<0.01
Nitrobenzene	1.22E-03	(4)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
N-Nitrosodi-n-propylamine	9.30E-05	(5)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
N-Nitrosodiphenylamine	1.37E-01	(4)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Pentachlorophenol	1.00E-03	(2)	<0.02	<0.02	<0.02	<0.02	<0.04	<0.02	<0.02	<0.02	<0.02
Phenanthrene	1.10E+00	(3)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Phenol	1.10E+01	(4)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Pyrene	1.10E+00	(4)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Pyridine	1.50E-02	(1)	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01
Diesel Range Organics (DRO)	-	(6)	<2	<1	**4.4**	<1	**1.3**	<1	<1	**1.9**	**1**
Gasoline Range Organics (GRO)	-		0.71	0.65	0.73	0.26	0.13	0.22	1	1.9	0.56
Motor Oil Range Organics (MRO)	-		<10	<5	<5	<5	<5	<5	<5	<5	<5

- No screening level or analytical result available
450 - bolded value exceeds screening level
(1) EPA - Regional Screening Levels (November 2012) - Tap Water
(2) EPA - Regional Screening Levels (November 2012) - MCL
(3) NMED WQCC standards - Title 20 Chapter 6, Part 2, - 20.6.2.3103 Standards for Ground Water of 10,000 mg/l TDS Concentration or less
(4) NMED Tap Water Screening Levels (June 2012)
(5) EPA - Regional Screening Levels (November 2012) - Tap Water; carcinogenic screening levels multiplied by 10
(6) NMED TPH Screening Guidelines 2012 - Table 6-2 "unknown oil"

Table 10
Old API Separator Groundwater Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Screening Levels	Source	SWMU 14-2 GW	SWMU 14-3 GW	SWMU 14-OAPIS-1GW
			1207940-029	1207900-007	1210860-004
Sample Date			7/19/2012	7/18/2012	10/16/2012
Total Metals					
Antimony	6.00E-03	(2)	0.00085	<0.0025	<0.0025
Arsenic	1.00E-02	(2)	**0.012**	**0.024**	0.0085
Barium	1.00E+00	(3)	0.54	**2.8**	0.68
Beryllium	4.00E-03	(2)	0.0021	**0.042**	<0.002
Cadmium	1.00E-02	(3)	<0.002	<0.02	<0.002
Chromium	5.00E-02	(3)	**0.075**	**0.38**	**0.012**
Cobalt	5.00E-02	(3)	0.038	**0.12**	0.044
Cyanide, Total	2.00E-01	(3)	**0.216**		0.09
Iron, Total	1.00E+00	(3)	**31**	**120**	**5.6**
Lead	1.50E-02	(2)	**0.044**	**0.19**	0.01
Manganese	2.00E-01	(3)	**1.3**	**45**	**2**
Mercury	2.00E-03	(3)	0.000033	0.00011	<0.0002
Nickel	2.00E-01	(3)	0.2	0.18	0.13
Selenium	5.00E-02	(3)	0.023	0.0096	0.016
Silver	5.00E-02	(3)	<0.005	<0.05	<0.005
Vanadium	1.83E-01	(4)	0.029	**0.52**	<0.05
Zinc	1.00E+01	(3)	0.32	1.1	0.099
Chloride	-		-	-	<0.5
Fluoride	1.60E+00	(3)	-	-	<0.1
Sulfate	-		-	-	<0.5
Dissolved Metals					
Antimony (Dissolved)	6.00E-03	(2)	<0.005	-	-
Arsenic (Dissolved)	1.00E-02	(2)	**0.011**	-	-
Barium (Dissolved)	1.00E+00	(3)	0.18	-	-
Beryllium (Dissolved)	4.00E-03	(2)	<0.002	-	-
Cadmium (Dissolved)	1.00E-02	(3)	<0.002	-	-
Chromium (Dissolved)	5.00E-02	(3)	0.0077	-	-
Cobalt (Dissolved)	5.00E-02	(3)	0.029	-	-
Iron, Total (Dissolved)	1.00E+00	(3)	0.14	-	-
Lead (Dissolved)	1.50E-02	(2)	<0.005	-	-
Manganese (Dissolved)	2.00E-01	(3)	**0.54**	-	-
Nickel (Dissolved)	2.00E-01	(3)	0.18	-	-
Selenium (Dissolved)	5.00E-02	(3)	0.023	-	-
Silver (Dissolved)	5.00E-02	(3)	<0.005	-	-
Vanadium (Dissolved)	1.83E-01	(4)	<0.05	-	-
Zinc (Dissolved)	1.00E+01	(3)	0.13	-	-
Volatile Organic Compounds - (EPA Method 8260B)					
1,1,1,2-Tetrachloroethane	5.24E-03	(4)	<0.01	<0.005	<0.01
1,1,1-Trichloroethane	6.00E-02	(3)	<0.01	<0.005	<0.01
1,1,2,2-Tetrachloroethane	2.00E-02	(3)	<0.02	<0.01	<0.02
1,1,2-Trichloroethane	5.00E-03	(2)	<0.01	<0.005	<0.01
1,1-Dichloroethane	2.50E-02	(3)	<0.01	0.0044	<0.01
1,1-Dichloroethene	5.00E-03	(3)	<0.01	0.0019	<0.01
1,1-Dichloropropene	-		<0.01	<0.005	<0.01
1,2,3-Trichlorobenzene	5.20E-02	(1)	<0.01	<0.005	<0.01
1,2,3-Trichloropropane	7.18E-06	(4)	<0.02	<0.01	<0.02
1,2,4-Trichlorobenzene	7.00E-02	(2)	<0.01	<0.005	<0.01
1,2,4-Trimethylbenzene	1.50E-02	(1)	**0.085**	**0.082**	<0.01
1,2-Dibromo-3-chloropropane	2.00E-04	(2)	<0.02	<0.01	<0.02
1,2-Dibromoethane (EDB)	5.00E-05	(2)	<0.01	<0.005	<0.01
1,2-Dichlorobenzene	6.00E-01	(2)	<0.01	<0.005	<0.01
1,2-Dichloroethane (EDC)	5.00E-03	(2)	<0.01	<0.005	<0.01
1,2-Dichloropropane	5.00E-03	(2)	<0.01	<0.005	<0.01
1,3,5-Trimethylbenzene	8.70E-02	(1)	0.0079	0.0057	<0.01
1,3-Dichlorobenzene	-		<0.01	<0.005	<0.01
1,3-Dichloropropane	2.90E-01	(1)	<0.01	<0.005	<0.01
1,4-Dichlorobenzene	7.50E-02	(2)	<0.01	<0.005	<0.01
1-Methylnaphthalene	9.70E-03	(5)	**0.061**	**0.17**	<0.04
2,2-Dichloropropane	-		<0.02	<0.01	<0.02
2-Butanone	7.06E+00	(4)	0.066	<0.05	<0.1
2-Chlorotoluene	7.30E-01	(4)	<0.01	<0.005	<0.01
2-Hexanone	8.76E-01	(4)	<0.1	<0.05	<0.1

Table 10
Old API Separator Groundwater Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Screening Levels	Source	SWMU 14-2 GW	SWMU 14-3 GW	SWMU 14-OAPIS-1GW
			1207940-029	1207900-007	1210860-004
Sample Date			7/19/2012	7/18/2012	10/16/2012
2-Methylnaphthalene	2.70E-02	(1)	**0.039**	**0.11**	<0.04
4-Chlorotoluene	1.90E-01	(1)	<0.01	<0.005	<0.01
4-Isopropyltoluene	-		<0.01	0.0033	<0.01
4-Methyl-2-pentanone	1.00E+00	(1)	<0.1	<0.05	<0.1
Acetone	2.18E+01	(4)	0.42	0.0083	<0.1
Benzene	5.00E-03	(2)	**0.067**	**0.097**	**0.013**
Bromobenzene	5.40E-02	(1)	<0.01	<0.005	<0.01
Bromodichloromethane	8.00E-02	(2)	<0.01	<0.005	<0.01
Bromoform	8.00E-02	(2)	<0.01	<0.005	<0.01
Bromomethane	8.66E-03	(4)	<0.03	<0.015	<0.03
Carbon disulfide	1.04E+00	(4)	<0.1	<0.05	<0.1
Carbon Tetrachloride	5.00E-03	(2)	<0.01	<0.005	<0.01
Chlorobenzene	1.00E-01	(2)	<0.01	<0.005	<0.01
Chloroethane	2.09E+01	(4)	<0.02	<0.01	<0.02
Chloroform	8.00E-02	(2)	<0.01	<0.005	<0.01
Chloromethane	1.88E-01	(4)	<0.03	<0.015	<0.03
cis-1,2-DCE	7.00E-02	(2)	<0.01	<0.005	<0.01
cis-1,3-Dichloropropene	4.33E-03	(4)	<0.01	<0.005	<0.01
Dibromochloromethane	8.00E-02	(2)	<0.01	<0.005	<0.01
Dibromomethane	8.16E-03	(4)	<0.01	<0.005	<0.01
Dichlorodifluoromethane	2.03E-01	(4)	<0.01	<0.005	<0.01
Ethylbenzene	7.00E-01	(2)	0.049	0.054	<0.01
Hexachlorobutadiene	8.62E-03	(4)	<0.01	<0.005	<0.01
Isopropylbenzene (Cumene)	6.79E-01	(4)	0.0063	0.0081	<0.01
Methyl tert-butyl ether (MTBE)	1.25E-01	(4)	**0.31**	**0.25**	**0.44**
Methylene Chloride	5.00E-03	(2)	<0.03	**0.0075**	<0.03
Naphthalene	1.43E-03	(4)	**0.042**	**0.045**	<0.02
n-Butylbenzene	7.80E-01	(1)	<0.01	0.0043	<0.03
n-Propylbenzene	5.30E-01	(1)	0.01	0.012	<0.01
sec-Butylbenzene	-		<0.01	0.0035	<0.01
Styrene	1.00E-01	(2)	<0.01	<0.005	<0.01
tert-Butylbenzene	-		<0.01	<0.005	<0.01
Tetrachloroethene (PCE)	5.00E-03	(2)	<0.01	<0.005	<0.01
Toluene	7.50E-01	(3)	<0.01	0.013	<0.01
trans-1,2-DCE	1.00E-01	(2)	<0.01	<0.005	<0.01
trans-1,3-Dichloropropene	-		<0.01	<0.005	<0.01
Trichloroethene (TCE)	5.00E-03	(2)	<0.01	<0.005	<0.01
Trichlorofluoromethane	1.29E+00	(4)	<0.01	<0.005	<0.01
Vinyl chloride	1.00E-03	(3)	<0.01	<0.005	<0.01
Xylenes, Total	6.20E-01	(3)	0.045	0.044	<0.015
Semi Volatile Organics - (EPA Method 8270C)					
1,2,4-Trichlorobenzene	7.00E-02	(2)	<0.01	<0.01	<0.01
1,2-Dichlorobenzene	6.00E-01	(2)	<0.01	<0.01	<0.01
1,3-Dichlorobenzene	-		<0.01	<0.01	<0.01
1,4-Dichlorobenzene	7.50E-02	(2)	<0.01	<0.01	<0.01
1-Methylnaphthalene	9.70E-03	(5)	<0.01	**0.14**	<0.01
2,4,5-Trichlorophenol	3.65E+00	(4)	<0.01	<0.01	<0.01
2,4,6-Trichlorophenol	3.65E-02	(4)	<0.01	<0.01	<0.01
2,4-Dichlorophenol	1.10E-01	(4)	<0.02	<0.02	<0.02
2,4-Dimethylphenol	7.30E-01	(4)	0.027	0.034	<0.01
2,4-Dinitrophenol	7.30E-02	(4)	<0.02	<0.02	<0.02
2,4-Dinitrotoluene	2.17E-03	(4)	<0.01	<0.01	<0.01
2,6-Dinitrotoluene	3.65E-02	(4)	<0.01	<0.01	<0.01
2-Chloronaphthalene	1.21E-03	(4)	<0.01	<0.01	<0.01
2-Chlorophenol	1.83E-01	(4)	<0.01	<0.01	<0.01
2-Methylnaphthalene	2.70E-02	(1)	<0.01	**0.077**	<0.01
2-Methylphenol	7.20E-01	(1)	<0.01	0.0073	<0.01
2-Nitroaniline	1.50E+00	(1)	<0.01	<0.01	<0.01
2-Nitrophenol	-		<0.01	<0.01	<0.01
3,3'-Dichlorobenzidine	1.49E-03	(4)	<0.01	<0.01	<0.01
3+4-Methylphenol	-		<0.01	<0.01	<0.01
3-Nitroaniline	-		<0.01	<0.01	<0.01
4,6-Dinitro-2-methylphenol	1.20E-03	(1)	<0.02	<0.02	<0.02
4-Bromophenyl phenyl ether	-		<0.01	<0.01	<0.01

Table 10
Old API Separator Groundwater Analytical Results Summary
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Screening Levels	Source	SWMU 14-2 GW	SWMU 14-3 GW	SWMU 14-OAPIS-1GW
			1207940-029	1207900-007	1210860-004
Sample Date			7/19/2012	7/18/2012	10/16/2012
4-Chloro-3-methylphenol	1.10E+00	(1)	<0.01	<0.01	<0.01
4-Chloroaniline	3.20E-03	(5)	<0.01	<0.01	<0.01
4-Chlorophenyl phenyl ether	-		<0.01	<0.01	<0.01
4-Nitroaniline	3.30E-02	(5)	<0.02	<0.02	<0.01
4-Nitrophenol	-		<0.01	<0.01	<0.01
Acenaphthene	2.19E+00	(4)	<0.01	<0.01	<0.01
Acenaphthylene	-		<0.01	<0.01	<0.01
Aniline	1.20E-01	(5)	<0.01	<0.01	<0.01
Anthracene	1.10E+01	(4)	<0.01	<0.01	<0.01
Azobenzene	1.00E-03	(5)	<0.01	<0.01	<0.01
Benz(a)anthracene	2.95E-04	(4)	<0.01	<0.01	<0.01
Benzo(a)pyrene	2.00E-04	(2)	<0.01	<0.01	<0.01
Benzo(b)fluoranthene	2.95E-04	(4)	<0.01	<0.01	<0.01
Benzo(g,h,i)perylene	-		<0.01	<0.01	<0.01
Benzo(k)fluoranthene	2.95E-03	(4)	<0.01	<0.01	<0.01
Benzoic acid	5.80E+01	(1)	<0.02	<0.02	<0.02
Benzyl alcohol	1.50E+00	(1)	<0.01	<0.01	<0.01
Bis(2-chloroethoxy)methane	4.60E-02	(1)	<0.01	<0.01	<0.01
Bis(2-chloroethyl)ether	1.19E-04	(4)	<0.01	<0.01	<0.01
Bis(2-chloroisopropyl)ether	9.60E-03	(4)	<0.01	<0.01	<0.01
Bis(2-ethylhexyl)phthalate	6.00E-03	(2)	<0.01	<0.01	<0.01
Butyl benzyl phthalate	1.40E-01	(5)	<0.01	<0.01	<0.01
Carbazole	-		<0.01	<0.01	<0.01
Chrysene	2.95E-02	(4)	<0.01	<0.01	<0.01
Dibenz(a,h)anthracene	2.95E-05	(4)	<0.01	<0.01	<0.01
Dibenzofuran	2.20E-01	(1)	<0.01	<0.01	<0.01
Diethyl phthalate	2.92E+01	(4)	<0.01	<0.01	<0.01
Dimethyl phthalate	3.65E+02	(4)	<0.01	<0.01	<0.01
Di-n-butyl phthalate	3.65E+00	(4)	0.02	<0.01	<0.01
Di-n-octyl phthalate	-		<0.01	<0.01	<0.02
Fluoranthene	1.46E+00	(4)	<0.01	<0.01	<0.01
Fluorene	1.46E+00	(4)	<0.01	<0.01	<0.01
Hexachlorobenzene	1.00E-03	(2)	<0.01	<0.01	<0.01
Hexachlorobutadiene	8.62E-03	(4)	<0.01	<0.01	<0.01
Hexachlorocyclopentadiene	5.00E-02	(2)	<0.01	<0.01	<0.01
Hexachloroethane	1.68E-02	(4)	<0.01	<0.01	<0.01
Indeno(1,2,3-cd)pyrene	2.95E-04	(4)	<0.01	<0.01	<0.01
Isophorone	7.07E-01	(4)	<0.01	<0.01	<0.01
Naphthalene	1.43E-03	(4)	<0.01	**0.024**	<0.01
Nitrobenzene	1.22E-03	(4)	<0.01	<0.01	<0.01
N-Nitrosodimethylamine			<0.01	<0.01	<0.01
N-Nitrosodi-n-propylamine	9.30E-05	(5)	<0.01	<0.01	<0.01
N-Nitrosodiphenylamine	1.37E-01	(4)	<0.01	<0.01	<0.01
Pentachlorophenol	1.00E-03	(2)	<0.02	<0.02	<0.02
Phenanthrene	1.10E+00	(4)	<0.01	0.02	<0.01
Phenol	1.10E+01	(4)	<0.01	<0.01	<0.01
Pyrene	1.10E+00	(4)	<0.01	<0.01	<0.01
Pyridine	1.50E-01	(1)	<0.01	<0.01	<0.01
Diesel Range Organics (DRO)	-	(6)	**6.5**	**83**	<1
Gasoline Range Organics (GRO)	-		1.2	1.5	<0.5
Motor Oil Range Organics (MRO)	-		<5	<50	<5

-- No screening level or analytical result available
450 - bolded value exceeds screening level
(1) EPA - Regional Screening Levels (November 2012) - Tap Water
(2) EPA - Regional Screening Levels (November 2012) - MCL
(3) NMED WQCC standards - Title 20 Chapter 6, Part 2, - 20.6.2.3103 Standards for Ground Water of 10,000 mg/l T
(4) NMED Tap Water Screening Levels (June 2012)
(5) EPA - Regional Screening Levels (November 2012) - Tap Water; carcinogenic screening levels multiplied by 10
(6) NMED TPH Screening Guidelines 2012 - "unknown oil"

TABLE 11
Groundwater Field Measurements
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

		Ground Water Data						
Well	**Date**	**Well Volume**	**Temp (degrees C)**	**Specific Conductivity (mS/cm)**	**Dissolved Oxygen (mg/L)**	**pH**	**ORP**	**Purge Volume (calculated / actual - gallons)**
OAPIS-1	10/15/2012	0	19.24	5.618	3.73	7.78	-47.1	9.15/9.25
		1	18.19	5.596	4.53	7.24	-95.2	
		2	16.97	5.450	4.71	6.98	-79.1	
		3	15.99	5.331	4.94	6.86	-81.8	

Table 12
SWMU No. 1 Soil Cumulative Risk and Hazard Index Evaluation
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Maximum Concentration	Maximum Concentration divided by Residential Soil Screening Level	Maximum Concentration divided by Non-Residential Soil Screening Level
CARCINOGENIC CONSTITUENTS							
Metals (mg/kg)							
Chromium VI	2.97E+00	(1)	6.56E+01	(4)	400	134.7449	6.0950
Volatile Organic Compounds - (EPA Method 8260) mg/kg							
1-Methylnaphthalene	1.60E+02	(3)	5.30E+02	(6)	35	0.21875	0.06604
Benzene	1.54E+01	(1)	1.38E+02	(4)	3.2	0.20804	0.02314
Ethylbenzene	6.84E+01	(1)	1.83E+03	(4)	5.8	0.08474	0.00317
Methyl tert-butyl ether (MTBE)	9.01E+02	(1)	2.49E+04	(4)	0.0444	0.00005	0.00000
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	13	0.30255	0.08235
Semi Volatile Organics - (EPA Method 8270) mg/kg							
Bis(2-ethylhexyl)phthalate	3.47E+02	(1)	4.76E+03	(4)	1.5	0.0043	0.0003
Carcinogenic Constituents Cumulative Risk x 10^{-5}						**135.563**	**6.270**
NON-CARCINOGENIC CONSTITUENTS							
Metals (mg/kg)							
Barium	1.56E+04	(1)	4.35E+03	(4)	1300	0.0836	0.2986
Beryllium	1.56E+02	(1)	1.44E+02	(4)	1.2	0.0077	0.0083
Chromium III	1.17E+05	(1)	4.65E+05	(4)	400	0.0034	0.0009
Cobalt	2.30E+01	(2)	3.00E+02	(4)	11	0.4783	0.0367
Cyanide	4.69E+01	(1)	1.86E+02	(4)	6	0.1279	0.0323
Iron	5.48E+04	(1)	2.17E+05	(4)	24000	0.4384	0.1107
Lead	4.00E+02	(1)	8.00E+02	(4)	80	0.2000	0.1000
Manganese	1.86E+03	(1)	4.40E+02	(4)	2800	1.5014	6.3568
Mercury	1.56E+01	(1)	1.36E+01	(4)	1.4	0.0896	0.1028
Nickel	1.56E+03	(1)	6.19E+03	(4)	16	0.0103	0.0026
Vanadium	3.91E+02	(1)	1.55E+03	(4)	53	0.1355	0.0342
Zinc	2.35E+04	(1)	9.29E+04	(4)	720	0.0307	0.0077
Volatile Organic Compounds - (EPA Method 8260) mg/kg							
1,2,4-Trimethylbenzene	6.20E+01	(2)	2.60E+02	(5)	17	0.2742	0.0654
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.00E+04	(5)	5.8	0.0074	0.0006
2-Butanone (MEK)	3.71E+04	(1)	8.43E+04	(4)	0.0722		
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	48	0.2087	0.0218
4-Methyl-2-pentanone	5.30E+03	(2)	5.30E+04	(5)	0.0116	0.0000	0.0000

Table 12
SWMU No. 1 Soil Cumulative Risk and Hazard Index Evaluation
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Maximum Concentration	Maximum Concentration divided by Residential Soil Screening Level	Maximum Concentration divided by Non-Residential Soil Screening Level
Acetone	6.66E+04	(1)	2.21E+05	(4)	54.1	0.0008	0.0002
Carbon disulfide	1.53E+03	(1)	1.58E+03	(4)	0.0156	0.0000	0.0000
Isopropylbenzene	2.43E+03	(1)	2.81E+03	(4)	0.0031	0.0000	0.0000
n-Propylbenzene	3.40E+03	(2)	2.10E+04	(5)	2.8	0.0008	0.0001
sec-Butylbenzene	-	-	-	-	0.00128	-	-
Toluene	5.27E+03	(1)	1.34E+04	(4)	3.54	0.0007	0.0003
Xylenes, Total	8.14E+02	(1)	7.43E+02	(4)	24	0.0295	0.0323
Semi Volatile Organics - (EPA Method 8270) mg/kg							
2,4-Dimethylphenol	1.22E+03	(1)	4.76E+03	(4)	0.64	0.0005	0.0001
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	55	0.2391	0.0250
Fluorene	2.29E+03	(1)	8.91E+03	(4)	3.7	0.0016	0.0004
Phenanthrene	1.83E+03	(1)	7.15E+03	(4)	11	0.0060	0.0015
Pyrene	1.72E+03	(1)	6.68E+03	(4)	1.5	0.0009	0.0002
Non-Carcinogenic Constituents Hazard Index						**0.770**	**0.148**

-- No screening level or analytical result available

NMED - Risk Assessment Guidance for Site Investigations and Remediation (June 14, 2012)

EPA - Regional Screening Levels (May 2012)

(1) NMED Residential Screening Level
(2) EPA Residential Screening Level
(3) EPA Residential - Screening Levels x 10
(4) NMED Construction Worker Screening Level
(5) EPA Industrial - Screening Levels
(6) EPA Industrial - Screening Levels x 10

Table 13
SWMU No. 14 Soil Cumulative Risk and Hazard Index Evaluation
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Maximum Concentration	Maximum Concentration divided by Residential Soil Screening Level	Maximum Concentration divided by Non-Residential Soil Screening Level
CARCINOGENIC CONSTITUENTS							
Metals (mg/kg)							
Arsenic	3.90E+00	(1)	5.30E+01	(4)	1.6	0.4105	0.0302
Chromium VI	2.97E+00	(1)	6.56E+01	(4)	400	134.7449	6.0950
Volatile Organic Compounds - (EPA Method 8260) mg/kg							
1,1,2-Trichloroethane	2.81E+00	(1)	4.72E+02	(4)	1	0.3557	0.0021
1,1-Dichloroethane	6.45E+01	(1)	1.70E+03	(4)	0.000918	0.0000	0.0000
1,2-Dibromo-3-chloropropane	1.86E+00	(1)	5.07E+00	(4)	2.2	1.1804	0.4343
1,2-Dibromoethane (EDB)	5.88E-01	(1)	1.60E+01	(4)	1.2	2.0400	0.0751
1,2-Dichloropropane	1.52E+01	(1)	2.50E+01	(4)	0.82	0.05381	0.03280
1,4-Dichlorobenzene	3.17E+01	(1)	8.31E+02	(4)	0.000252	0.00001	0.00000
1-Methylnaphthalene	1.60E+02	(3)	5.30E+02	(6)	45	0.28125	0.08491
Benzene	1.54E+01	(1)	1.38E+02	(4)	5.9	0.38357	0.04266
Chloroform	5.86E+00	(1)	1.54E+02	(4)	0.0069	0.00118	0.00004
Ethylbenzene	6.84E+01	(1)	1.83E+03	(4)	23	0.33602	0.01256
Methyl tert-butyl ether (MTBE)	9.01E+02	(1)	2.49E+04	(4)	1.5	0.00166	0.00006
Methylene chloride	4.09E+02	(1)	1.12E+03	(4)	2	0.00489	0.00179
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	17	0.39565	0.10769
Semi Volatile Organics - (EPA Method 8270) mg/kg							
Benz(a)anthracene	1.48E+00	(1)	2.13E+02	(4)	0.61	0.4132	0.0029
Bis(2-chloroethyl)ether	2.68E+00	(1)	7.78E+01	(4)	0.43	0.1605	0.0055
Bis(2-ethylhexyl)phthalate	3.47E+02	(1)	4.76E+03	(4)	2.6	0.0075	0.0005
Chrysene	1.48E+02	(1)	2.06E+04	(4)	0.65	0.0044	0.0000
Carcinogenic Constituents Cumulative Risk x 10^{-5}						**140.775**	**6.928**
NON-CARCINOGENIC CONSTITUENTS							
Metals (mg/kg)							
Antimony	3.13E+01	(1)	1.24E+02	(4)	5.3	0.1694	0.0428
Barium	1.56E+04	(1)	4.35E+03	(4)	2400	0.1543	0.5513
Beryllium	1.56E+02	(1)	1.44E+02	(4)	1.4	0.0090	0.0097
Chromium III	1.17E+05	(1)	4.65E+05	(4)	110	0.0009	0.0002
Cobalt	2.30E+01	(2)	3.00E+02	(4)	10	0.4348	0.0333
Cyanide	4.69E+01	(1)	1.86E+02	(4)	5.5	0.1172	0.0296

Table 13
SWMU No. 14 Soil Cumulative Risk and Hazard Index Evaluation
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Maximum Concentration	Maximum Concentration divided by Residential Soil Screening Level	Maximum Concentration divided by Non-Residential Soil Screening Level
Iron	5.48E+04	(1)	2.17E+05	(4)	26000	0.4749	0.1199
Lead	4.00E+02	(1)	8.00E+02	(4)	14	0.0350	0.0175
Manganese	1.86E+03	(1)	4.40E+02	(4)	1800	0.9652	4.0865
Mercury	1.56E+01	(1)	1.36E+01	(4)	1.3	0.0832	0.0954
Nickel	1.56E+03	(1)	6.19E+03	(4)	17	0.0109	0.0027
Vanadium	3.91E+02	(1)	1.55E+03	(4)	52	0.1330	0.0336
Zinc	2.35E+04	(1)	9.29E+04	(4)	230	0.0098	0.0025
Volatile Organic Compounds - (EPA Method 8260) mg/kg							
1,1,2,2-Tetrachloroethane	8.02E+00	(1)	2.21E+02	(4)	0.00104	0.0001	0.0000
1,2,4-Trimethylbenzene	6.20E+01	(2)	2.60E+02	(5)	44	0.7097	0.1692
1,3,5-Trimethylbenzene	7.80E+02	(2)	1.00E+04	(5)	16	0.0205	0.0016
2-Butanone (MEK)	3.71E+04	(1)	8.43E+04	(4)	0.055	0.0000	0.0000
2-Chlorotoluene	1.56E+03	(1)	6.19E+03	(4)	0.46	0.0003	0.0001
2-Hexanone	9.38E+02	(1)	9.73E+02	(4)	0.37	0.0004	0.0004
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	90	0.3913	0.0409
4-Isopropyltoluene	-	-	-	-	3.4	-	-
4-Methyl-2-pentanone	5.30E+03	(2)	5.30E+04	(5)	0.0142	0.0000	0.0000
Acetone	6.66E+04	(1)	2.21E+05	(4)	47	0.0007	0.0002
Carbon disulfide	1.53E+03	(1)	1.58E+03	(4)	0.025	0.0000	0.0000
Chlorobenzene	3.76E+02	(1)	4.06E+02	(4)	0.11	0.0003	0.0003
Chloromethane	2.75E+02	(1)	2.41E+02	(4)	0.013	0.0000	0.0001
Isopropylbenzene	2.43E+03	(1)	2.81E+03	(4)	6.6	0.0027	0.0024
n-Butylbenzene	3.90E+03	(2)	5.10E+04	(5)	4.6	0.0012	0.0001
n-Propylbenzene	3.40E+03	(2)	2.10E+04	(5)	8.1	0.0024	0.0004
sec-Butylbenzene	-	-	-	-	3.8	-	-
Styrene	7.28E+03	(1)	9.99E+03	(4)	0.077	0.0000	0.0000
Toluene	5.27E+03	(1)	1.34E+04	(4)	45	0.0085	0.0033
Trichlorofluoromethane	1.41E+03	(1)	1.30E+03	(4)	0.000685	0.0000	0.0000
Xylenes, Total	8.14E+02	(1)	7.43E+02	(4)	120	0.1474	0.1615
Semi Volatile Organics - (EPA Method 8270) mg/kg							
2,4-Dimethylphenol	1.22E+03	(1)	4.76E+03	(4)	0.52	0.0004	0.0001
2,4-Dinitrophenol	1.22E+02	(1)	4.76E+02	(4)	0.66	0.0054	0.0014
2-Methylnaphthalene	2.30E+02	(2)	2.20E+03	(5)	46	0.2000	0.0209

Table 13
SWMU No. 14 Soil Cumulative Risk and Hazard Index Evaluation
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Maximum Concentration	Maximum Concentration divided by Residential Soil Screening Level	Maximum Concentration divided by Non-Residential Soil Screening Level
CARCINOGENIC CONSTITUENTS							
Metals (mg/kg)							
Arsenic	3.90E+00	(1)	5.30E+01	(4)	1.6	0.4105	0.0302
Chromium VI	2.97E+00	(1)	6.56E+01	(4)	400	134.7449	6.0950
Volatile Organic Compounds - (EPA Method 8260) mg/kg							
1,1,2-Trichloroethane	2.81E+00	(1)	4.72E+02	(4)	1	0.3557	0.0021
1,1-Dichloroethane	6.45E+01	(1)	1.70E+03	(4)	0.000918	0.0000	0.0000
1,2-Dibromo-3-chloropropane	1.86E+00	(1)	5.07E+00	(4)	2.2	1.1804	0.4343
1,2-Dibromoethane (EDB)	5.88E-01	(1)	1.60E+01	(4)	1.2	2.0400	0.0751
1,2-Dichloropropane	1.52E+01	(1)	2.50E+01	(4)	0.82	0.05381	0.03280
1,4-Dichlorobenzene	3.17E+01	(1)	8.31E+02	(4)	0.000252	0.00001	0.00000
1-Methylnaphthalene	1.60E+02	(3)	5.30E+02	(6)	45	0.28125	0.08491
Benzene	1.54E+01	(1)	1.38E+02	(4)	5.9	0.38357	0.04266
Chloroform	5.86E+00	(1)	1.54E+02	(4)	0.0069	0.00118	0.00004
Ethylbenzene	6.84E+01	(1)	1.83E+03	(4)	23	0.33602	0.01256
Methyl tert-butyl ether (MTBE)	9.01E+02	(1)	2.49E+04	(4)	1.5	0.00166	0.00006
Methylene chloride	4.09E+02	(1)	1.12E+03	(4)	2	0.00489	0.00179
Naphthalene	4.30E+01	(1)	1.58E+02	(4)	17	0.39565	0.10769
Semi Volatile Organics - (EPA Method 8270) mg/kg							
Benz(a)anthracene	1.48E+00	(1)	2.13E+02	(4)	0.61	0.4132	0.0029
Bis(2-chloroethyl)ether	2.68E+00	(1)	7.78E+01	(4)	0.43	0.1605	0.0055
Bis(2-ethylhexyl)phthalate	3.47E+02	(1)	4.76E+03	(4)	2.6	0.0075	0.0005
Chrysene	1.48E+02	(1)	2.06E+04	(4)	0.65	0.0044	0.0000
Carcinogenic Constituents Cumulative Risk x 10^{-5}						**140.775**	**6.928**
NON-CARCINOGENIC CONSTITUENTS							
Metals (mg/kg)							
Antimony	3.13E+01	(1)	1.24E+02	(4)	5.3	0.1694	0.0428
Barium	1.56E+04	(1)	4.35E+03	(4)	2400	0.1543	0.5513
Beryllium	1.56E+02	(1)	1.44E+02	(4)	1.4	0.0090	0.0097
Chromium III	1.17E+05	(1)	4.65E+05	(4)	110	0.0009	0.0002
Cobalt	2.30E+01	(2)	3.00E+02	(4)	10	0.4348	0.0333
Cyanide	4.69E+01	(1)	1.86E+02	(4)	5.5	0.1172	0.0296

Table 13
SWMU No. 14 Soil Cumulative Risk and Hazard Index Evaluation
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Residential Soil Screening Level	Source	Non-Residential Soil Screening Level	Source	Maximum Concentration	Maximum Concentration divided by Residential Soil Screening Level	Maximum Concentration divided by Non-Residential Soil Screening Level
2-Methylphenol	3.10E+03	(2)	3.10E+04	(5)	1.1	0.0004	0.0000
3+4-Methylphenol	-	-	-	-	2.2	-	-
4-Nitrophenol	-	-	-	-	0.22	-	-
Acenaphthene	3.44E+03	(1)	1.86E+04	(4)	2	0.0006	0.0001
Benzoic acid	2.40E+05	(2)	2.50E+06	(5)	2.3	0.0000	0.0000
Benzyl alcohol	6.10E+03	(2)	6.20E+04	(5)	0.32	0.0001	0.0000
Fluorene	2.29E+03	(1)	8.91E+03	(4)	3	0.0013	0.0003
Phenanthrene	1.83E+03	(1)	7.15E+03	(4)	9.8	0.0053	0.0014
Phenol	1.83E+04	(1)	6.88E+04	(4)	2.8	0.0002	0.0000
Pyrene	1.72E+03	(1)	6.68E+03	(4)	2.6	0.0015	0.0004
Non-Carcinogenic Constituents Hazard Index						**1.501**	**0.405**

-- No screening level or analytical result available

NMED - Risk Assessment Guidance for Site Investigations and Remediation (June 14, 2012)

EPA - Regional Screening Levels (May 2012)

(1) NMED Residential Screening Level
(2) EPA Residential Screening Level
(3) EPA Residential - Screening Levels x 10
(4) NMED Construction Worker Screening Level
(5) EPA Industrial - Screening Levels
(6) EPA Industrial - Screening Levels x 10

Table 14
SWMU No. 1 Groundwater Cumulative Risk Evaluation
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Screening Levels	Source	Maximum Concentration	Maximum Concentration divided by Residential Groundwater Screening Level
CARCINOGENIC CONSTITUENTS				
Metals (mg/l)				
Arsenic	1.00E-02	(2)	0.063	6.3
Volatile Organic Compounds - (EPA Method 8260) ug/l				
1-Methylnaphthalene	9.70E-03	(5)	0.011	1.13
Benzene	5.00E-03	(2)	0.024	4.80
Bromoform	8.00E-02	(2)	0.0027	0.03
Ethylbenzene	7.00E-01	(2)	0.016	0.02
Methyl tert-butyl ether (MTBE)	1.25E-01	(4)	0.31	2.49
Naphthalene	1.43E-03	(4)	0.032	22.36
Semi Volatile Organics - (EPA Method 8270) ug/l				
1-Methylnaphthalene	9.70E-03	(5)	0.010	1.03
Carcinogenic Constituents Cumulative Risk x 10^{-5}				**38.17**

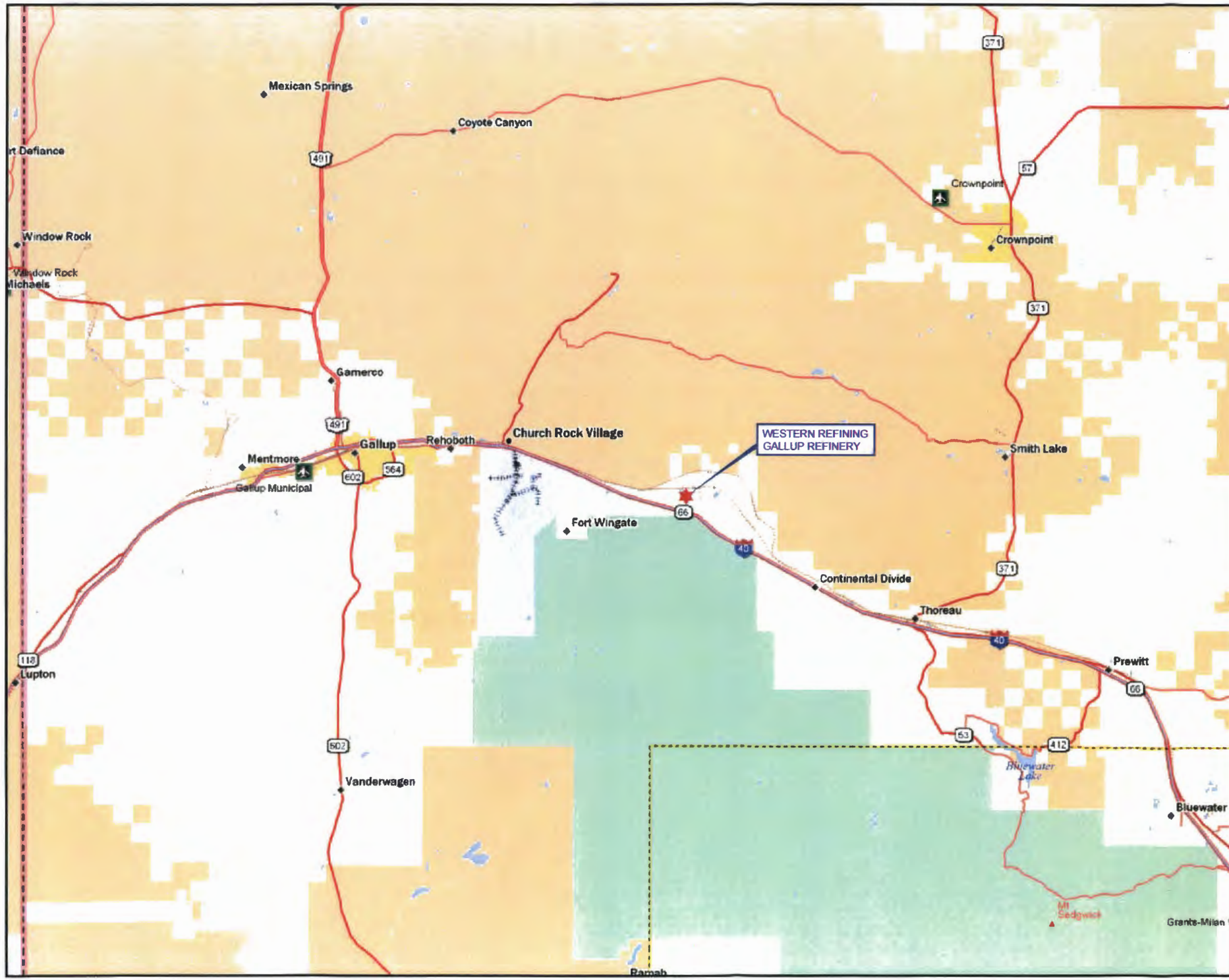
- No screening level or analytical result available
(1) EPA - Regional Screening Levels (November 2012) - Tap Water
(2) EPA - Regional Screening Levels (November 2012) - MCL
(3) NMED WQCC standards - Title 20 Chapter 6, Part 2, - 20.6.2.3103 Standards for Ground Water of 10,000 mg/l TDS
(4) NMED Tap Water Screening Levels (June 2012)
(5) EPA - Regional Screening Levels (November 2012) - Tap Water; carcinogenic screening levels multiplied by 10

Table 15
SWMU No. 14 Groundwater Cumulative Risk Evaluation
Western Refining Southwest, Inc. - Gallup Refinery
Gallup, New Mexico

Analytes	Screening Levels	Source	Maximum Concentration	Maximum Concentration divided by Residential Groundwater Screening Level
CARCINOGENIC CONSTITUENTS				
Metals (mg/l)				
Arsenic	1.00E-02	(2)	0.024	2.4
Volatile Organic Compounds - (EPA Method 8260) ug/l				
1-Methylnaphthalene	9.70E-03	(5)	0.17	17.53
Benzene	5.00E-03	(2)	0.097	19.40
Ethylbenzene	7.00E-01	(2)	0.054	0.08
Methyl tert-butyl ether (MTBE)	1.25E-01	(4)	0.31	2.49
Naphthalene	1.43E-03	(4)	0.045	31.44
Semi Volatile Organics - (EPA Method 8270) ug/l				
1-Methylnaphthalene	9.70E-03	(5)	1.40E-01	14.43
Carcinogenic Constituents Cumulative Risk x 10^{-5}				**87.77**

- No screening level or analytical result available
(1) EPA - Regional Screening Levels (November 2012) - Tap Water
(2) EPA - Regional Screening Levels (November 2012) - MCL
(3) NMED WQCC standards - Title 20 Chapter 6, Part 2, - 20.6.2.3103 Standards for Ground Water of 10,000 mg/l TDS
(4) NMED Tap Water Screening Levels (June 2012)
(5) EPA - Regional Screening Levels (November 2012) - Tap Water; carcinogenic screening levels multiplied by 10

Figures



Map Source: DeLorme Street Atlas USA 2007 Plus.

N

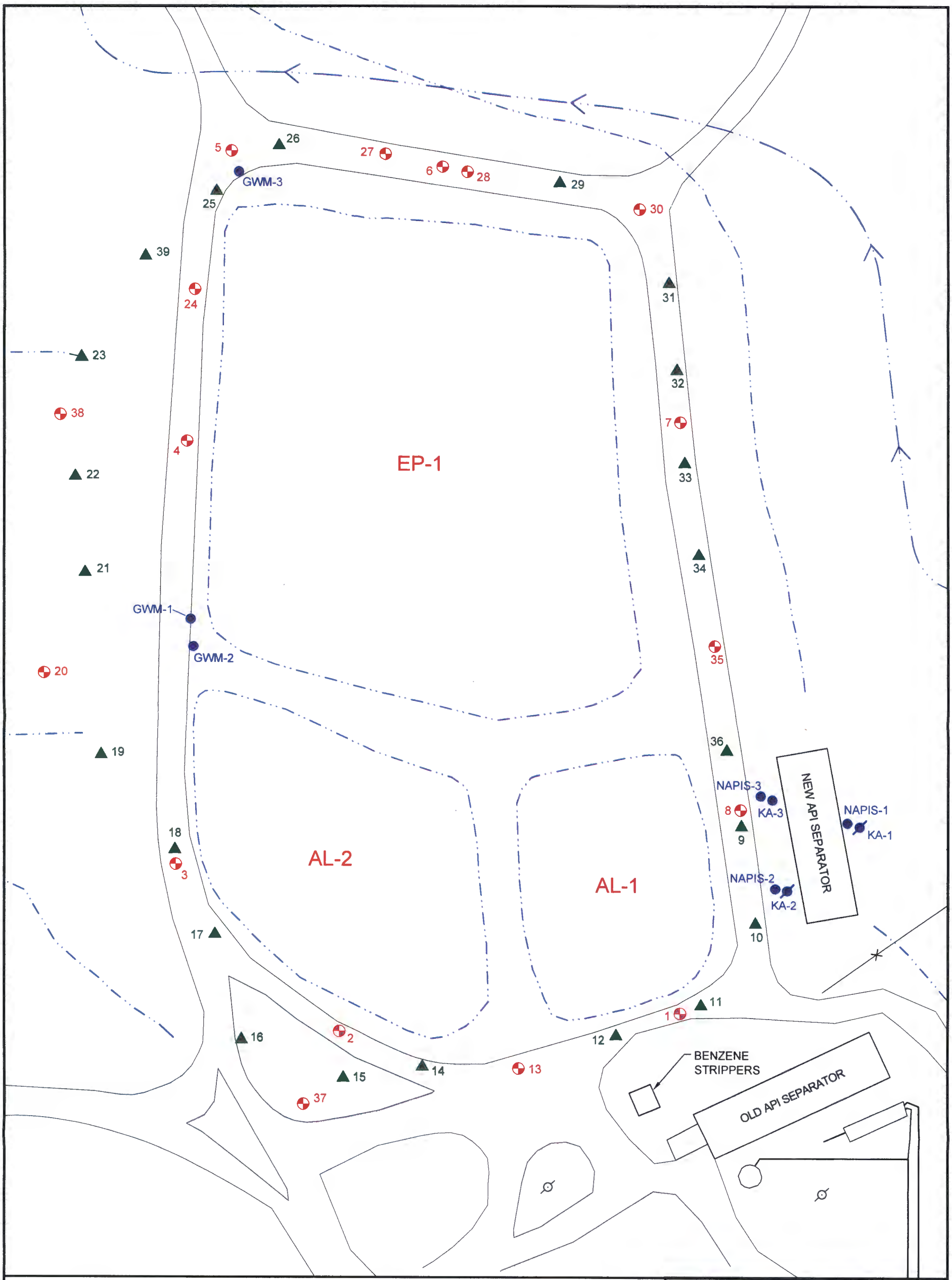
0 5
SCALE IN MILES

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 01/31/13	FILE: WestRef-B165

FIGURE 1
SITE LOCATION MAP
GALLUP REFINERY

RPS
Cielo Center
1250 S. Capital of Texas Highway
Building 3, Suite 200
Austin, Texas 78746
TBPE No. 1298



LEGEND

- PERIMETER SOIL BORING LOCATION
- HAND AUGER SAMPLE LOCATION
- GWM-1 GROUNDWATER WELL LOCATION
- KA-1 PLUGGED & ABANDONED MONITOR WELL LOCATION

N

0 50
SCALE IN FEET

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining	DATE:01/31/13	FILE:WestRef-B152

FIGURE 2
SWMU No. 1 SAMPLE LOCATIONS
GALLUP REFINERY

RPS
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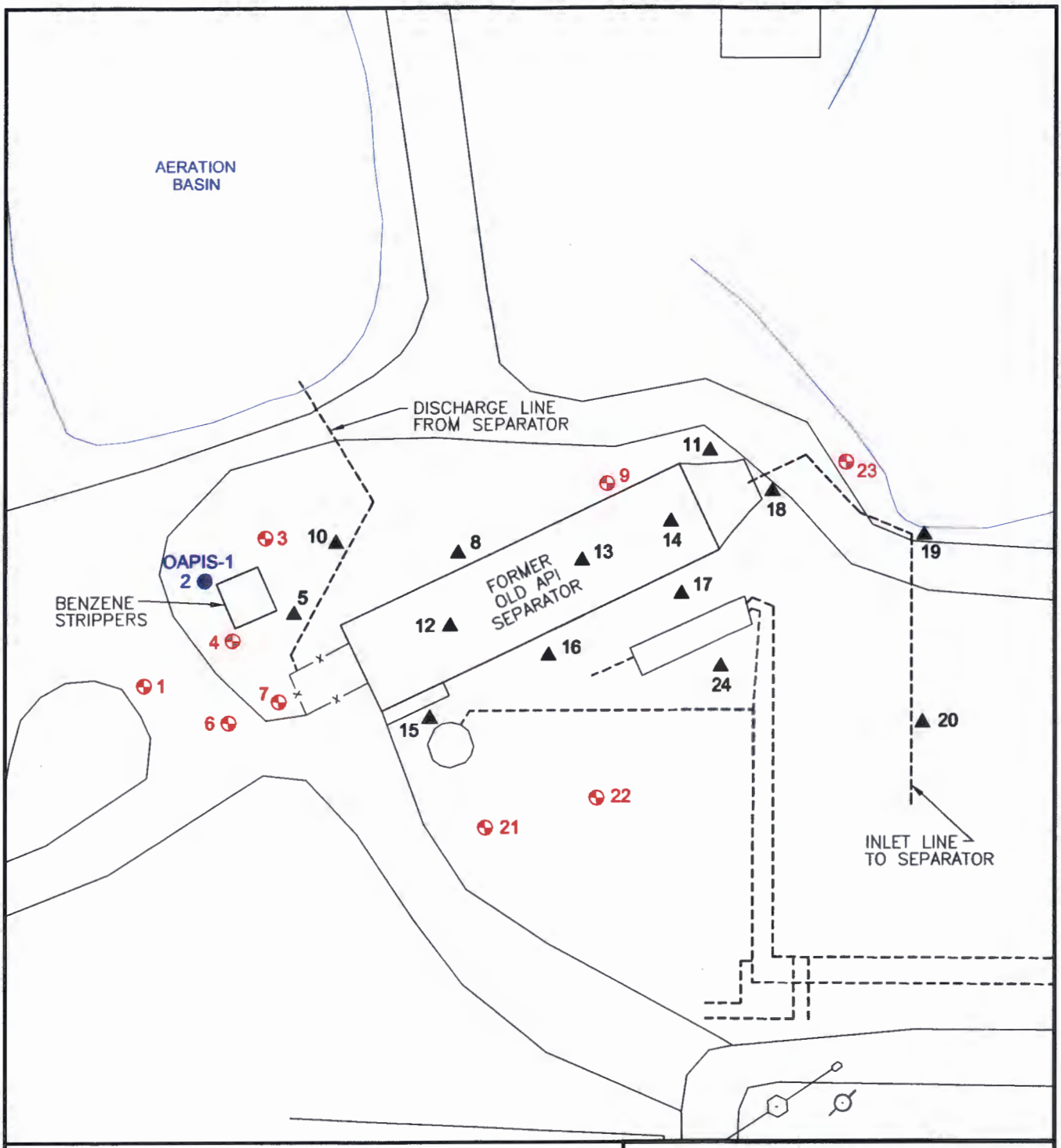
1250 S. Capital of Texas Highway
Building 3, Suite 200
Austin, Texas 78746
TBPE No. 1298



Map Source: Compiled by Photogrammetric Methods from Photography Acquired on March 1, 1998.

LEGEND

- MONITORING WELL LOCATION
- SOIL BORING LOCATION
- HAND AUGER LOCATION
- PIPELINE

N

0 40
SCALE IN FEET

QUADRANGLE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining	DATE:01/31/13	FILE:WestRef-A167

FIGURE 3
SWMU No. 14 SAMPLE LOCATIONS
GALLUP REFINERY

RPS
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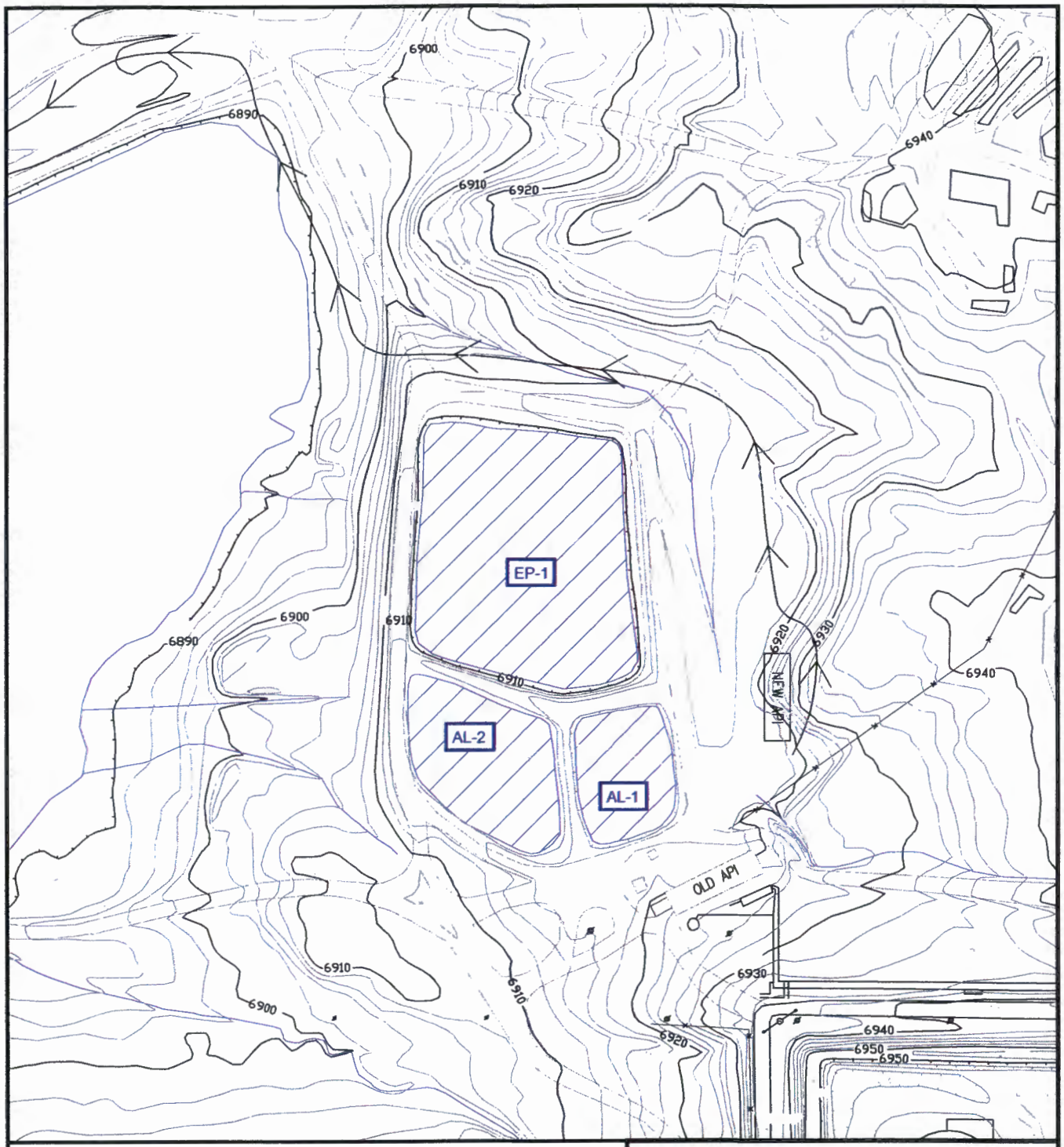
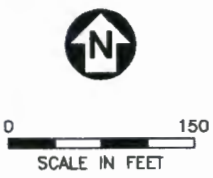
TBPE No. 1298



Map Source: Compiled by Photogrammetric Methods from Photography Acquired on March 1, 1998.



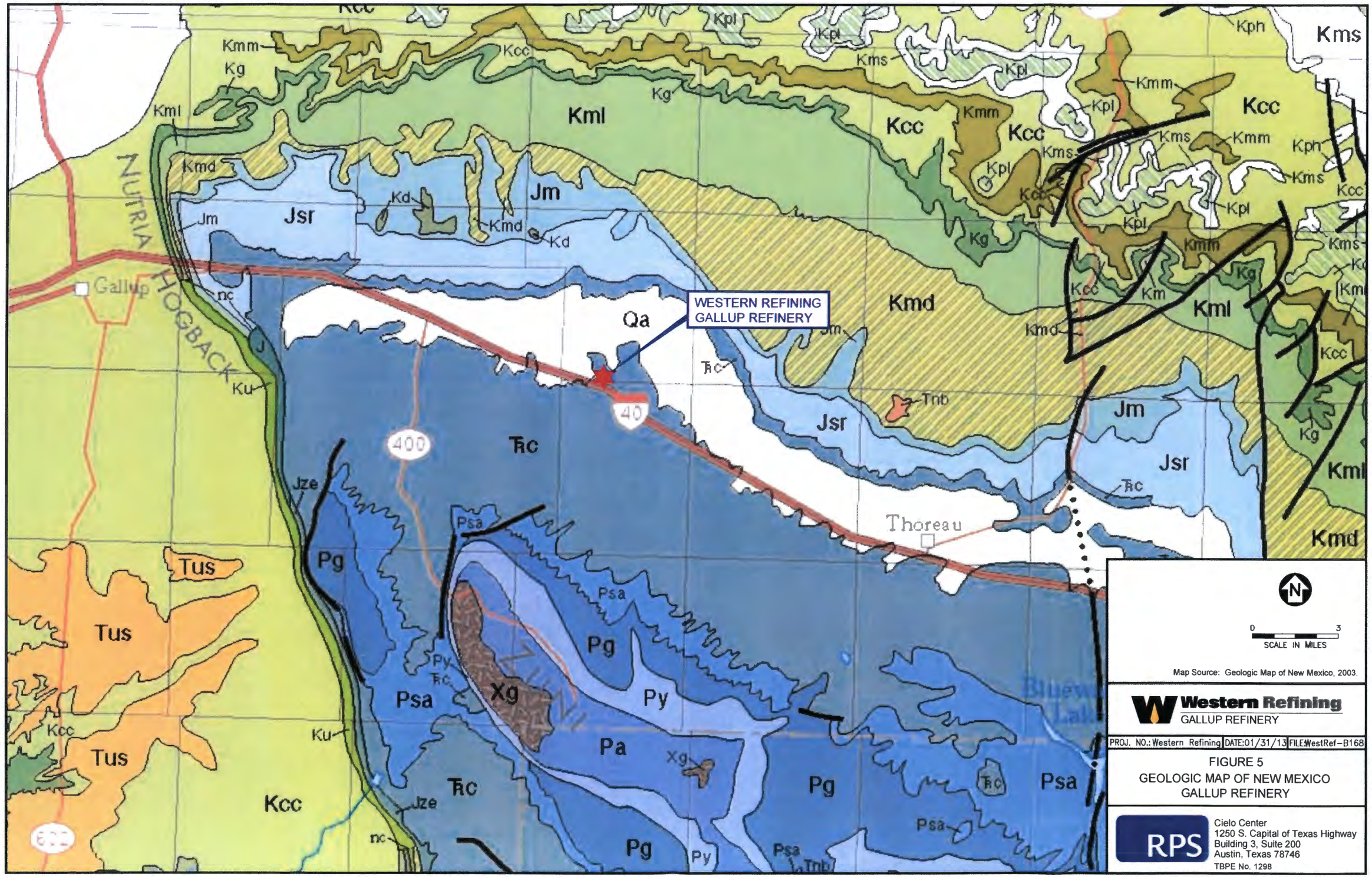
QUADRANGLE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining	DATE:01/31/13	FILE:WestRef-A168

FIGURE 4
TOPOGRAPHIC MAP
GALLUP REFINERY

RPS
Cielo Center
1250 S. Capital of Texas Highway
Building 3, Suite 200
Austin, Texas 78746
TBPE No. 1298


WESTERN REFINING
GALLUP REFINERY
NUTRIA HOGBACK
Gallup
Thoreau
Kml
Kmd
Kcc
Kms
Kpl
Kph
Kmm
Kg
Jm
Jsr
Kd
Qa
Ku
Jze
Pg
Psa
Py
Pa
Xg
Tus
Trc
Tnb
40
400
602
0
3
SCALE IN MILES
Map Source: Geologic Map of New Mexico, 2003.
Western Refining
GALLUP REFINERY
PROJ. NO.: Western Refining
DATE: 01/31/13
FILE: WestRef-B168
FIGURE 5
GEOLOGIC MAP OF NEW MEXICO
GALLUP REFINERY
RPS
Cielo Center
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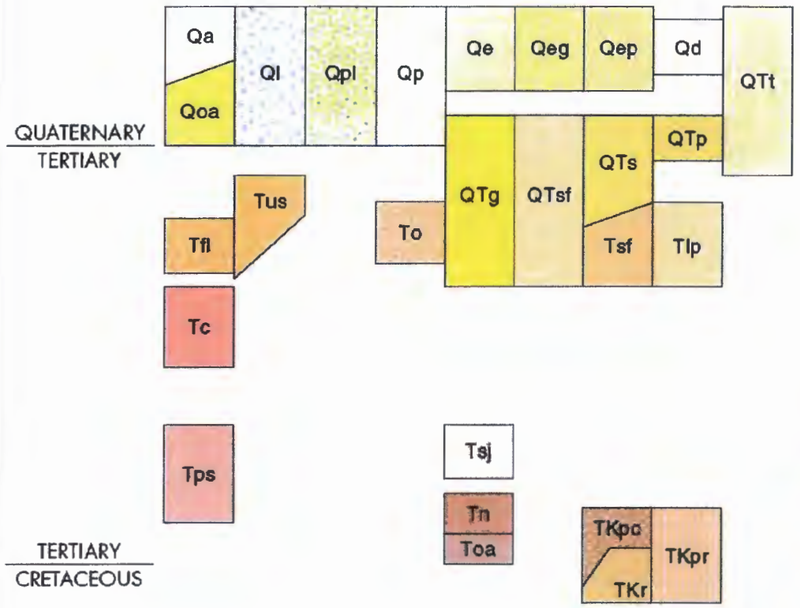
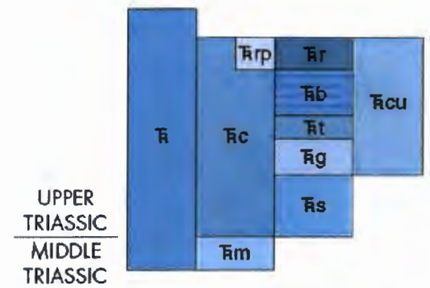
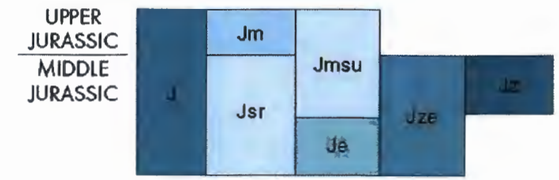
Building 3, Suite 200
Austin, Texas 78746
TBPE No. 1298

Sedimentary







DESCRIPTION OF MAP UNITS

QUATERNARY

Qa — **Alluvium (Holocene to upper Pleistocene)**

Ql — **Landslide deposits and colluvium (Holocene to Pleistocene)—Landslide deposits on western flanks of Socorro Mountains not shown for clarity**

Qpl — **Lacustrine and playa deposits (Holocene)—Includes associated alluvial and eolian deposits of major lake basins**

Qp — **Piedmont alluvial deposits (Holocene to lower Pleistocene)—Includes deposits of higher gradient tributaries bordering major stream valleys, alluvial veneers of the piedmont slope, and alluvial fans. May locally include uppermost Pliocene deposits**

TRIASSIC

Chinle Formation of previous workers (e.g., Stewart et al., 1972) is used here as Chinle Group, following Lucas (1993)

Ꞧ — **Triassic rocks, undivided**—Continental red beds

Ꞧrp — **Rock Point Formation of Chinle Group** (Upper Triassic)—May locally include Wingate Sandstone (Triassic)

Ꞧc — **Chinle Group** (Upper Triassic)—Map unit includes Moenkopi Formation (Middle Triassic) at base in many areas; in eastern part of state the following five formations are mapped:

Ꞧr — **Redonda Formation** (Upper Triassic)

Ꞧb — **Bull Canyon Formation** (Norian)

Ꞧt — **Trujillo Formation** (Norian)

Ꞧg — **Garita Creek Formation** (Carnian)

Ꞧs — **Santa Rosa Formation** (Carnian)—Includes Moenkopi Formation (Middle Triassic) at base in most areas

Ꞧcu — **Upper Chinle Group, Garita Creek through Redonda Formations, undivided**

Ꞧm — **Moenkopi Formation** (Middle Triassic)

JURASSIC

To compare this map nomenclature to the USGS nomenclature, see the diagram included on this sheet (at right)

J — **Upper and Middle Jurassic rocks, undivided.** In southwest includes the basalt-bearing Broken Jug Formation

Jm — **Morrison Formation**—Upper Jurassic nonmarine rocks

Jmsu — **Morrison Formation and upper San Rafael Group** (lowermost Cretaceous? - upper Jurassic)

Jz — **Zuni Sandstone** (Callovian)—Consists of undivided equivalents of the Summerville Formation and Bluff Sandstone; restricted to Zuni Basin area

Jze — **Zuni and Entrada Sandstones, undivided**

Je — **Entrada Sandstone** (Middle Jurassic)

Jsr — **San Rafael Group** (Middle Jurassic)—Consists of Entrada Sandstone, Todilto and Summerville Formations, Bluff Sandstone, and locally Zuni Sandstone (or only Acoma Tongue of Zuni)

Map Source: Geologic Map of New Mexico, 2003.

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 01/31/13	FILE: WestRef-B168

FIGURE 5
GEOLOGIC MAP OF NEW MEXICO
GALLUP REFINERY

RPS
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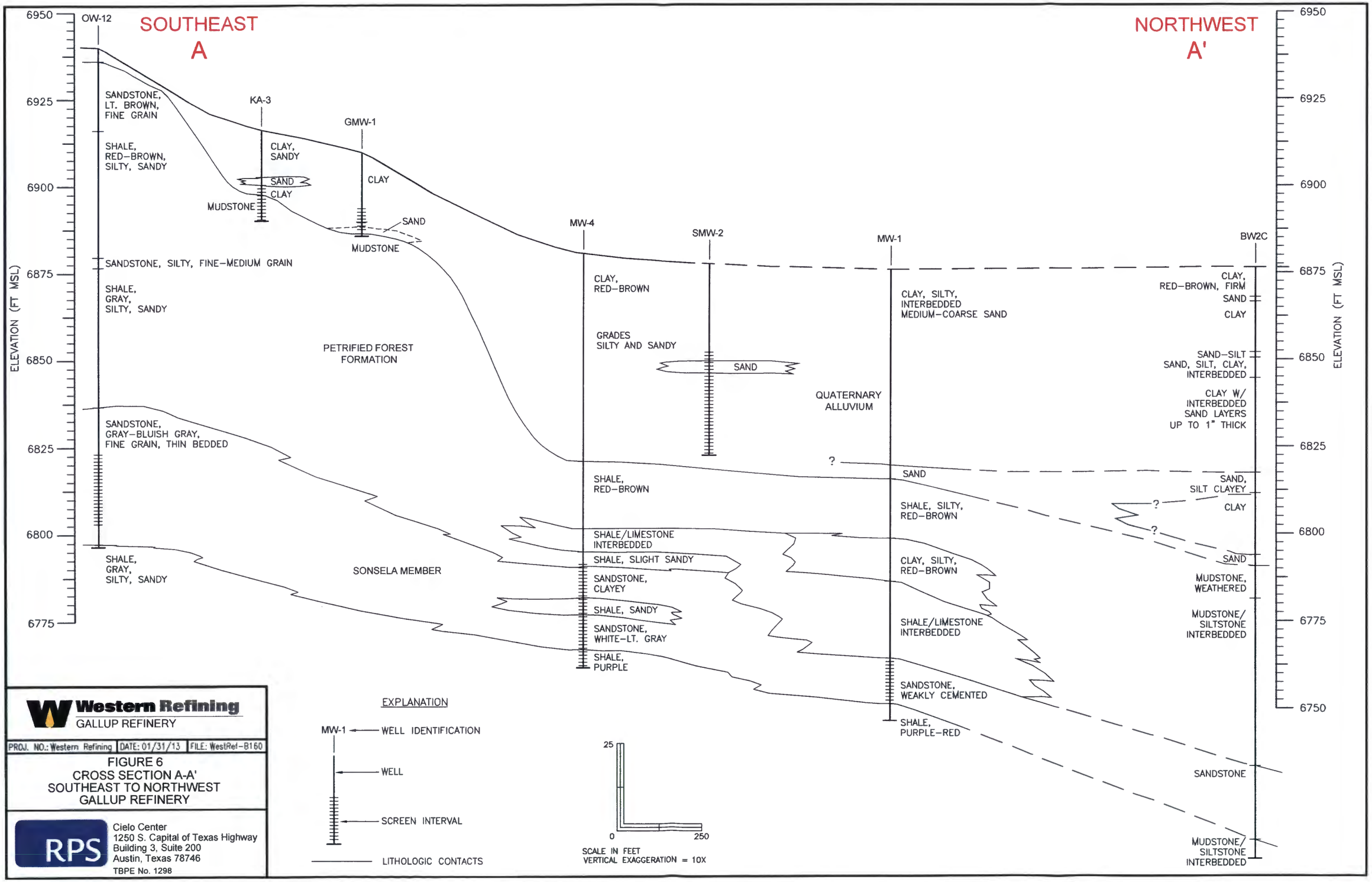
TBPE No. 1298



Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 01/31/13	FILE: WestRef-B160

FIGURE 6
CROSS SECTION A-A'
SOUTHEAST TO NORTHWEST
GALLUP REFINERY

RPS
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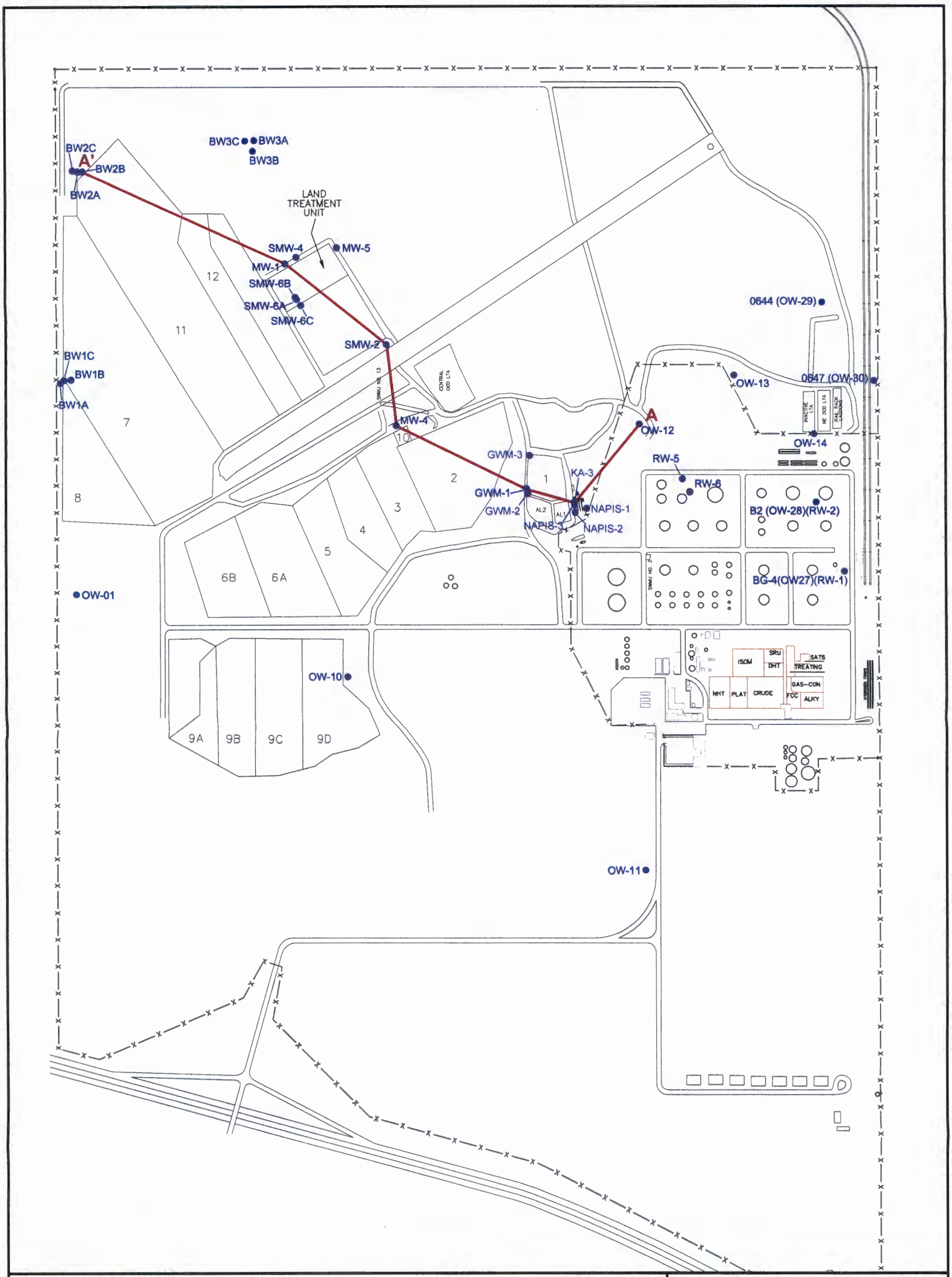
1250 S. Capital of Texas Highway
Building 3, Suite 200
Austin, Texas 78746
TBPE No. 1298



Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining	DATE:01/31/13	FILE:WestRef-B166

FIGURE 6A
CROSS SECTION LOCATION MAP
GALLUP REFINERY

RPS
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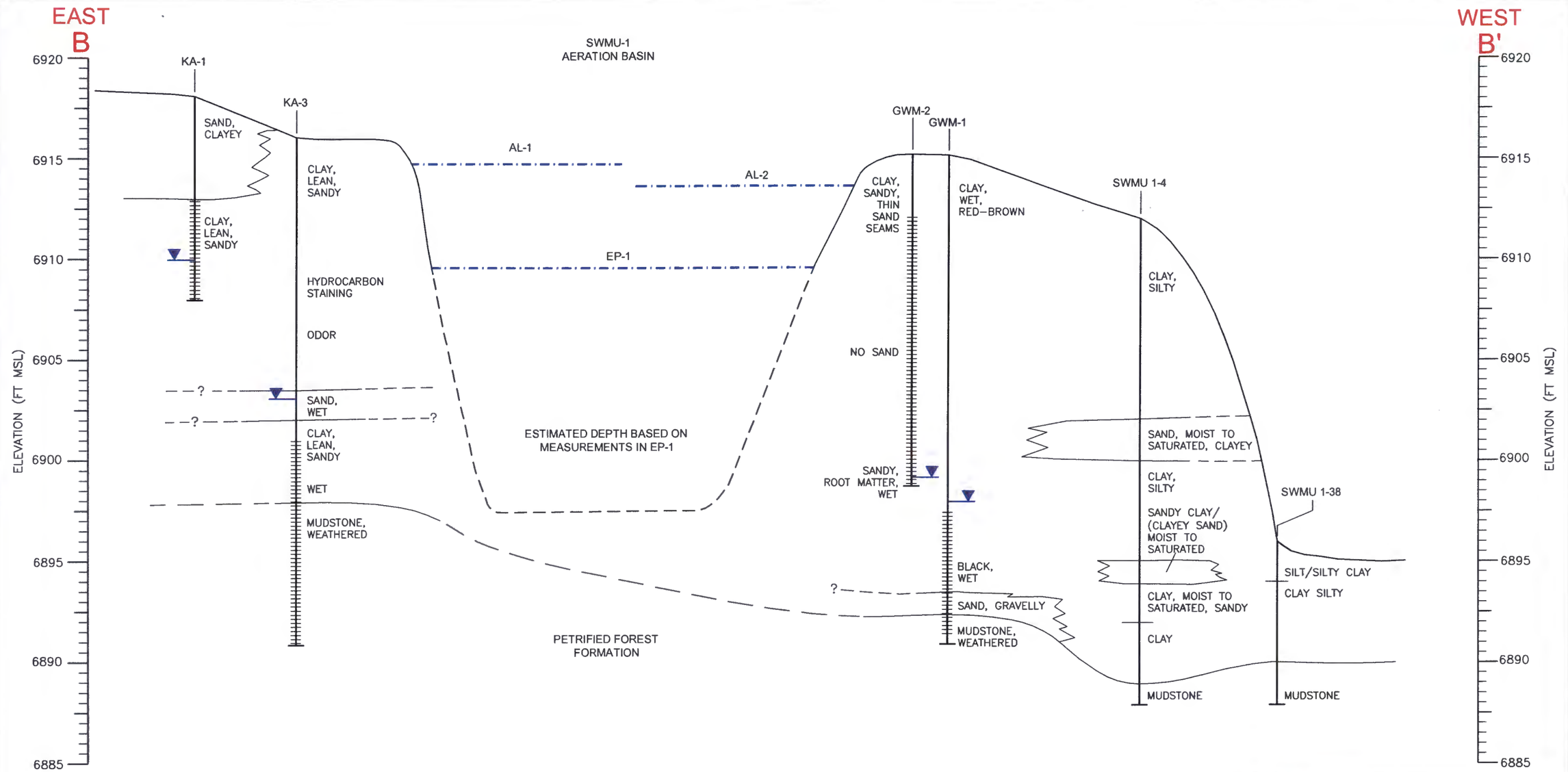
Building 3, Suite 200
Austin, Texas 78746
TBPE No. 1298



EXPLANATION

GWM-1 ← WELL IDENTIFICATION

← WELL

← WELL SCREEN INTERVAL

STATIC WATER LEVEL MEASURED 11/28/2012, EXCEPT KA-1, WHICH WAS MEASURED 6/12/2007

LITHOLOGIC CONTACTS (DASHED WHERE INFERRED)

5 0 50

SCALE IN FEET
VERTICAL EXAGGERATION = 10X

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 01/31/13	FILE: WestRef-B161

FIGURE 7
CROSS SECTION B-B'
EAST TO WEST
GALLUP REFINERY

RPS
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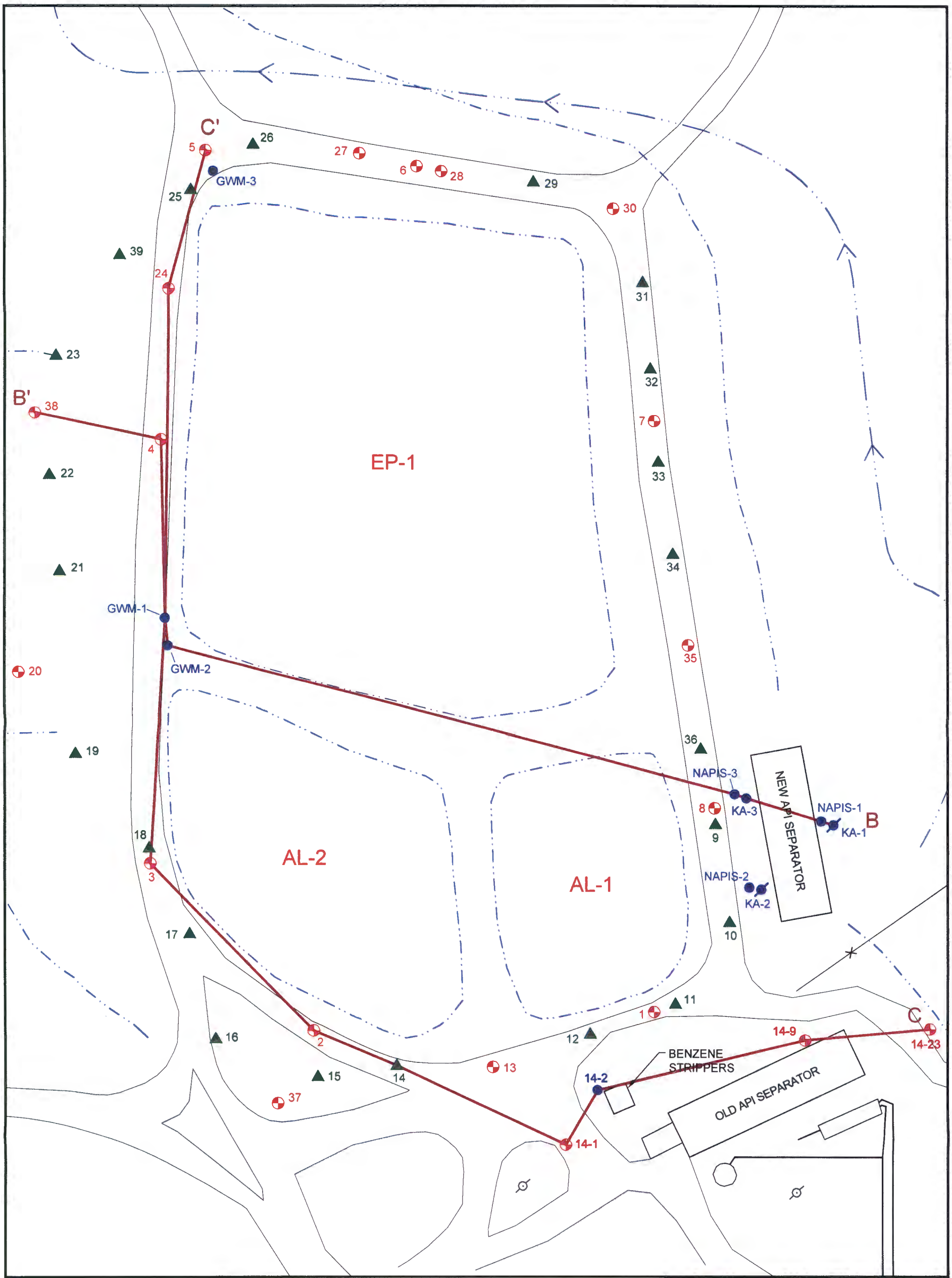
Austin, Texas 78746
TBPE No. 1298



LEGEND

- PERIMETER SOIL BORING LOCATION
- HAND AUGER SAMPLE LOCATION
- GWM-1 GROUNDWATER WELL LOCATION
- KA-1 PLUGGED & ABANDONED MONITOR WELL LOCATION
- B —— B' LINE OF CROSS SECTION

N

0 50
SCALE IN FEET

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining | DATE:01/31/13 | FILE:WestRef-B167

FIGURE 7A
CROSS SECTION LOCATION MAP
GALLUP REFINERY

RPS
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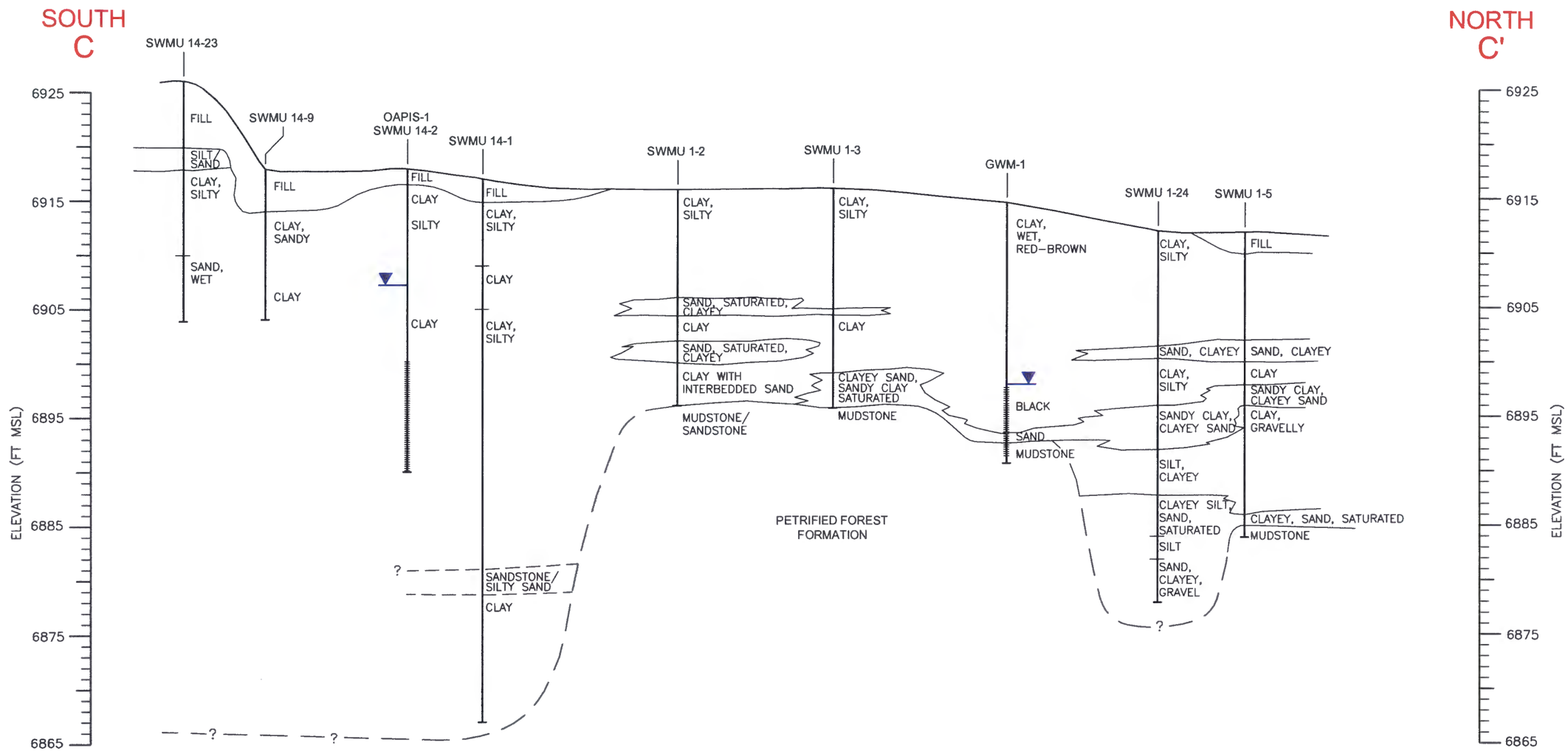

EXPLANATION

GWM-1 ← WELL IDENTIFICATION

← WELL

← WELL SCREEN INTERVAL

— — — LITHOLOGIC CONTACTS (DASHED WHERE INFERRED)

▼ STATIC WATER LEVEL MEASURED FALL 2012

10

0 100

SCALE IN FEET
VERTICAL EXAGGERATION = 10X

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 01/31/13	FILE: WestRef-B162

FIGURE 8
CROSS SECTION C-C'
SOUTH TO NORTH
GALLUP REFINERY

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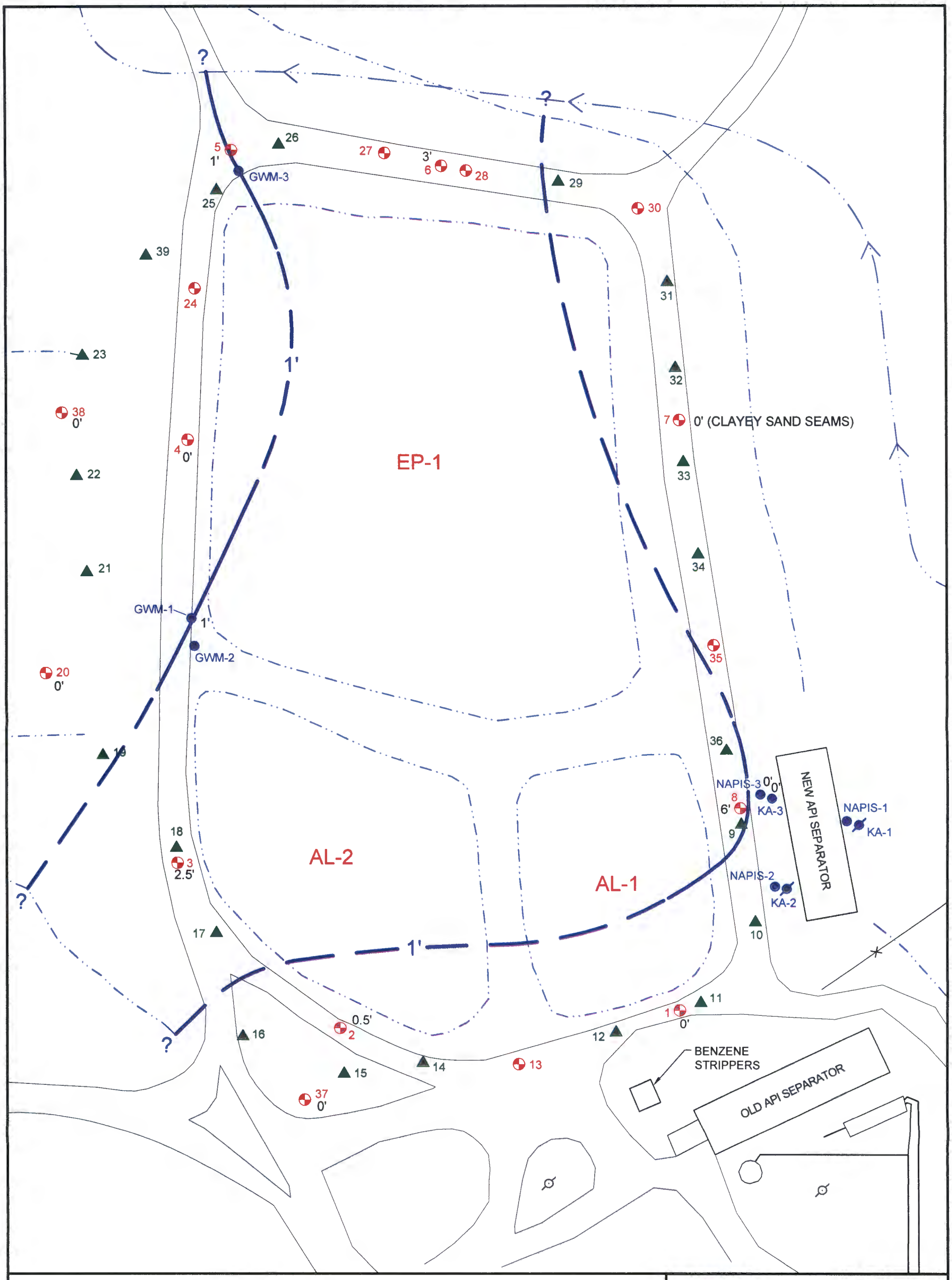

LEGEND

0.5' THICKNESS OF PERMEABLE LAYER (SAND AND CLAYEY SAND / SANDY CLAY) THAT DIRECTLY OVER LIES PETRIFIED FOREST FORMATION BEDROCK (FT)

PERIMETER SOIL BORING LOCATION

HAND AUGER SAMPLE LOCATION

GWM-1 GROUNDWATER WELL LOCATION

KA-1 PLUGGED & ABANDONED MONITOR WELL LOCATION

N

0 50
SCALE IN FEET

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining | DATE:01/31/13 | FILE:WestRef-B163

FIGURE 9
SAND ISOPACH MAP
SWMU No. 1
GALLUP REFINERY

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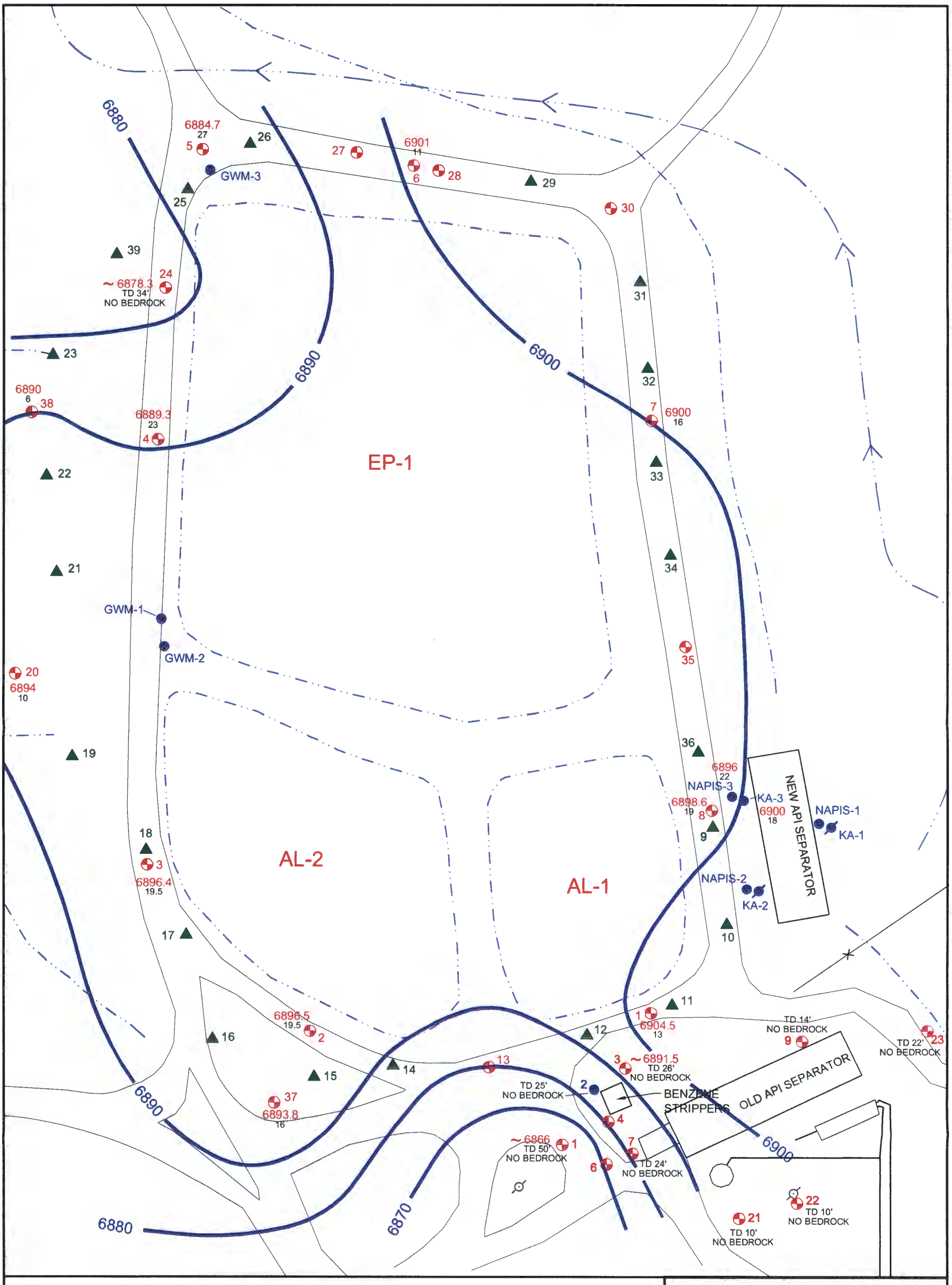

LEGEND

6896.4	ELEVATION ON TOP OF PETRIFIED FOREST FORMATION (MSL)
19.5	DEPTH TO TOP OF PETRIFIED FOREST FORMATION
~	ELEVATION ESTIMATED AS PETRIFIED FOREST FORMATION NOT REACHED IN BORING
TD	TOTAL DEPTH OF BORING
	PERIMETER SOIL BORING LOCATION
	HAND AUGER SAMPLE LOCATION
GWM-1	GROUNDWATER WELL LOCATION
KA-1	PLUGGED & ABANDONED MONITOR WELL LOCATION

N

0 50
SCALE IN FEET

Western Refining
GALLUP REFINERY

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FIGURE 10
PALEOTOPOGRAPHIC MAP
GALLUP REFINERY

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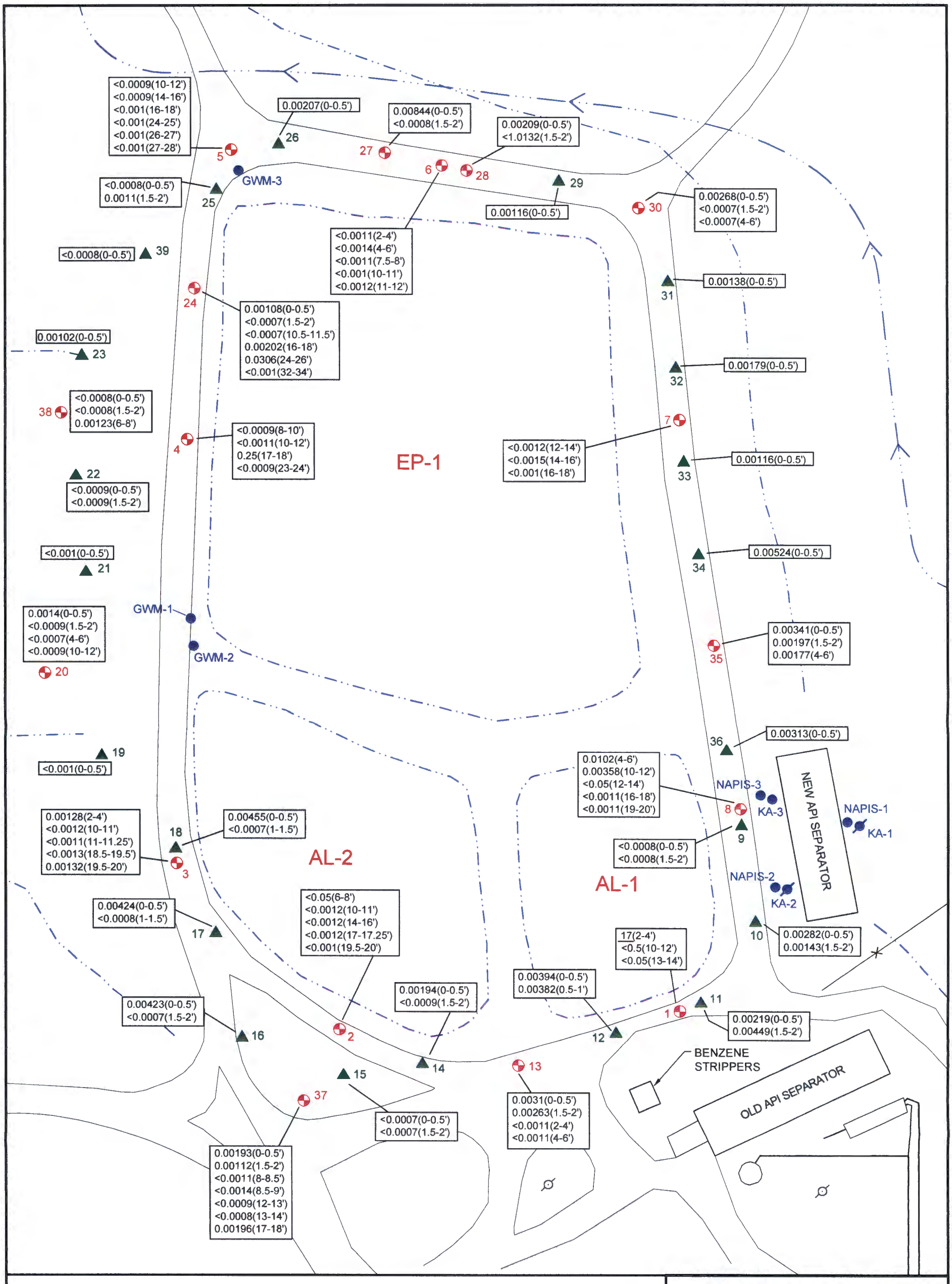

LEGEND

- PERIMETER SOIL BORING LOCATION
- HAND AUGER SAMPLE LOCATION
- GWM-1 GROUNDWATER WELL LOCATION
- KA-1 PLUGGED & ABANDONED MONITOR WELL LOCATION
- 0.0031(0-0.5') 1,2,4- TRIMETHYLBENZENE CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)
- 9.68 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining	DATE:01/24/13	FILE:WestRef-B155

FIGURE 12
1,2,4- TRIMETHYLBENZENE
SOIL CONCENTRATIONS - SWMU No. 1
GALLUP REFINERY

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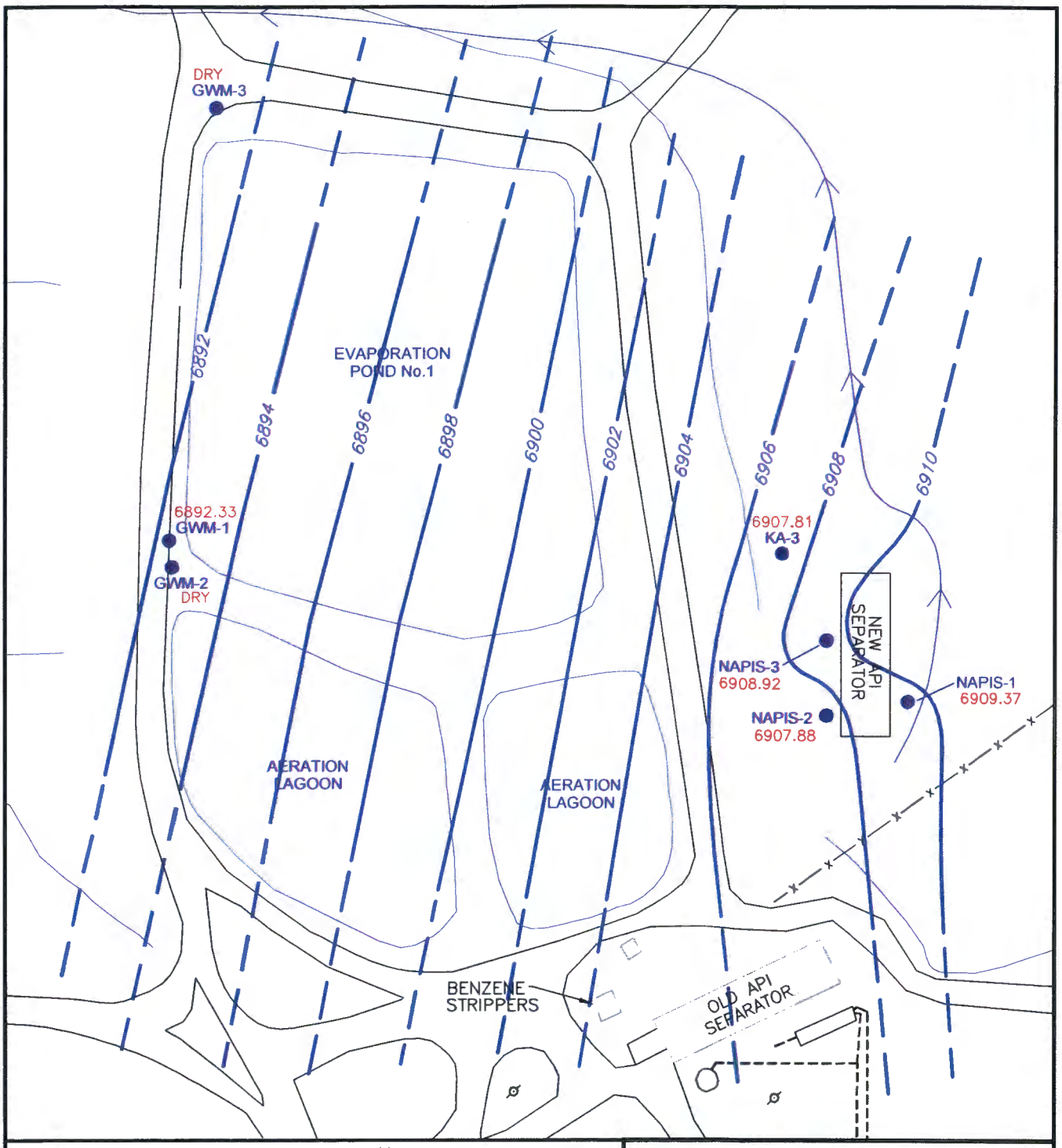

Map Source: Compiled by Photogrammetric Methods from Photography Acquired on March 1, 1998.

LEGEND

GWM-1 ● MONITORING WELL LOCATION

6894 POTENTIOMETRIC SURFACE CONTOUR (ABOVE MSL)

6907.81 POTENTIOMETRIC SURFACE (MEASURED AUGUST 2009, ABOVE MSL)

PIPELINE

N

0 80
SCALE IN FEET

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 09/23/10	FILE: WestRef-A40

FIGURE 11
POTENTIOMETRIC SURFACE MAP
GALLUP REFINERY

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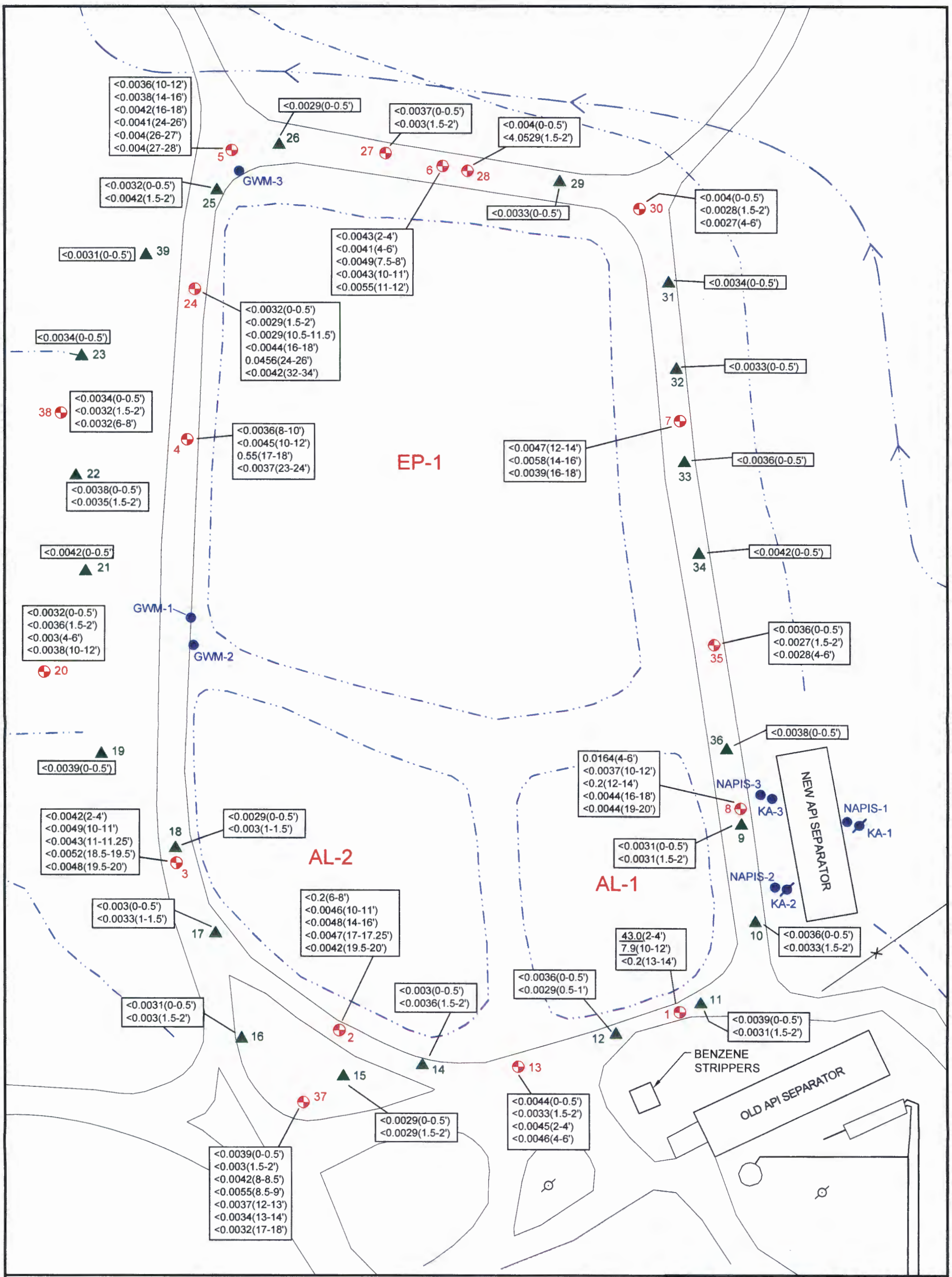

LEGEND

- PERIMETER SOIL BORING LOCATION
- HAND AUGER SAMPLE LOCATION
- GWM-1 GROUNDWATER WELL LOCATION
- KA-1 PLUGGED & ABANDONED MONITOR WELL LOCATION
- <0.0044(0-0.5') 1-METHYLNAPHTHALENE CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)
- 2.35 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining	DATE:01/24/13	FILE:WestRef-B157

FIGURE 13
1-METHYLNAPHTHALENE
SOIL CONCENTRATIONS - SWMU No. 1
GALLUP REFINERY

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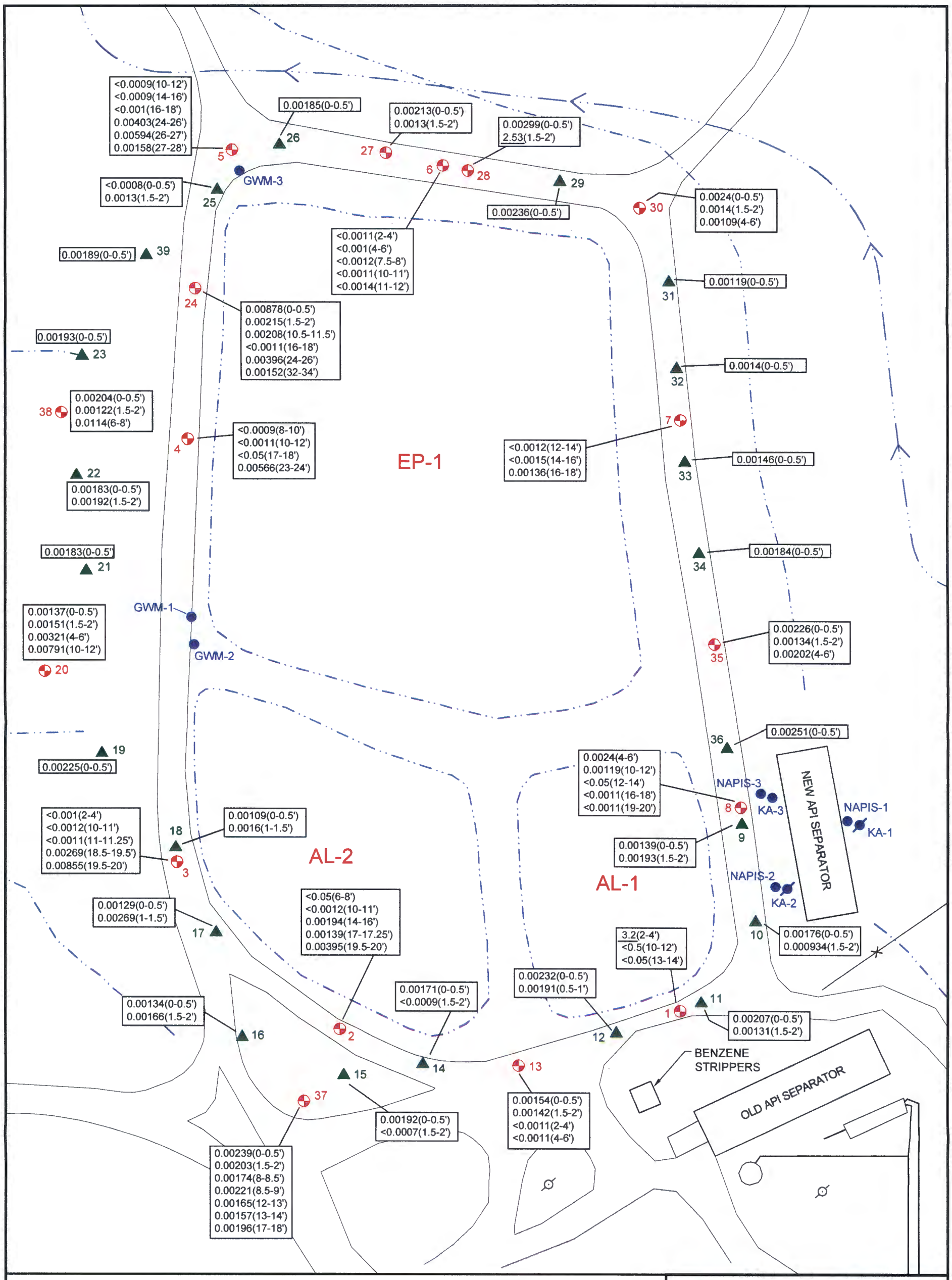

LEGEND

- PERIMETER SOIL BORING LOCATION
- HAND AUGER SAMPLE LOCATION
- GWM-1 GROUNDWATER WELL LOCATION
- KA-1 PLUGGED & ABANDONED MONITOR WELL LOCATION
- 0.00154(0-0.5') BENZENE CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)
- 0.796 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining	DATE:01/24/13	FILE:WestRef-B156

FIGURE 14
BENZENE
SOIL CONCENTRATIONS - SWMU No. 1
GALLUP REFINERY

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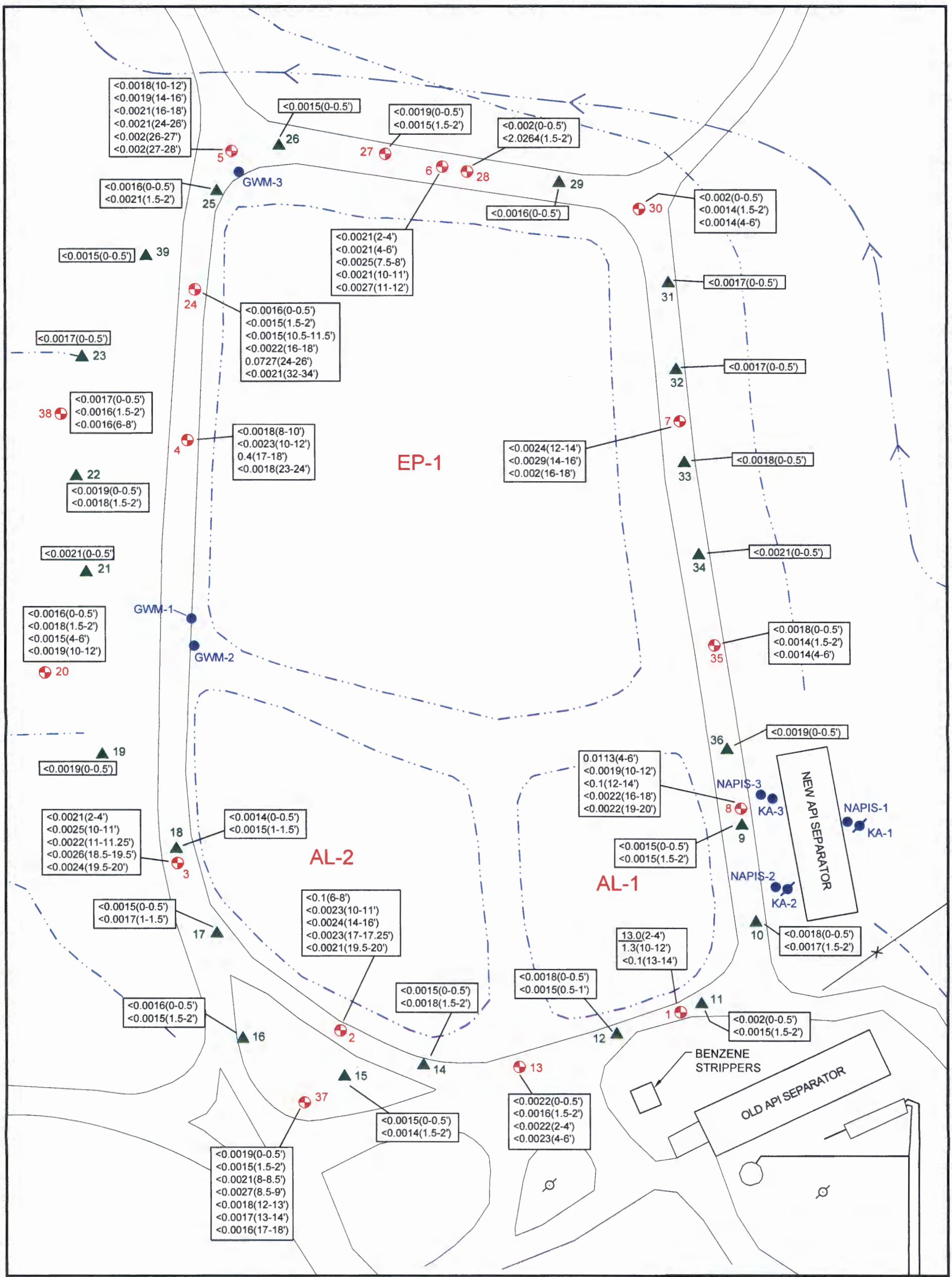

LEGEND

- PERIMETER SOIL BORING LOCATION
- HAND AUGER SAMPLE LOCATION
- GWM-1 GROUNDWATER WELL LOCATION
- KA-1 PLUGGED & ABANDONED MONITOR WELL LOCATION
- <0.0022(0-0.5') NAPHTHALENE CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)
- 1.64 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

N

0 50
SCALE IN FEET

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining	DATE:01/24/13	FILE:WestRef-B158

FIGURE 15
NAPHTHALENE
SOIL CONCENTRATIONS - SWMU No. 1
GALLUP REFINERY

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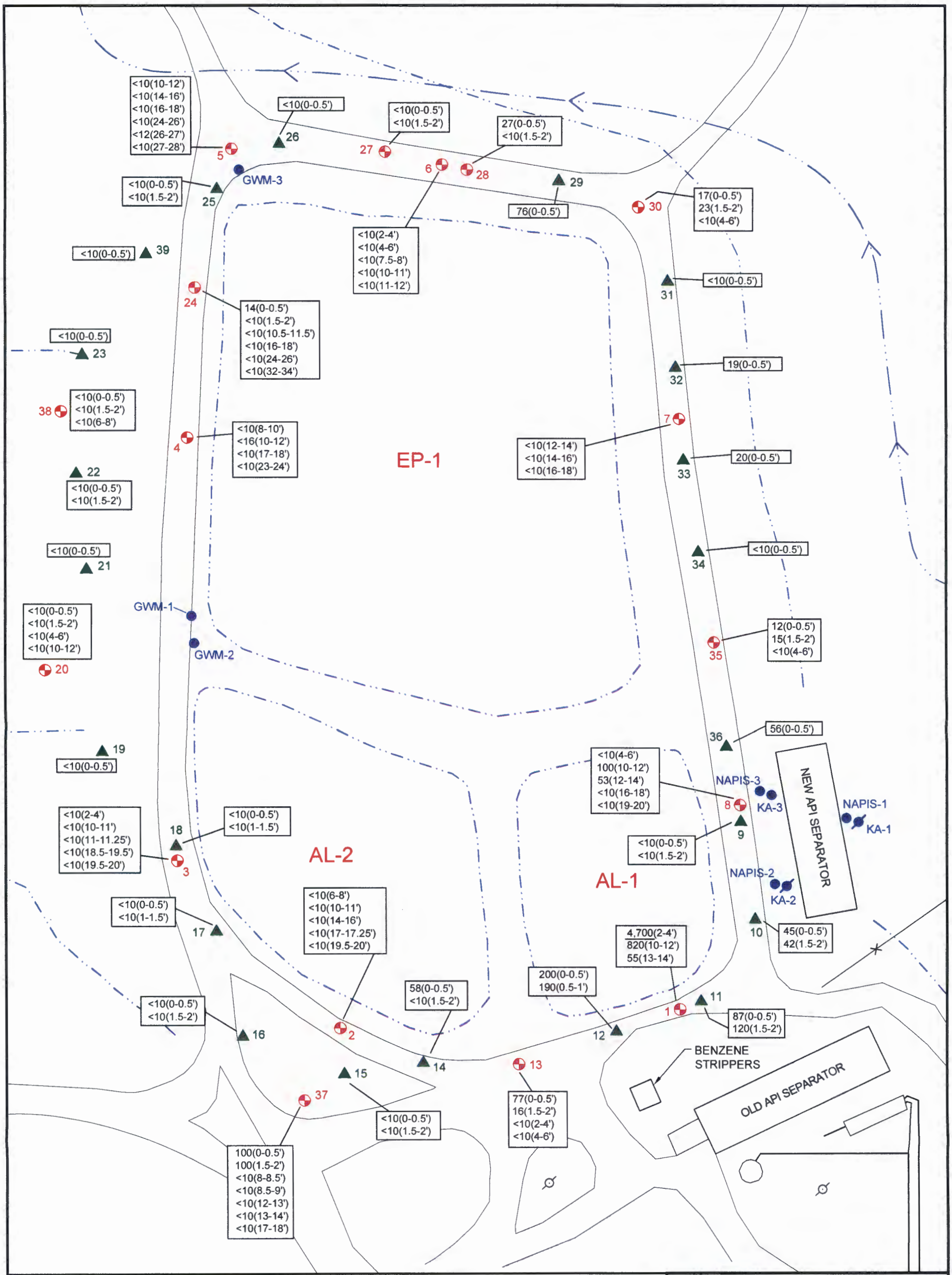

LEGEND

- PERIMETER SOIL BORING LOCATION
- HAND AUGER SAMPLE LOCATION
- GWM-1 GROUNDWATER WELL LOCATION
- KA-1 PLUGGED & ABANDONED MONITOR WELL LOCATION
- 77(0-0.5') DIESEL RANGE ORGANICS CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)
- 1,000 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining	DATE:01/24/13	FILE:WestRef-B159

FIGURE 16
DIESEL RANGE ORGANICS
SOIL CONCENTRATIONS - SWMU No. 1
GALLUP REFINERY

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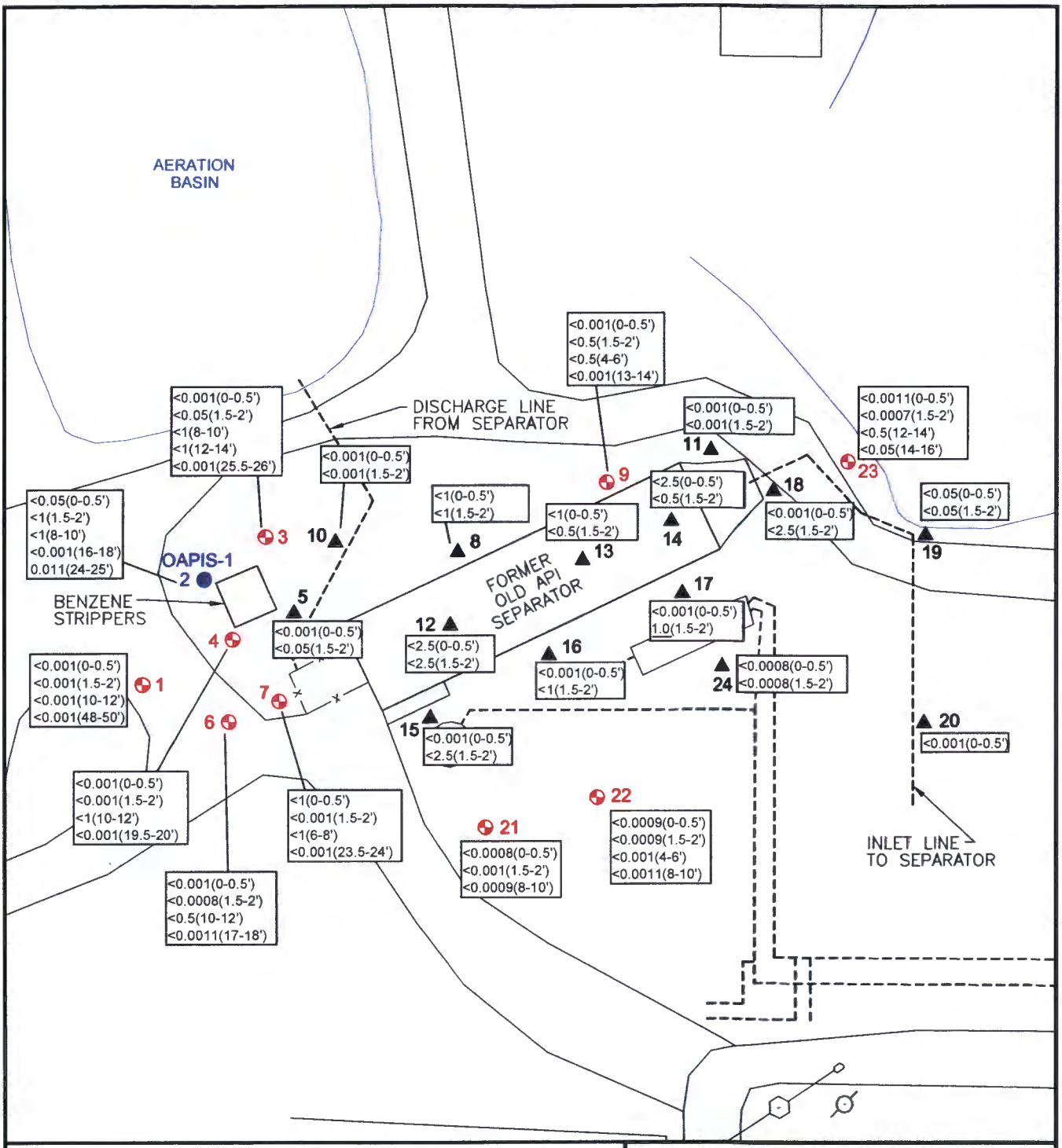

Map Source: Compiled by Photogrammetric Methods from Photography Acquired on March 1, 1998.

LEGEND

- MONITORING WELL LOCATION
- SOIL BORING LOCATION
- HAND AUGER LOCATION
- PIPELINE
- <0.001(0-0.5') 1,1,2-TRICHLOROETHANE CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)
- 0.0514 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

N

0 40
SCALE IN FEET

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 01/31/13	FILE: WestRef-A164

FIGURE 17
1,1,2-TRICHLOROETHANE
SOIL CONCENTRATIONS - SWMU No. 14
GALLUP REFINERY

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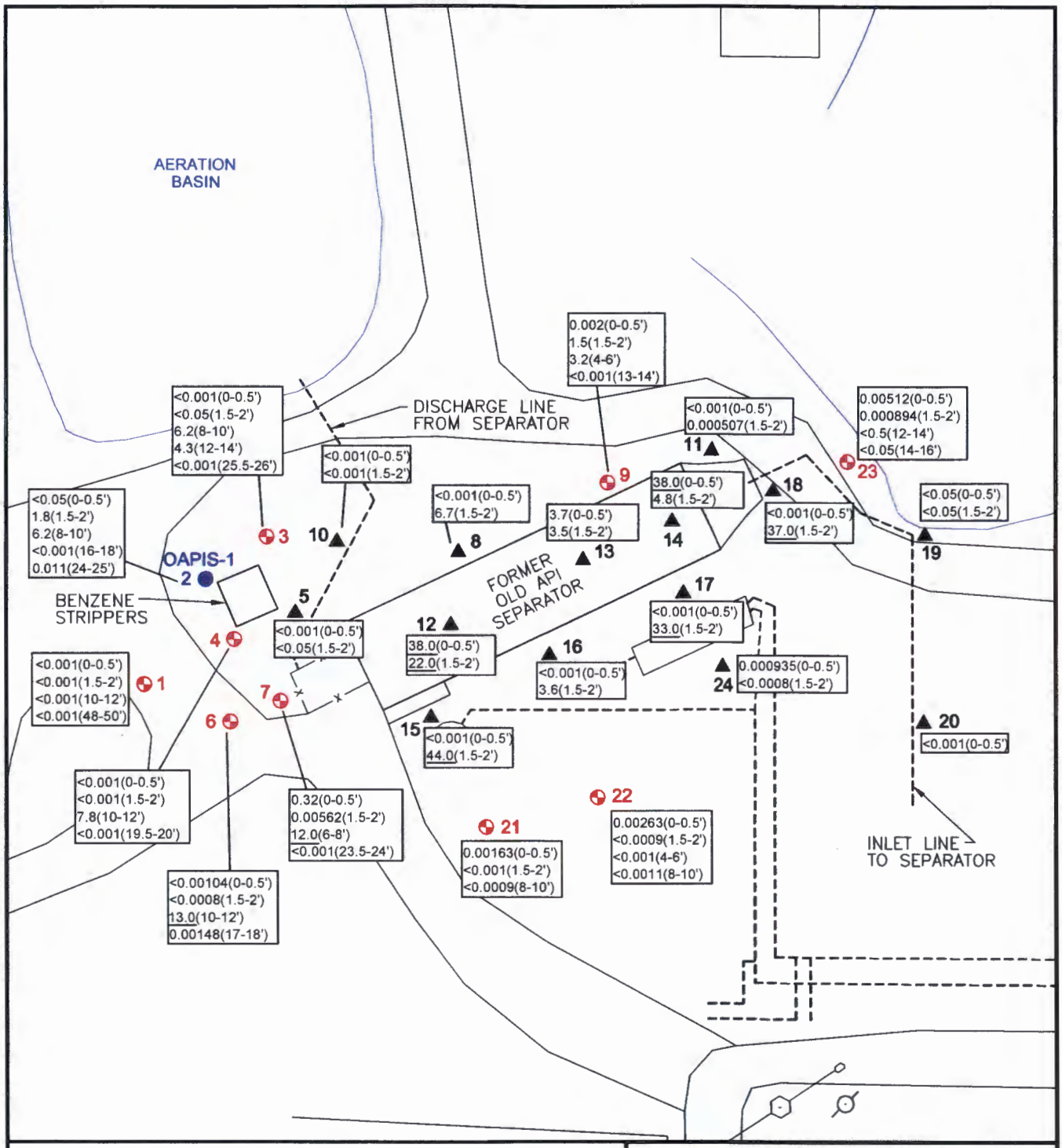

Map Source: Compiled by Photogrammetric Methods from Photography Acquired on March 1, 1998.

LEGEND

- MONITORING WELL LOCATION
- SOIL BORING LOCATION
- HAND AUGER LOCATION
- PIPELINE
- 0.00163(0-0.5') 1,2,4-TRIMETHYLBENZENE CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)
- 9.68 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

N

0 40
SCALE IN FEET

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 01/29/13	FILE: WestRef-A154

FIGURE 18
1,2,4-TRIMETHYLBENZENE
SOIL CONCENTRATIONS - SWMU No. 14
GALLUP REFINERY

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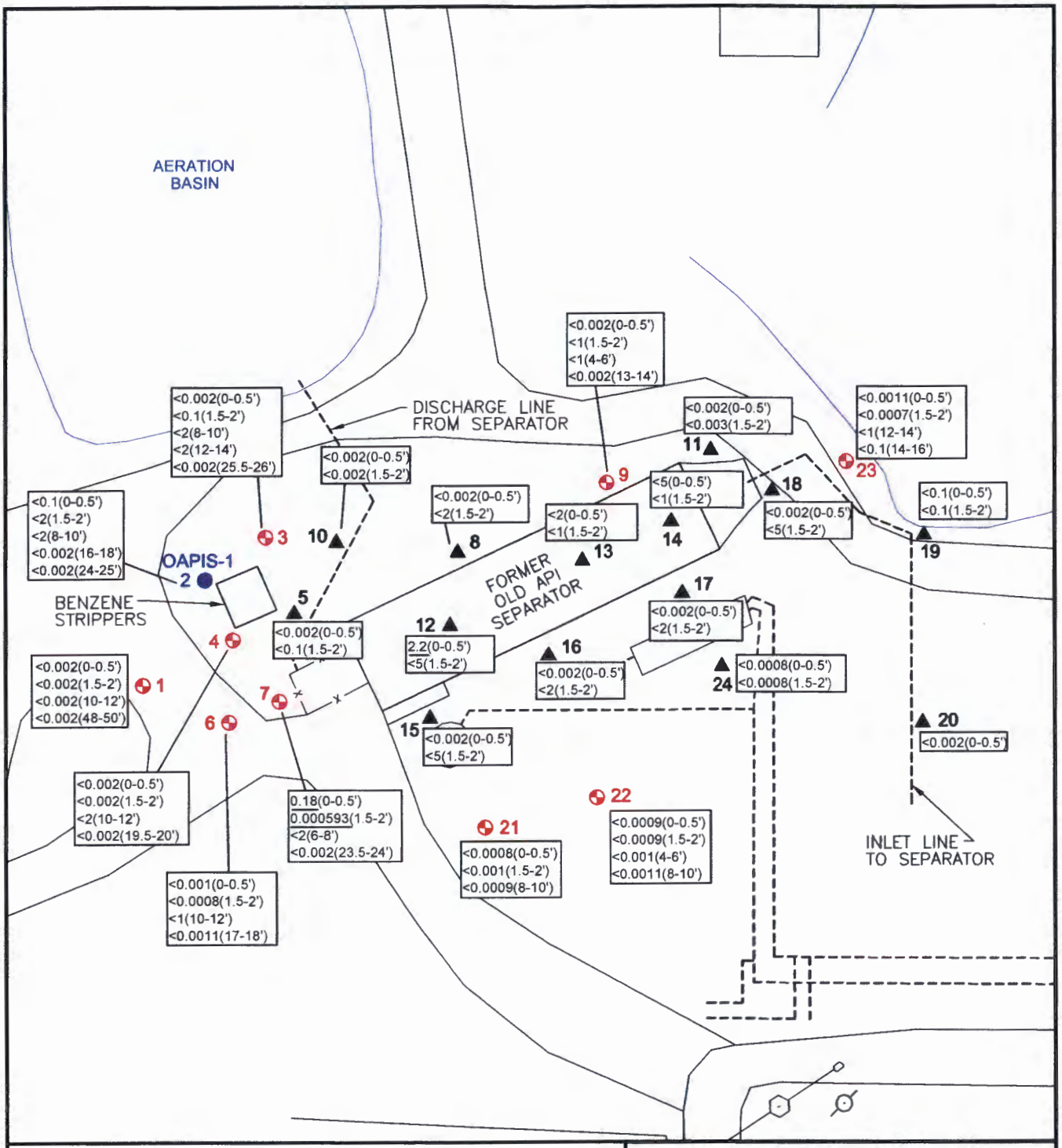

Map Source: Compiled by Photogrammetric Methods from Photography Acquired on March 1, 1998.

LEGEND

- MONITORING WELL LOCATION
- SOIL BORING LOCATION
- HAND AUGER LOCATION
- PIPELINE
- <0.001(0-0.5') 1,2-DIBROMO-3-CHLOROPROPANE CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)
- 0.000507 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

0 40
SCALE IN FEET

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining | DATE:01/31/13 | FILE:WestRef-A165

FIGURE 19
1,2-DIBROMO-3-CHLOROPROPANE
SOIL CONCENTRATIONS - SWMU No. 14
GALLUP REFINERY

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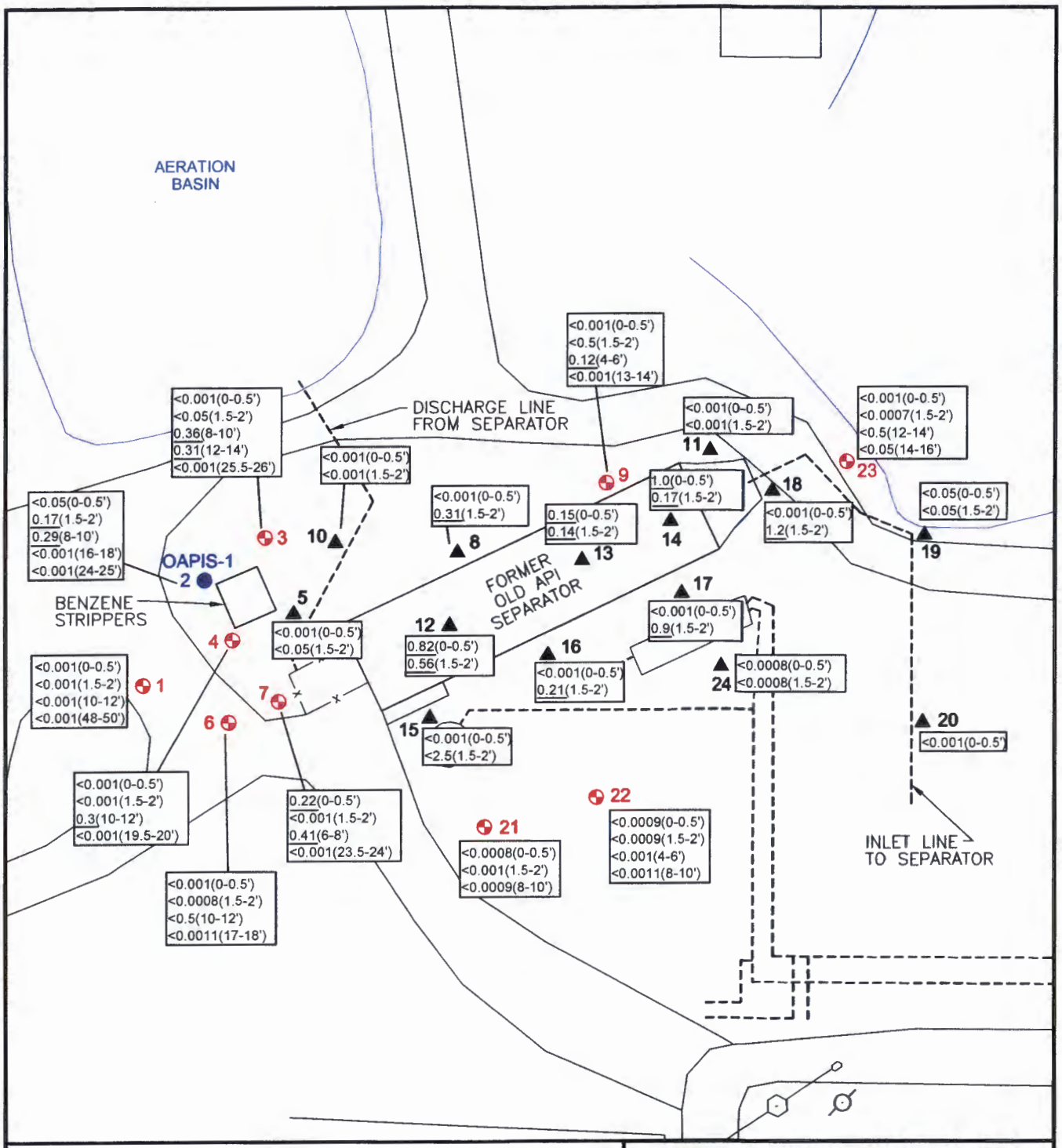

Map Source: Compiled by Photogrammetric Methods from Photography Acquired on March 1, 1998.

N

0 40
SCALE IN FEET

LEGEND

- MONITORING WELL LOCATION
- SOIL BORING LOCATION
- HAND AUGER LOCATION
- PIPELINE
- <0.0008(0-0.5') 1,2-DIBROMOETHANE CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)
- 0.0071 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining	DATE:01/29/13	FILE:WestRef-A155

FIGURE 20
1,2-DIBROMOETHANE
SOIL CONCENTRATIONS - SWMU No. 14
GALLUP REFINERY

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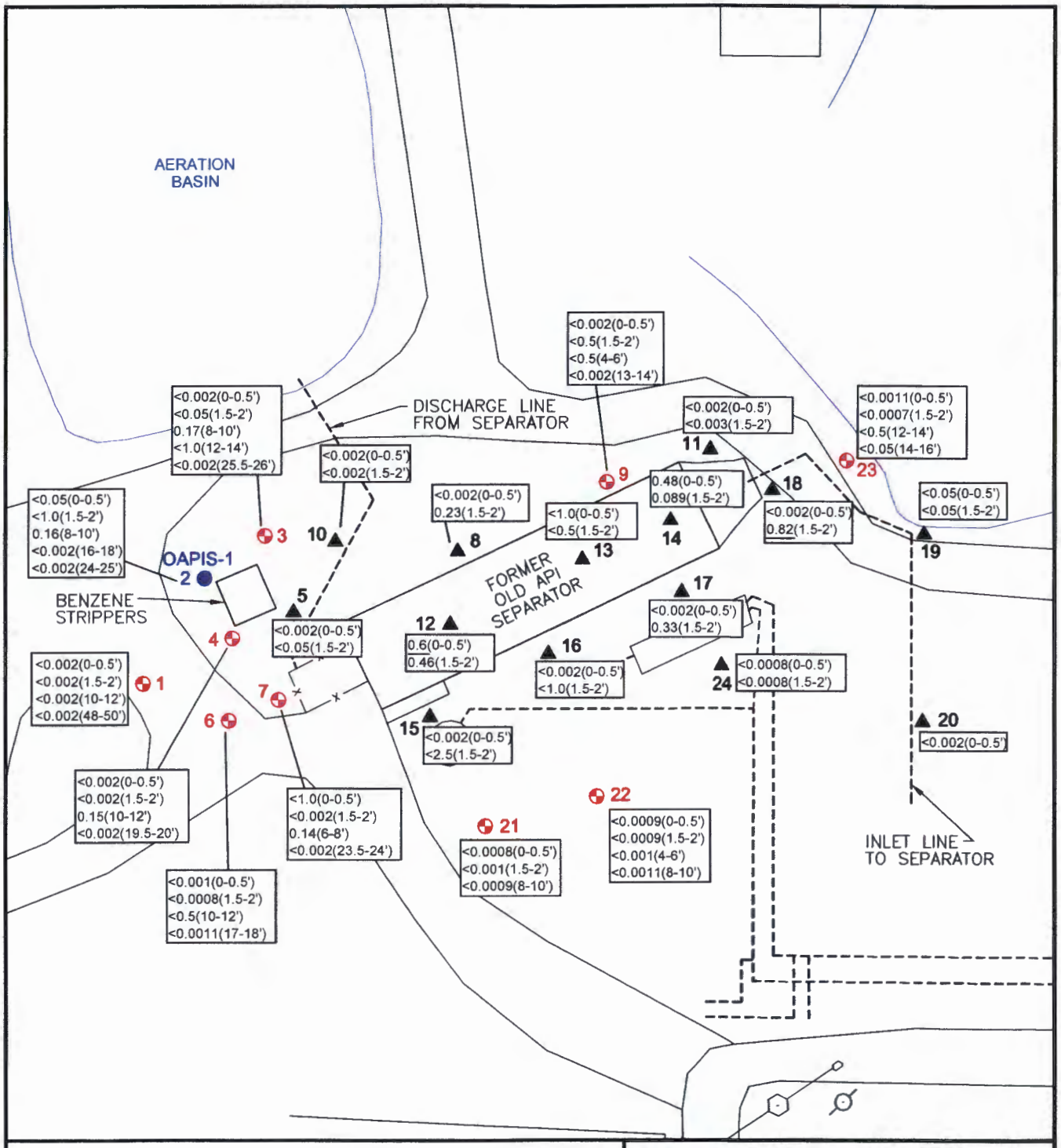

Map Source: Compiled by Photogrammetric Methods from Photography Acquired on March 1, 1998.

LEGEND

- MONITORING WELL LOCATION
- SOIL BORING LOCATION
- HAND AUGER LOCATION
- PIPELINE
- <0.0008(0-0.5') 1,2-DICHLOROPROPANE CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)
- 0.494 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

N

0 40
SCALE IN FEET

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 01/29/13	FILE: WestRef-A156

FIGURE 21
1,2-DICHLOROPROPANE
SOIL CONCENTRATIONS - SWMU No. 14
GALLUP REFINERY

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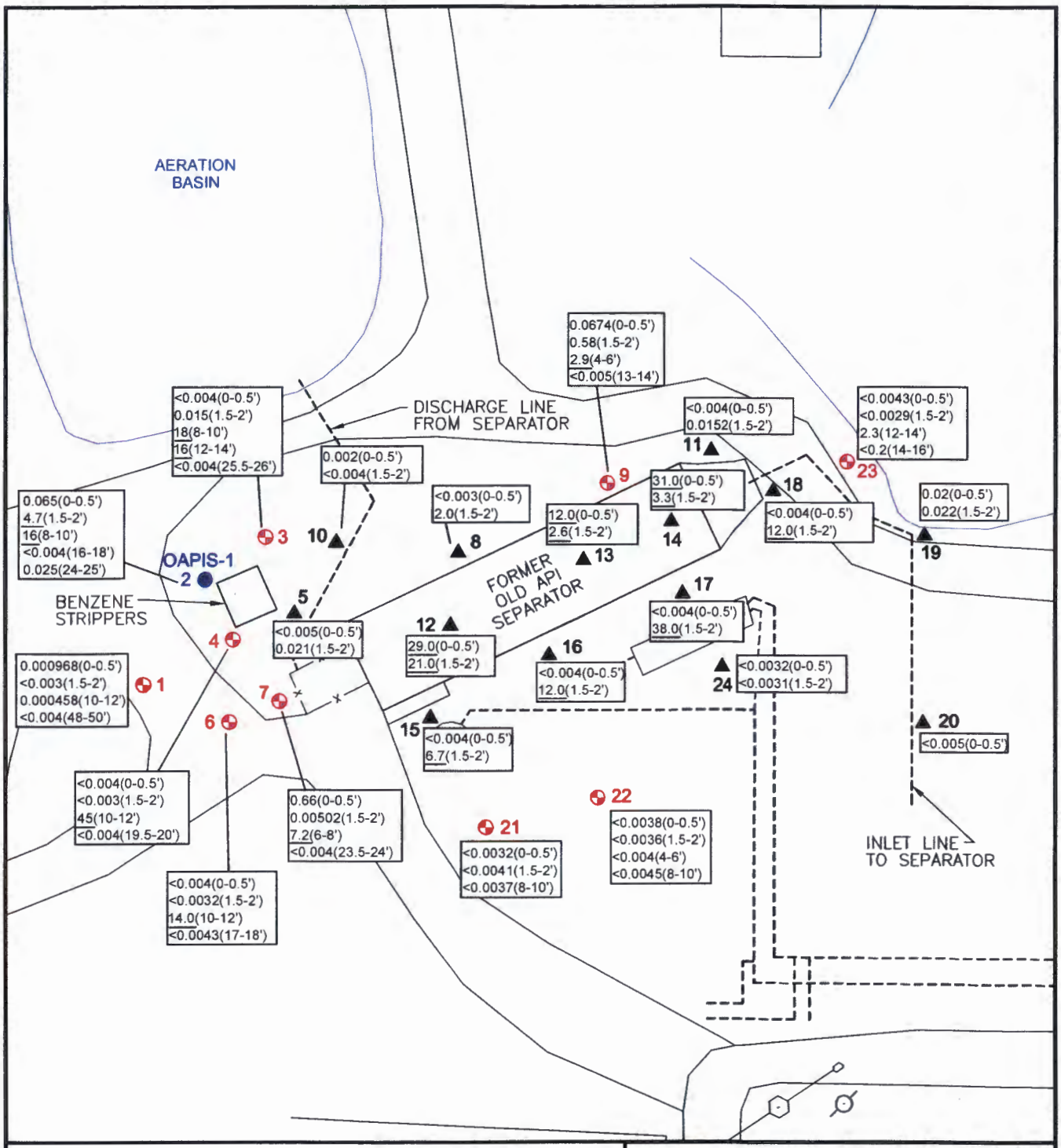

Map Source: Compiled by Photogrammetric Methods from Photography Acquired on March 1, 1998.

LEGEND

- MONITORING WELL LOCATION
- SOIL BORING LOCATION
- HAND AUGER LOCATION
- PIPELINE
- <0.0038(0-0.5') 1-METHYLNAPHTHALENE CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)
- 2.35 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

N

0 40
SCALE IN FEET

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 01/29/13	FILE: WestRef-A160

FIGURE 22
1-METHYLNAPHTHALENE
SOIL CONCENTRATIONS - SWMU No. 14
GALLUP REFINERY

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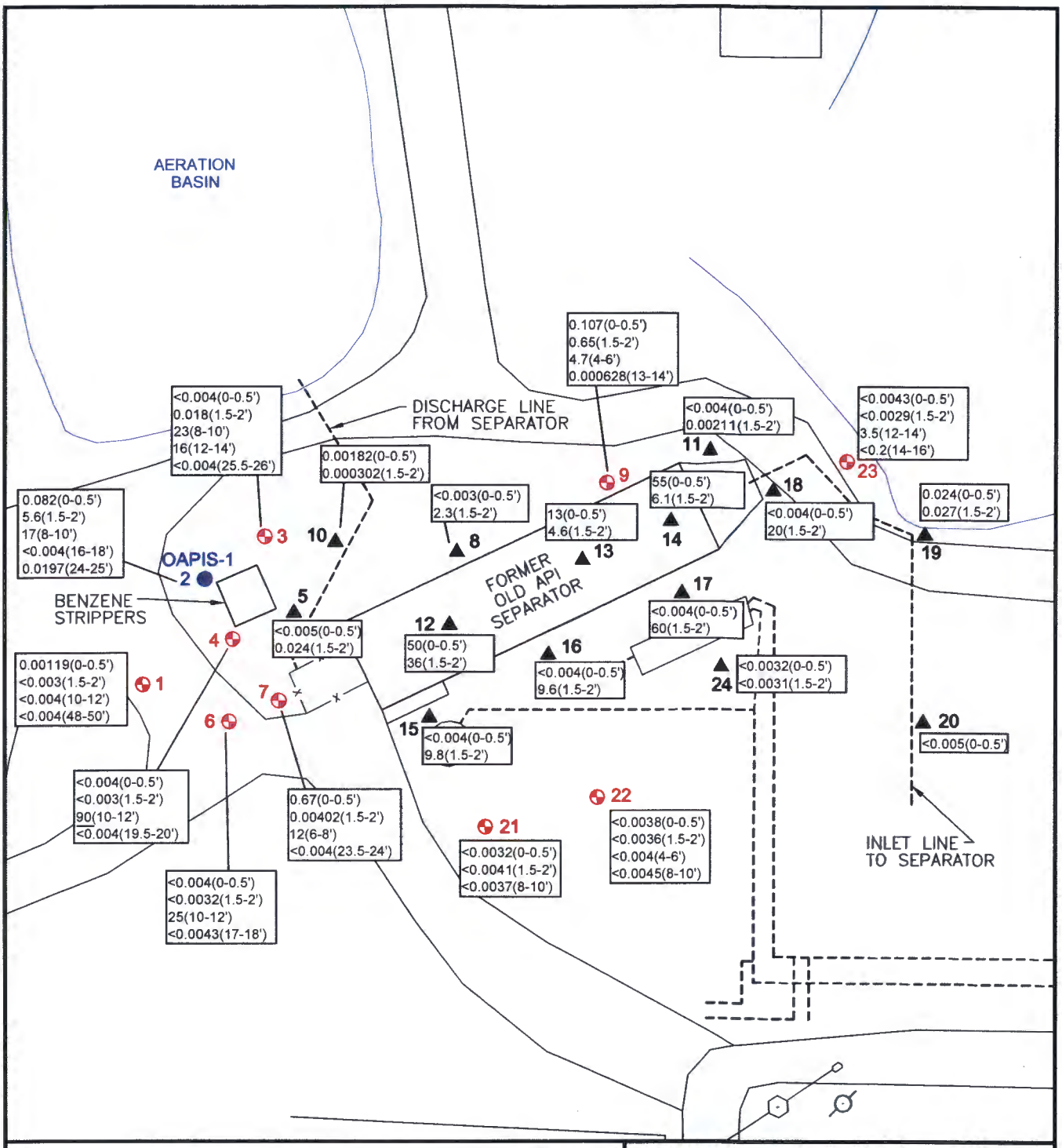

Map Source: Compiled by Photogrammetric Methods from Photography Acquired on March 1, 1998.

N

0 40
SCALE IN FEET

LEGEND

- MONITORING WELL LOCATION
- SOIL BORING LOCATION
- HAND AUGER LOCATION
- PIPELINE
- 0.00119(0-0.5') 2-METHYLNAPHTHALENE CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)
- 64.5 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 01/29/13	FILE: WestRef-A161

FIGURE 23
2-METHYLNAPHTHALENE
SOIL CONCENTRATIONS - SWMU No. 14
GALLUP REFINERY

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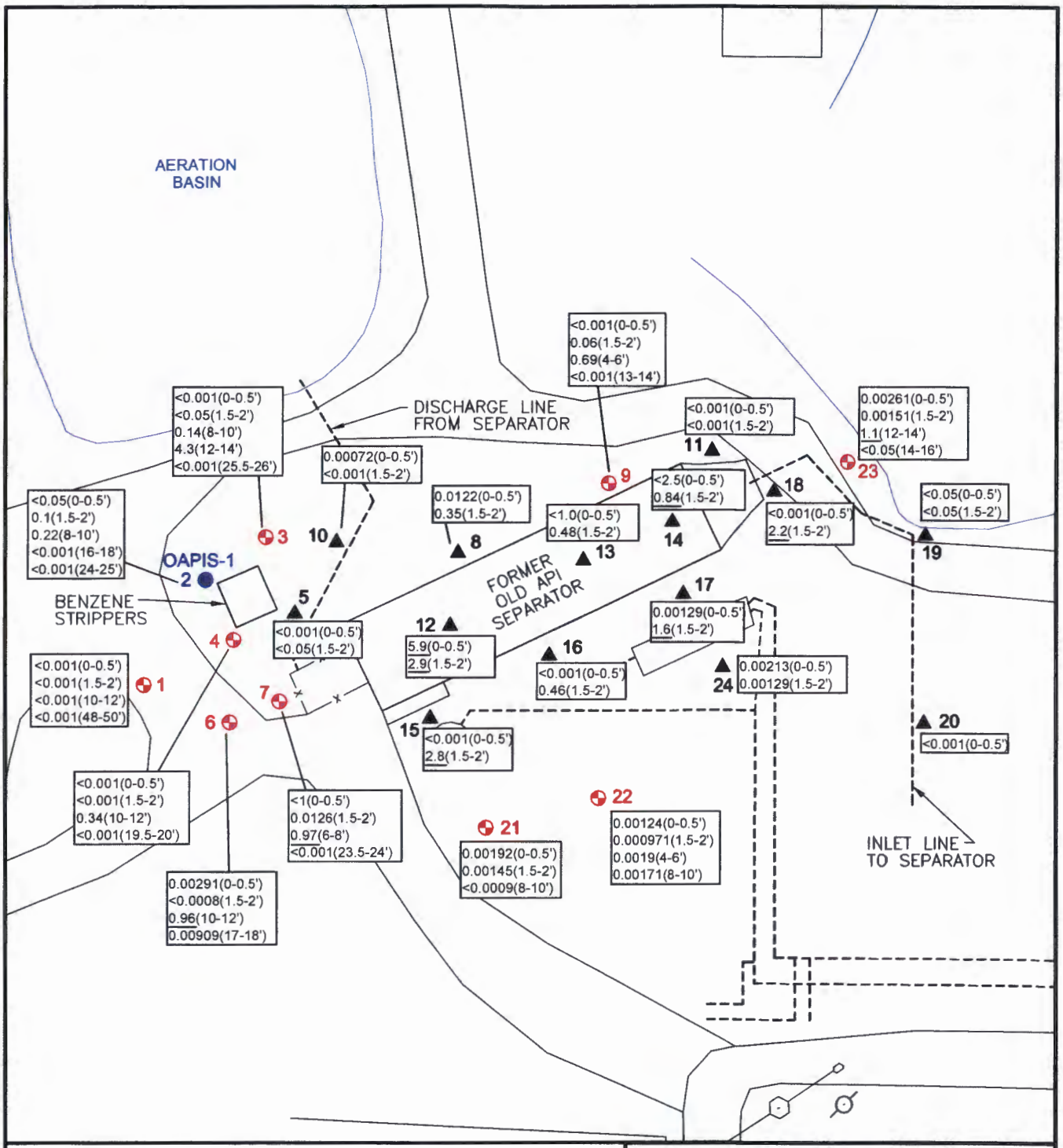

Map Source: Compiled by Photogrammetric Methods from Photography Acquired on March 1, 1998.

LEGEND

- MONITORING WELL LOCATION
- SOIL BORING LOCATION
- HAND AUGER LOCATION
- PIPELINE
- 0.00124(0-0.5') BENZENE CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)
- 0.796 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

N

0 40
SCALE IN FEET

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining	DATE:01/29/13	FILE:WestRef-A157

FIGURE 24
BENZENE
SOIL CONCENTRATIONS - SWMU No. 14
GALLUP REFINERY

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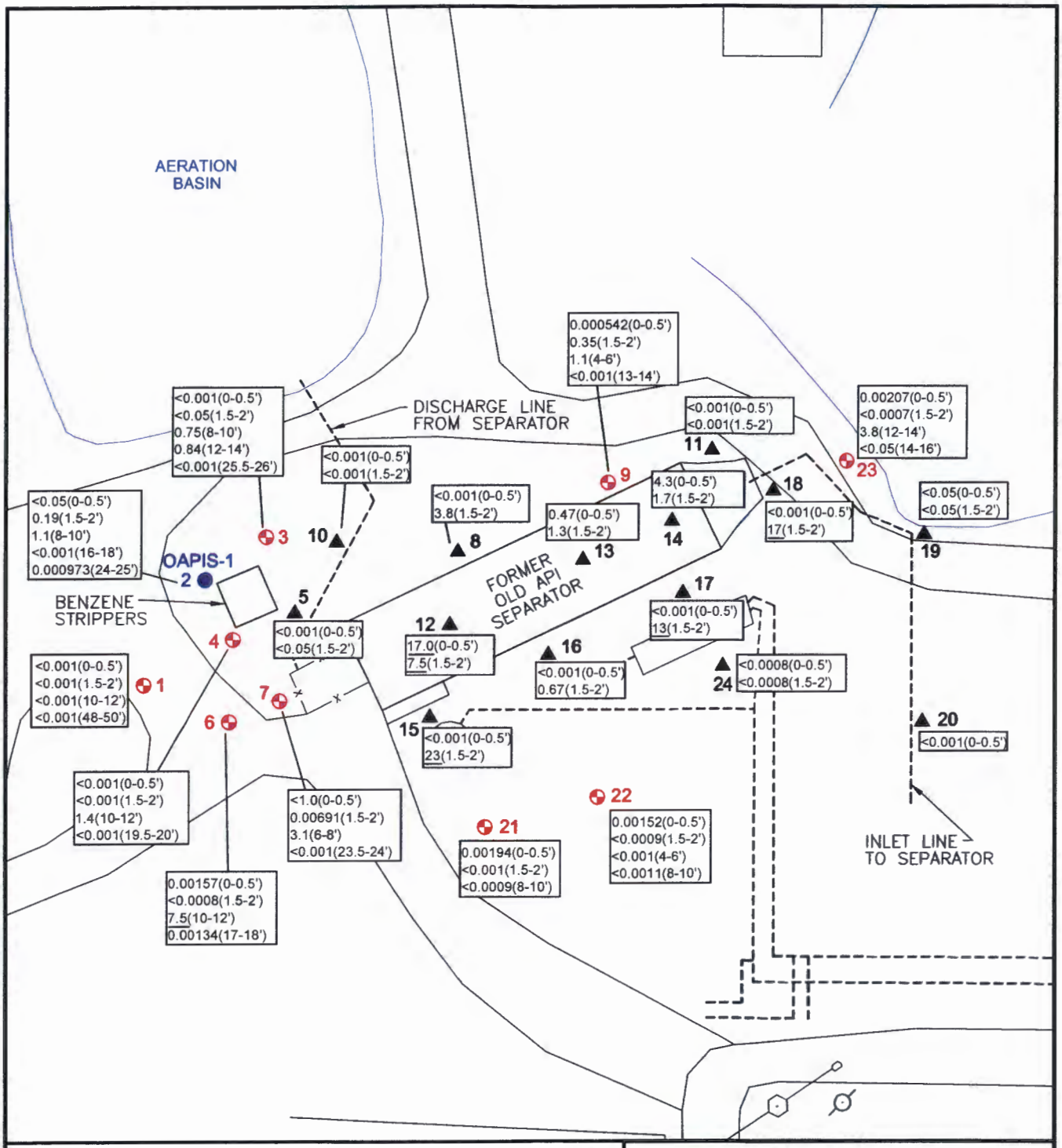

Map Source: Compiled by Photogrammetric Methods from Photography Acquired on March 1, 1998.

N

0 40
SCALE IN FEET

LEGEND

- MONITORING WELL LOCATION
- SOIL BORING LOCATION
- HAND AUGER LOCATION
- PIPELINE
- 0.00152(0-0.5') ETHYLBENZENE CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)
- 5.98 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 01/29/13	FILE: WestRef-A158

FIGURE 25
ETHYLBENZENE
SOIL CONCENTRATIONS - SWMU No. 14
GALLUP REFINERY

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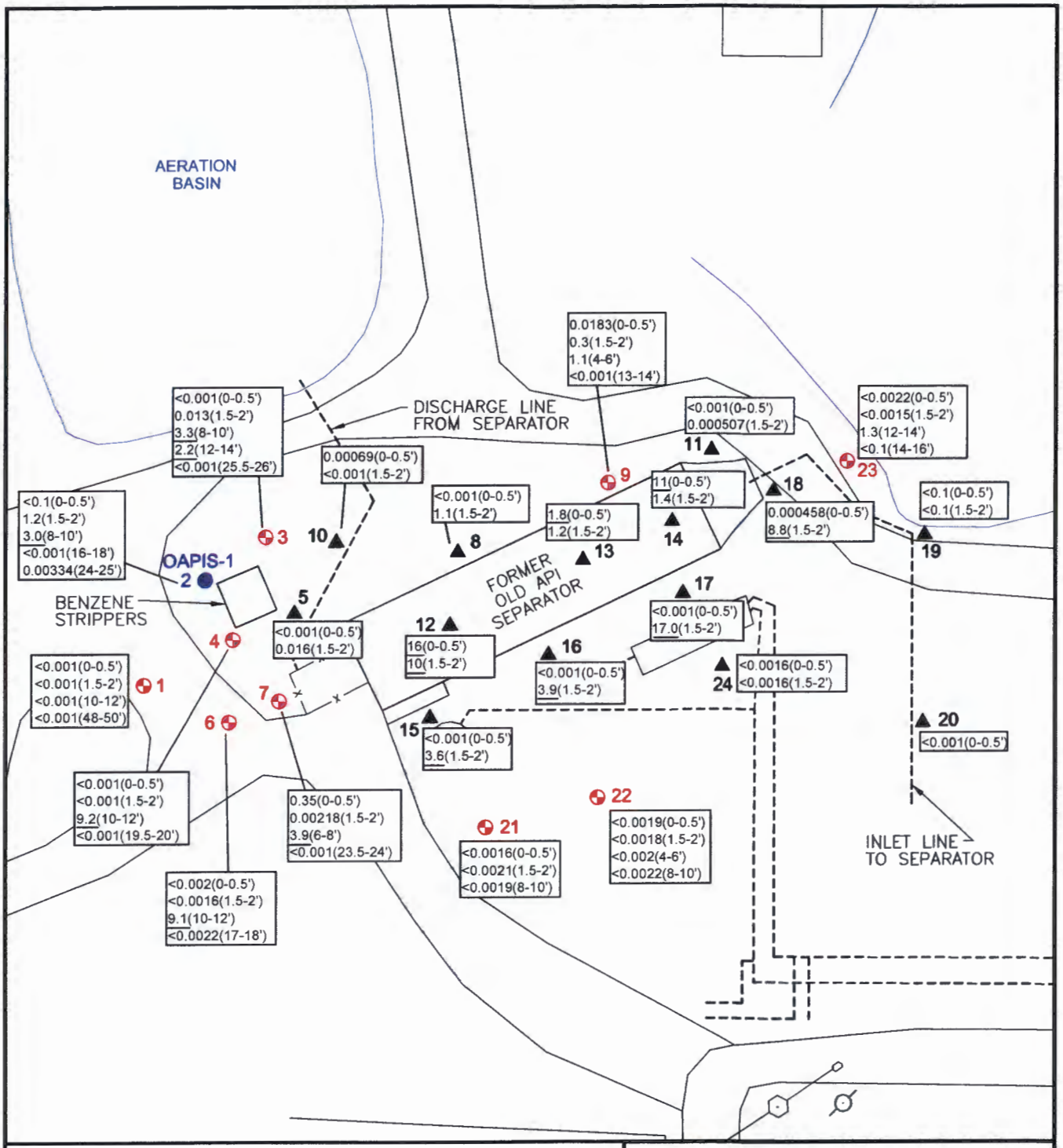

Map Source: Compiled by Photogrammetric Methods from Photography Acquired on March 1, 1998.

LEGEND

- MONITORING WELL LOCATION
- SOIL BORING LOCATION
- HAND AUGER LOCATION
- PIPELINE
- <0.0019(0-0.5') NAPHTHALENE CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)
- 1.64 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

N

0 40
SCALE IN FEET

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 01/29/13	FILE: WestRef-A159

FIGURE 26
NAPHTHALENE
SOIL CONCENTRATIONS - SWMU No. 14
GALLUP REFINERY

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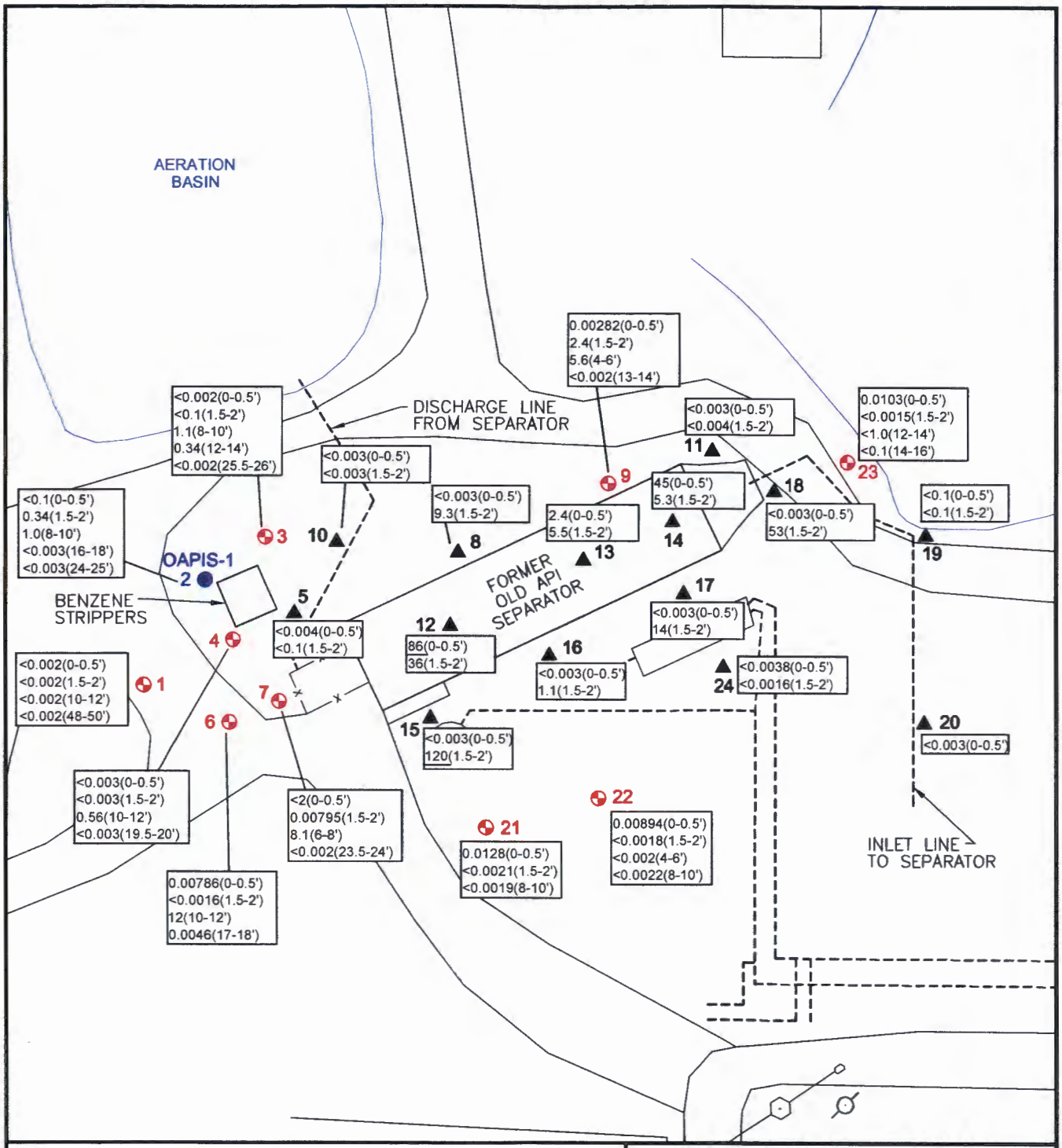

Map Source: Compiled by Photogrammetric Methods from Photography Acquired on March 1, 1998.

LEGEND

- MONITORING WELL LOCATION
- SOIL BORING LOCATION
- HAND AUGER LOCATION
- PIPELINE
- 0.0128(0-0.5') XYLENES CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)
- 72.1 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

N

0 40
SCALE IN FEET

Western Refining
GALLUP REFINERY

PROJ. NO.: Western -Refining	DATE: 01/29/13	FILE: WestRef-A162

FIGURE 27
XYLENES
SOIL CONCENTRATIONS - SWMU No. 14
GALLUP REFINERY

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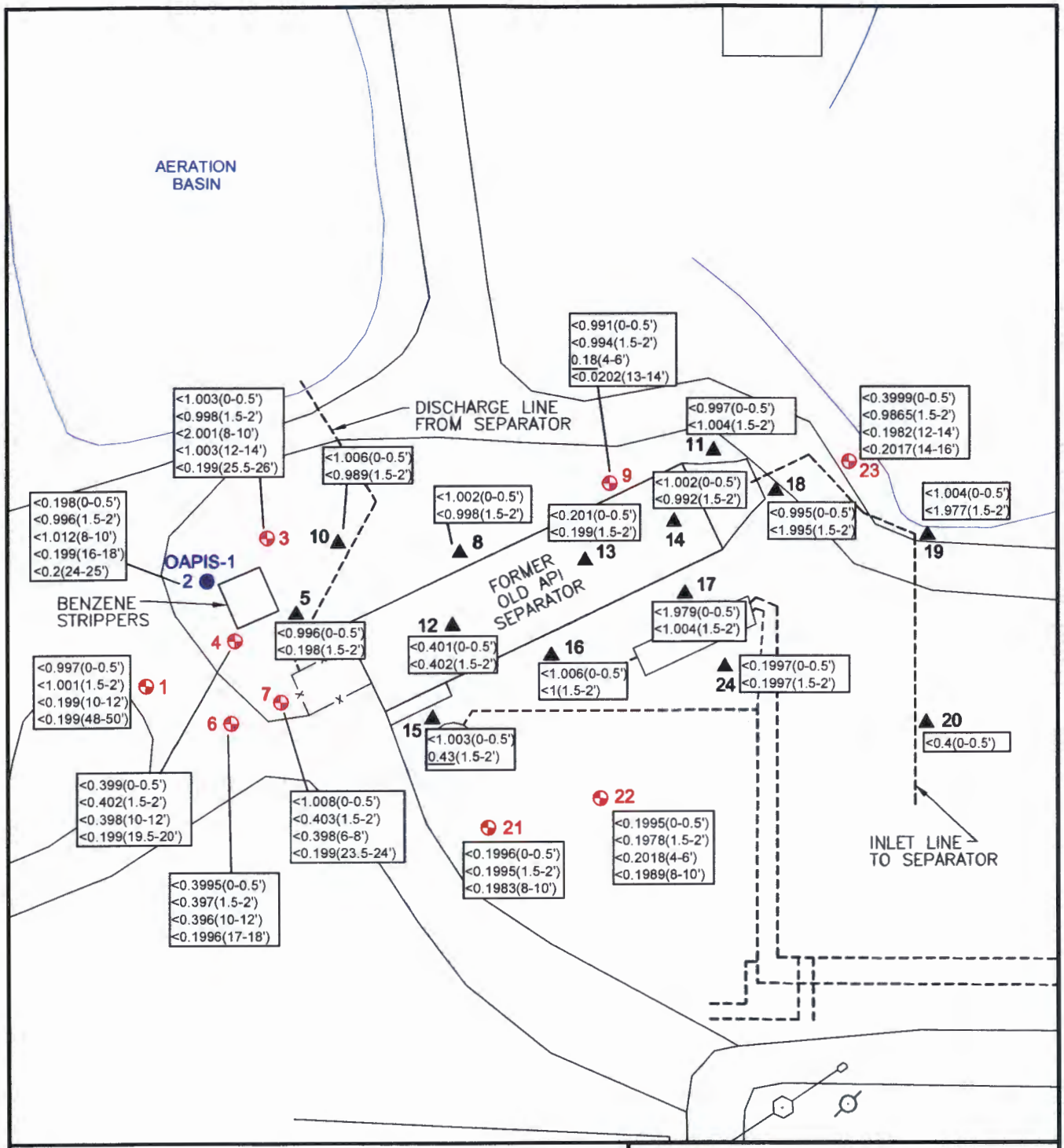

Map Source: Compiled by Photogrammetric Methods from Photography Acquired on March 1, 1998.

N

0 40
SCALE IN FEET

LEGEND

- MONITORING WELL LOCATION
- SOIL BORING LOCATION
- HAND AUGER LOCATION
- PIPELINE
- <1.003(0-0.5') BIS(2-CHLOROETHYL)ETHER CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)
- 0.0121 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining	DATE: 01/31/13	FILE: WestRef-A166

FIGURE 28
BIS(2-CHLOROETHYL)ETHER
SOIL CONCENTRATIONS - SWMU No. 14
GALLUP REFINERY

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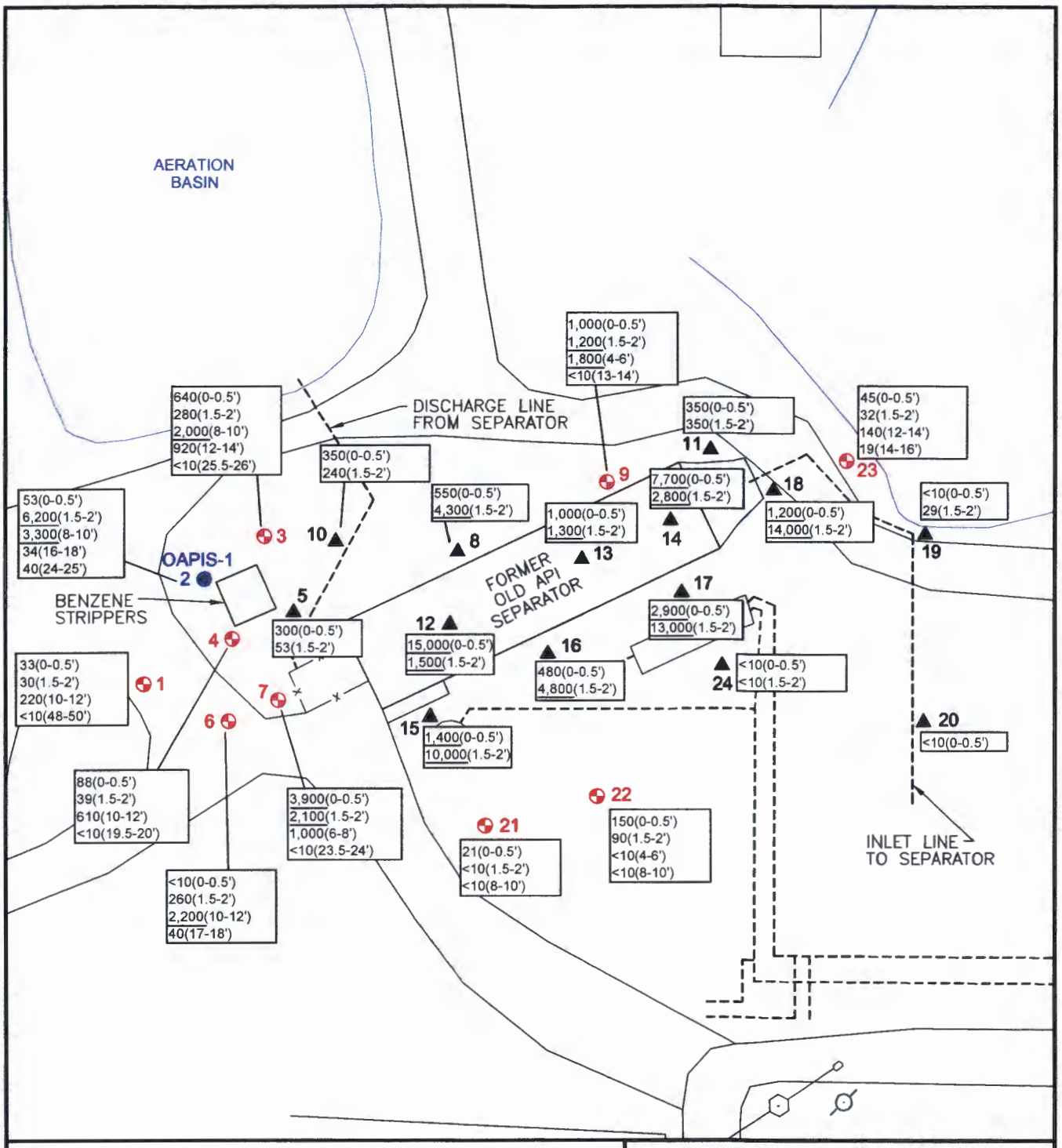
TBPE No. 1298



Map Source: Compiled by Photogrammetric Methods from Photography Acquired on March 1, 1998.

LEGEND

- MONITORING WELL LOCATION
- SOIL BORING LOCATION
- HAND AUGER LOCATION
- PIPELINE
- 21(0-0.5') DIESEL RANGE ORGANICS CONCENTRATION, mg/kg (SAMPLE DEPTH-FT)
- 1,000 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL

N

0 40
SCALE IN FEET

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining | DATE:01/29/13 | FILE:WestRef-A163

FIGURE 29
DIESEL RANGE ORGANICS
SOIL CONCENTRATIONS - SWMU No. 14
GALLUP REFINERY

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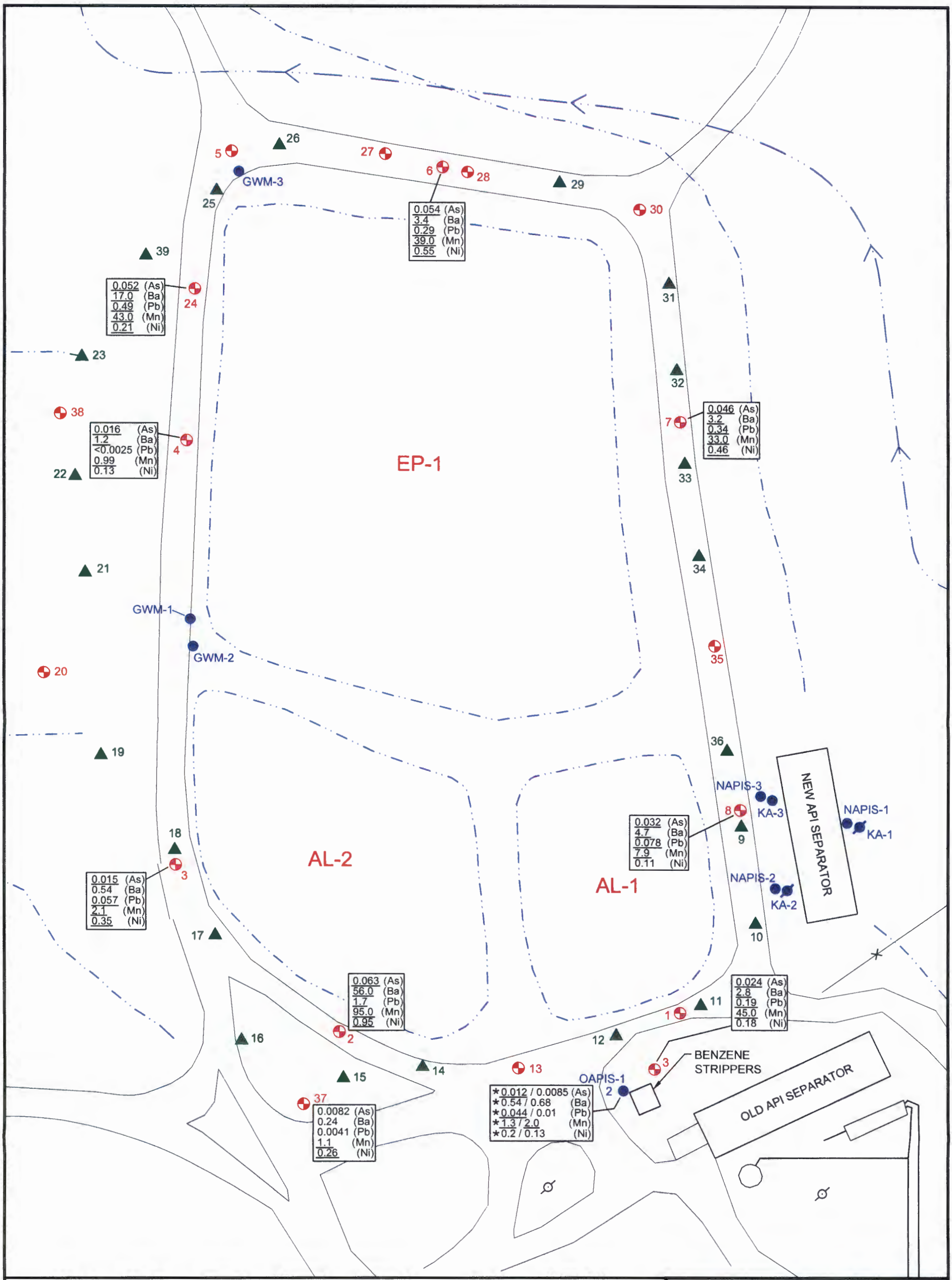

NOTE: CONSTITUENT SCREENING LEVEL UNITS - mg/l

LEGEND

- PERIMETER SOIL BORING LOCATION / TEMPORARY MONITORING WELL
- HAND AUGER SAMPLE LOCATION
- GWM-1 GROUNDWATER WELL LOCATION
- KA-1 PLUGGED & ABANDONED MONITOR WELL LOCATION
- 0.01 ARSENIC SCREENING LEVEL, mg/l (As)
- 1.0 BARIUM SCREENING LEVEL, mg/l (Ba)
- 0.015 LEAD SCREENING LEVEL, mg/l (Pb)
- 0.2 MANGANESE SCREENING LEVEL, mg/l (Mn)
- 0.2 NICKEL SCREENING LEVEL, mg/l (Ni)
- 0.21 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL
- * JULY 2012 SAMPLE RESULTS

N

0 50
SCALE IN FEET

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FIGURE 30
SWMU No. 1 & No. 14 - METALS
OCTOBER 2012 GROUNDWATER RESULTS
GALLUP REFINERY

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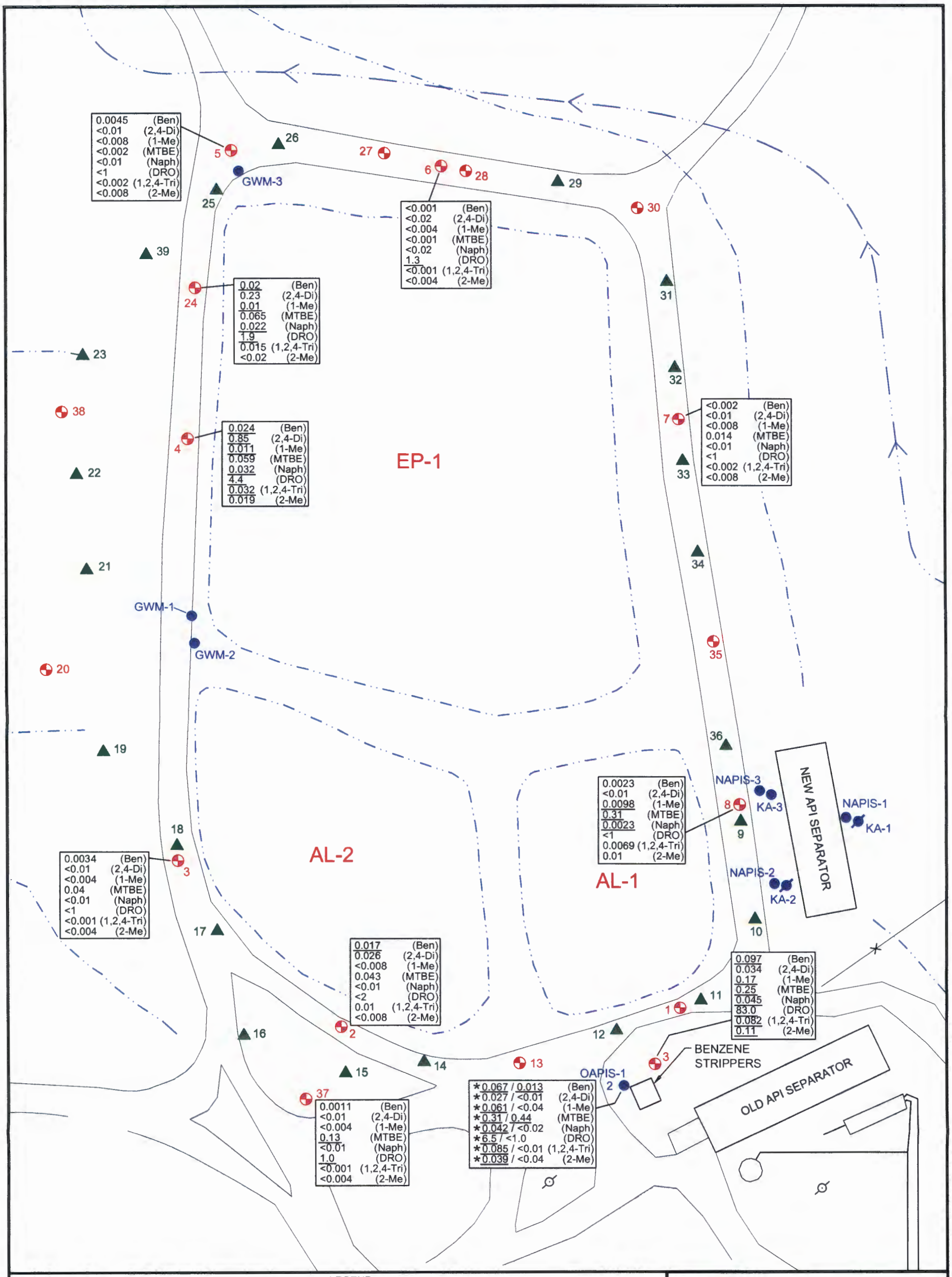

NOTE: CONSTITUENT SCREENING LEVEL UNITS - mg/l

LEGEND

- PERIMETER SOIL BORING LOCATION / TEMPORARY MONITORING WELL
- HAND AUGER SAMPLE LOCATION
- GWM-1 GROUNDWATER WELL LOCATION
- KA-1 PLUGGED & ABANDONED MONITOR WELL LOCATION
- 0.005 BENZENE SCREENING LEVEL, mg/l (Ben)
- 0.73 2,4-DIMETHYLPHENOL SCREENING LEVEL, mg/l (2,4-Di)
- 0.0097 1-METHYLNAPHTHALENE SCREENING LEVEL, mg/l (1-Me)
- 0.125 MTBE SCREENING LEVEL, mg/l (MTBE)
- 0.0014 NAPHTHALENE SCREENING LEVEL, mg/l (Naph)
- 0.2 DRO SCREENING LEVEL, mg/l (DRO)
- 0.015 1,2,4-TRIMETHYLBENZENE SCREENING LEVEL, mg/l (1,2,4-Tri)
- 0.027 2-METHYLNAPHTHALENE SCREENING LEVEL, mg/l (2-Me)
- 1.56 UNDERLINED CONCENTRATION VALUE EXCEEDS SCREENING LEVEL
- * JULY 2012 SAMPLE RESULTS

N

0 50
SCALE IN FEET

Western Refining
GALLUP REFINERY

PROJ. NO.:Western Refining | DATE:05/06/14 | FILE:WestRef-B153

FIGURE 31
SWMU No. 1 & No. 14 - ORGANICS
OCTOBER 2012 GROUNDWATER RESULTS
GALLUP REFINERY

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