Western Refining
GALLUP

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September 27, 2010

Mr. James P. Bearzi
Chief – Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

RE: REVISED RAILROAD RACK LAGOON OVERFLOW DITCH AND FAN-OUT AREA, SWMU No. 8 SUBSURFACE INVESTIGATION FINAL REPORT
WESTERN REFINING COMPANY SOUTHWEST, INC., GALLUP REFINERY
EPA ID # NMD000333211
HWB-WRG-10-002"

Dear Mr. Bearzi:

Western Refining Company Southwest Inc. (Western) is submitting this cover letter and the attached report as required by the New Mexico Environment Department (NMED). These documents demonstrate that the soil in the vicinity of Western's Railroad Rack Lagoon Overflow Ditch and Fan-Out Area with Diesel Range Organic (DRO) concentrations above NMED's cleanup standard of 890 mg/kg has been excavated. Western submitted the *Railroad Rack Lagoon Overflow Ditch and Fan-Out Area, SWMU No. 8, Subsurface Investigation Final Report, Western Refining Company Southwest, Inc., Gallup Refinery, EPA ID # NMD00033221, HWB-WRG-10-002* (Report) on January 6, 2010. NMED issued a *Notice of Disapproval* (NOD) to the Report on May 12, 2010. The NOD contained nine comments which NMED requested to have addressed prior to approving the report. Western submitted a response to NMED's comments on June 23, 2010 explaining how Western planned to address each of NMED's comments in a revised final Report.

NMED submitted a letter titled, *Direction for Additional Soil Confirmation Sample Collection and Approval of Extension Request, Railroad Rack Lagoon Overflow Ditch and Fan-Out Area, SWMU No. 8 Subsurface Investigation Final Report, Western Refining Company Southwest, Inc., Gallup Refinery, EPA ID # NMD00033221, HWB-WRG-10-002* (Direction for Additional Confirmation Sampling), on July 28, 2010. In this letter, NMED proposed that 11 additional confirmation samples be collected to demonstrate that the DRO contaminated soil had been removed. Western agreed to collect the 11 additional samples in a letter dated August 9, 2010. In this correspondence, Western also assumed that NMED's remaining NOD comments were adequately addressed in Western's June 23, 2010 correspondence. This assumption was verified during a phone conversation between Western (Ed Riege), NMED (Kristen Van Horn and Dave Cobrain), and Trihydro (Grant Price) on September 1, 2010.

NMED's NOD comments are listed below, followed by Western's June 23, 2010 responses. Previously proposed/approved report revisions are shown below in green text. Report revisions determined to be necessary after the original June 23, 2010 NOD responses are shown in blue text. NMED Comment 1 has been divided into subcomments so that each topic could be addressed separately.

NMED Comment 1

NMED's December 11, 2009 *Approval with Modifications,* required the Permittee to define the vertical and horizontal extent of contamination at the overflow and fan-out area. From the Report, it is not clear that the Permittee completed the task to define the vertical extent of contamination. Table 1 (DRO Analytical Data Summary) lists results that are above the Total Petroleum Hydrocarbon (TPH) Diesel Range Organics (DRO) cleanup level of 890 mg/kg.

Response to Comment 1

Table 1 of the Report lists all DRO data associated with the B-8 and B-9 excavations. These two locations were determined to be the only areas of concern based on the October 2006 investigation. In order to define the vertical and horizontal extent of contamination, contaminated soil must be identified. Therefore, Western deemed it appropriate to show the results of the contaminated soil on Table 1 and Figure 5. When DRO exceedances were discovered, the excavation was expanded to remove the DRO contaminated soil and additional confirmation samples were collected. Table 2 (a subset of Table 1) has been created to show the confirmation samples collected at the base and sidewalls of the excavation. These samples have DRO concentrations below the cleanup level of 890 mg/kg, thus delineating the vertical and horizontal extent of contamination. Table 2 is included as an attachment to this correspondence and, upon NMED approval, will be included in a revised version of the Report. The results of the additional confirmation samples collected on August 23 and 25, 2010 have been added to Tables 1 and 2 which are included in the revised Report.

NMED Comment 1 cont'd

Figure 5 (Railroad Rack Lagoon Overflow Ditch B-8 Excavation Areas and DRO Results) presents sample results and areas that were excavated, but it does not appear that confirmation samples were collected at the bottom of the excavation. The excavation bottom samples were required by NMED's March 14, 2009 letter *Approval with Direction* which stated "[i]f the excavation does not exceed three feet below ground surface (bgs), the Permittee may collect confirmation samples from the bottom of the excavations only. If the excavation exceeds three feet bgs, then confirmation samples must be collected from all sidewalls of the excavations in addition to from the base of the excavations." The Permittee did not follow this directive, for example, in Area 3, which was excavated to seven feet; confirmation samples were not collected from the base of this excavation.

Response to Comment 1 cont'd

Sample CS-14, located on the northwest corner of Area 3, was collected at 7 ft bgs from the edge of Areas 3 and 4. Thus, it can be considered a base confirmation sample for Area 3 and a sidewall confirmation sample for Area 4.

Sample CS-22 was collected approximately 2 feet north of Area 3. CS-22 was collected at 7 ft bgs to vertically delineate DRO contamination discovered in samples CS-19, CS-20, and CS-21

(3 ft bgs, 3.5 ft bgs, and 3.5 ft bgs, respectively). These samples, in part, necessitated extending the depth of the excavation in Area 3 (from 3 ft bgs to 7 ft bgs). Sample CS-22 was initially planned to be a base confirmation sample in Area 3; there are no DRO exceedances in the immediate vicinity of this sample location necessitating excavation deeper than 7 ft bgs. However, due to the nature of excavating with a backhoe (i.e. the precision and accuracy of the backhoe) and the fact that the areas were measured after the excavation had been completed, the portion of Area 3 including CS-22 was excavated to 13 ft bgs. Western believes that CS-22 may still be used to demonstrate vertical delineation (as a base sample) at Area 3 at a depth of 7 ft bgs even though it is technically located approximately 2 feet north of Area 3.

NMED Comment 1 cont'd

In Area 4, which was excavated to 13 feet, the Permittee collected six samples around the perimeter of the excavation at a depth of 13 feet and only three samples were collected from the base of the excavation.

Response to Comment 1 cont'd

Western is unclear as to NMED's comment that six samples were collected from around the perimeter of the excavation at a depth of 13 feet. As presented on Figure 5 and Table 1, three samples were collected from the base at perimeter of the 13 foot excavation (A-1, A-2, and A-3) and three internal base samples were collected from within the 13 foot excavation (CS-1, CS-16, and "B"). Thus, Western believes a total of six base confirmation samples were collected from Area 4. Further, four sidewall samples were collected from the 13-foot excavation. These sidewall samples include B-8 Center (5 feet), E (5 feet), K (5 feet), and M (5 feet).

To help clarify this issue, Western has created Figure 7 to illustrate base and sidewall confirmation samples for each area. The sidewall samples are shown as orange and base samples are shown as magenta. There are a few samples that can be considered both base and sidewall samples. For example, CS-14 is collected at 7 ft bgs on the corner of Area 3 and Area 4. In respect to Area 3, this is a base sample. In respect to Area 4, it is a sidewall sample. These "base/sidewall" samples are illustrated on Figure 7 in cyan. Figure 7 is included as an attachment to this correspondence and, pending NMED approval, will be included in a revised version of the Report. The results and locations of the additional confirmation samples collected on August 23 and 25, 2010 have been added to Figures 5 and 7 which are included in the revised Report.

NMED Comment 1 cont'd

At one point (A (B8-NEW-SE)) there is an increase in DRO concentration with depth and apparently no sample collected to demonstrate that the DRO-contaminated soil was removed.

Response to Comment 1 cont'd

At the time that additional delineation samples were being collected in the vicinity of A (B8-NEW-SE) (henceforth referred to as "A") to help determine the vertical extent of DRO contamination, a hollow stem auger drill rig was being used to collect soil samples. Due to the open excavation immediately adjacent to "A", deeper samples were not able to be safely collected at this exact location. Instead, deeper samples were collected at B (B8-NEW-SE-S1) (henceforth referred to as "B") which also showed DRO exceedances at depths as deep as 7 ft bgs. The "B" sample location is approximately 2 to 3 feet east of "A" and samples collected from 13 ft bgs, 18

ft bgs, and 23 ft bgs were each non-detect for DRO, thus verifying that the 13 ft bgs excavation was sufficient to remove DRO-contaminated soil.

NMED Comment 1 cont'd
In order to determine whether or not the removal of all soils containing concentrations of DRO above 890 mg/kg from the fan-out area was completed, the Permittee needed to collect samples from the base and sidewalls of the excavation. Therefore, confirmation samples must be collected at the excavation bottom and from the sidewalls using a systematic sampling pattern and samples must also be collected from areas of visible staining, elevated moisture levels, and contaminated zones identified by field-screening and beneath areas with detected residual contamination.

Response to Comment 1 cont'd
In the March 14, 2009 letter *Approval with Direction*, NMED had originally requested that 13 confirmation samples be collected for the original excavation area. However, because CS-2, CS-4, and CS-8 exceeded the DRO cleanup level, the excavation was expanded and 33 confirmation samples were collected (26 base, 4 sidewall, 3 base/sidewall – see Figure 7).

Western collected confirmation samples in accordance with the locations that NMED approved in the "Approval With Direction, Railroad Rack Lagoon Fan-Out Area Excavation Work Plan, Western Refining Southwest, Inc., Gallup Refinery, EPA ID #: NMD000333211, HWB-GRCC-07-002." When the size of the excavation was increased due to DRO exceedances, the same methodology was used to collect additional confirmation samples. An example of this methodology is shown using samples CS-19, CS-20, CS-21 and CS-22. Samples CS-19, CS-20, and CS-21 were above the DRO cleanup level at 3 or 3.5 ft bgs. Thus, the excavation was extended to 7 ft bgs in this area and CS-22 (horizontally located in the middle of CS-19, CS-20, and CS-21) was collected to vertically delineate DRO contamination.

As mentioned in section 4.3.3 of the Report, due to limited correlation shown between field screening data and confirmation sampling results, NMED permitted Western to proceed with the excavation utilizing visual observations and confirmation sampling results in lieu of field screening. When areas exhibiting visual contamination were identified, the size of the excavation was expanded and confirmation samples were collected. This was the case for CS-19 and CS-20. When the CS-19 and CS-20 samples were being collected, visible staining was observed. Thus, once the laboratory results were received, it was decided to excavate the area to 7 feet. This was the depth at which the staining was visibly removed.

NMED Comment 1 cont'd
Until the Permittee defines the extent of the contamination, NMED cannot determine if further remediation is necessary. The Permittee must conduct additional confirmation sampling and, if necessary, conduct additional excavation activities if the confirmation samples contain DRO concentrations greater than the acceptable cleanup level.

Response to Comment 1 cont'd
As mentioned in Section 7.0 of the Report, the B8 DRO exceedances discovered during the investigation/excavation are surrounded by at total of 67 soil samples showing DRO

concentrations less than the cleanup standard. Western believes these 67 soil samples define the extent of the DRO contamination and no additional confirmation sampling is necessary. However, per NMED's Direction for Additional Confirmation Sampling, 11 additional confirmation samples were collected on August 23 and 25, 2010. The additional sampling is discussed in Section 3.2 of the Report. Additional sample results and locations have been added to Tables 1 and 2 and Figures 5 and 7. A total of 784 cubic yards of DRO-contaminated soil encompassed by these 67 samples has been excavated. Therefore, Western believes no further excavation activities are necessary. This conclusion was supported by the additional 11 confirmation samples as discussed in Section 3.2 of the Report.

NMED Comment 1 cont'd

In the revised Report, the Permittee must submit a figure depicting the locations of the final confirmation sample locations, depths the samples were taken, and the analytical results. The Permittee must submit proposed confirmation sample locations for NMED approval no less than 30 days before confirmation sampling activities begin.

Response to Comment 1 cont'd

Figure 5 of the Report shows all sample locations, depths, and analytical results. Figure 7 and Table 2 (provided as attachments to this correspondence) have been created to show only the final confirmation sample locations. The revised Report will be updated to included Figure 7 and Table 2.

Note that Figure 7 and Table 2 only show confirmation sample results of those samples that were collected from the base or sidewall of the final excavation. Numerous other samples (for example, CS-24 and CS-18) were also necessary for delineating the DRO contaminated area. However, since these samples were not collected from the base or sidewall of the final excavation, they are not included on Figure 7 or Table 2. Figure 7 and Table 2 will be incorporated into the revised Report.

NMED Comment 2

In Section 3.2 (Excavation Activities), page 3-2, paragraph 3, the Permittee states "[c]onfirmation sample locations were strategically located to supplement the existing DRO data." The Permittee must include more detail regarding the confirmation sampling (i.e., provide the rationale for the "strategic" location of the confirmation samples). The Permittee must revise the Report to include specific details regarding the confirmation sampling locations and the logic behind the selection of the sampling locations.

Response to Comment 2

Thirteen original confirmation sample locations and depths were approved by NMED in the "Approval With Direction, Railroad Rack Lagoon Fan-Out Area Excavation Work Plan, Western Refining Southwest, Inc., Gallup Refinery, EPA ID #: NMD000333211, HWB-GRCC-07-002." These locations were selected because limited DRO data existed in these areas. These confirmation samples are identified as CS-1 through CS-13. If a confirmation sample showed a DRO exceedance, the excavation was expanded. As the excavation was expanded, additional confirmation samples were collected to verify that the soil remaining in place was below the

DRO cleanup standard. An example of this logic is provided in the response to Comment 1 (CS-19, CS-20, CS-21, and CS-22).

NMED Comment 3

In Section 3.2 (Excavation Activities), page 3-2, paragraph 3, the Permittee states "[d]ue to confirmation sample DRO exceedances, the size of the excavation; as proposed in the 2008 Excavation Work Plan, was increased ... Excavation activities continued through October 2009 due to additional confirmation sample exceedances and visually impacted soil." The Permittee must revise the Report to include additional detail regarding the excavation. For example, the Permittee must state, or include a figure with, the locations where the exceedances were found (e.g., sample location, depth, cardinal direction), discuss the amount of soil removed during each of the excavations, and describe confirmation sampling.

Response to Comment 3

Per the 2008 Excavation Work Plan, confirmation samples CS-1 through CS-13 were collected from the original excavation. The results of these samples, as well as the results of all samples associated with the excavation, are shown on Table 1 and Figure 5 of the Report. Of the original 13 confirmation samples, CS-2, CS-4, and CS-8 exceeded the DRO cleanup standard. Figure 4 shows the proposed excavation area versus the actual excavation area. As shown on Figure 4, the original confirmation sample exceedances prompted the excavation to be expanded generally to the west and southwest. However, each exceedance identified during delineation and excavation activities prompted additional investigation/excavation. As shown on Table 1, 28 exceedances were identified in the B-8 Excavation. Western deemed it more appropriate to illustrate these exceedances on a figure (Figure 5) rather than attempt to describe each of them in the text of the report.

NMED also requested that Western provide the amount of soil removed during each of the excavations. Western considers this to be a single excavation that was continuously expanded until the DRO contaminated soil was delineated and removed. Intermediate volumes were not required as part of the 2008 Excavation Work Plan, thus this information was not recorded or calculated. However, the final total volume is presented in Section 7.0 of the Report.

Confirmation soil sampling procedures are discussed in Section 4.3.2.2 and 4.3.1.2 of the Report.

NMED Comment 4

In Section 3.2 (Excavation Activities), page 3-2 and 3-3, the Permittee states "Test Pit B-8 confirmation sample locations and results are illustrated in Figure 5. Area 1 was excavated to depth of 3 feet below ground surface (ft bgs), and excavation activities in this area were overseen by Trihydro. Area 2 was excavated to a depth of 5 ft bgs by Gallup personnel. Area 3 and 4 excavations were overseen by a combination of Trihydro and Gallup personnel and extended to 7 and 13 ft bgs." The Permittee must revise the Report to discuss the basis for excavation to the various depths (e.g., the confirmation sample detections that indicated the need for additional soil removal). The Permittee must revise Figure 5 or provide an additional figure to show the final confirmation sample locations, see Comment 1.

Response to Comment 4

As presented in the Report, each area was excavated until the outermost samples (both horizontal and vertical) were below the DRO cleanup standard of 890 mg/kg. For example, an exceedance of DRO was discovered at 9 ft bgs at sample location "A." Therefore, this area was excavated to 13 ft bgs which was shown to be below the cleanup standard at sample location "B." The final confirmation samples prompting cessation of the excavation are illustrated on Figure 7 and Table 2. This Figure and Table are provided as attachments to this document and, pending NMED approval, will be provided in the revised Report. Figure 7 and Table 2 have been added to the report.

NMED Comment 5

In Section 4.3.1.1 (Delineation Sample Locations), page 4-2, paragraph 2, the Permittee states "[t]he sampling locations in these three delineation sampling events (May, August, and December 2007) were determined based on exceedances identified during the preceding sampling events. These locations are illustrated on Figures 5 and 6." The Permittee must list these sampling locations by name in the text, so that the locations can be identified in the figures. Additionally, Figure 5 appears to illustrate the locations of multiple sampling events beyond the three delineation events mentioned above. The Permittee must revise the Report to refer to specific sampling locations, instead of referring to the locations generally.

Response to Comment 5

A total of 101 samples were collected throughout the investigation/excavation. Western believes that attempting to discuss each individual sample result, whether or not the result prompted additional excavation, and what direction the excavation was expanded due to the result of the sample would cause more confusion than clarification. Instead, Western provided this information on Figure 5 where the information can be visualized. Each exceedance identified during delineation and excavation activities prompted additional investigation/excavation. The excavation was expanded until data showed that the remaining outermost samples (both horizontally and vertically) were below the cleanup standard.

As mentioned in NMED's comment, the text of the Report refers to three delineation events (May, August, and November 2007). These delineation events were used to determine the initially proposed excavation area presented in the 2008 Excavation Work Plan, dated September 17, 2008. Western considers subsequent field activities (excavation and confirmation sampling) as one, continuous field event, which is why multiple excavation "events" are not discussed in the text. The data collected from excavation and confirmation sampling is presented on Table 1 and Figure 5 in addition to the data collected from the three delineation events, for completeness. Sample IDs, the date which the sample was collected, the depth at which the sample was collected, and whether or not the sample exceeded the DRO cleanup standards are shown on Table 1. Sample locations, depths, and results are shown Figures 5 and 6. The sample dates shown on Table 1 may be used to determine with which event each sample is associated.

NMED Comment 6

In Section 4.3.2.1 (Confirmation Sample Locations), page 4-4, paragraph 1, the Permittee states "[a] total of ten sidewall and base confirmation sample locations were proposed in the 2008 Excavation Work Plan.

Three additional locations were added at the suggestion of NMED in the December 11, 2008 Approval with Direction letter provided as Appendix F. These 13 locations were strategically located in areas where DRO delineation data was limited in an attempt to fill potential data gaps. Of the 13 approved confirmation sampling locations, 3 exceeded the DRO cleanup standard prompting expansion of the excavation." The Permittee must revise the Report to be specific regarding the sample location names (e.g., instead of stating, "of the 13 approved sampling locations, 3 exceeded," list the specific location designations).

Response to Comment 6

As shown in Table 1 of the 2008 Excavation Work Plan, the original proposed confirmation sampling locations are designated CS-1 through CS-10. Per NMED's conditional approval, CS-11 through CS-13 were added. As shown in Table 1 and Figure 5 of the Report, CS-2, CS-4, and CS-8 exceeded the DRO cleanup standard. The revised Report will specify CS-2, CS-4, and CS-8 as the three original confirmation sample locations that exceeded the cleanup level. Section 4.3.2.1 has been revised accordingly.

NMED Comment 7

In Section 4.4 (Investigation Derived Waste), page 4-5, the Permittee states "[e]xcavated soils and soil cuttings produced during the sampling events have been transported to Gallup's Land Farm as permitted by OCD." The Permittee must revise the Report to describe the estimated volume of soil cuttings and excavated soil that were disposed of at the Land Farm.

Response to Comment 7

As stated in Section 7.0 of the Report, approximately 784 cubic yards of soil were excavated from B-8. Dimensions for the B-9 excavation were also included in the Report, however the volume of soil was not. Approximately 3 cubic yards of soil were excavated from B-9. The revised Report will include the total cubic yards of soil excavated from B-9. Section 7.0 has been revised accordingly.

NMED Comment 8

In Section 6.1 (Test Pit B-9), the Permittee states "samples collected from each corner of the excavation at depths of 3 ft bgs and the center of the excavation at a depth of 5 ft bgs showed DRO concentrations below the clean up standard." The sample points are illustrated in Figure 6 (Railroad Rack Lagoon Overflow Ditch B-9 Final Excavation Area and Sample Results); the Permittee excavated the ditch to 5 feet, but in the figure it is not apparent that the 3 ft samples are sidewall samples. The Permittee must revise the Report and Figures to differentiate between sidewall and bottom confirmation samples (e.g., use different symbols or colors on the figures, provide additional figures or in a table cross-referenced in the figure key).

Response to Comment 8

If a sample is collected at the boundary of an area at a depth less than the total depth of the area, it is considered a sidewall sample. If a sample is collected at a depth equal to the total depth of a specific area, it is considered a base sample.

The revised Report will be updated to show base and sidewall samples as magenta and orange, respectively. For the B-9 Excavation, Figure 6 will be updated according to this color scheme. Figure 6 has been revised accordingly.

Due to the complexity of Figure 5, Figure 7 has been created for the B-8 Excavation to show only the final confirmation samples. The above mentioned orange and magenta color scheme is used to differentiate between base and sidewall samples. There are a few samples that can be considered both base and sidewall samples. For example, CS-14 is collected at 7 ft bgs on the corner of Area 3 and Area 4. In respect to Area 3, this is a base sample. In respect to Area 4, it is a sidewall sample. These "base/sidewall" samples are illustrated on Figure 7 in cyan. Figure 7 has been added to the report.

NMED Comment 9

In Section 6.2 (Test Pit B-8), the Permittee states "As illustrated on Figure 5, between delineation and confirmation sampling activities, a total of 67 soil samples showing DRO concentrations below the cleanup standard have been excavated from the vicinity of Test Pit B-8. A summary of the analytical data is provided as Table 1." Figure 5 and Table 1 appear to show either residual contamination, or that the Permittee did not collect confirmation samples from the base of the excavation. See Comment 1 regarding Figure 5, Table 1 and additional confirmation sampling requirements.

Response to Comment 9

Figure 5 and Table 1 show all delineation and confirmation sampling data, regardless of whether the data exceeds the DRO cleanup standard or not. The outermost (horizontally and vertically) data do not exceed the cleanup standard. Western deemed it appropriate to include the exceedances so that NMED could see that the DRO contamination has been delineated. Figure 7 and Table 2 have been created to show that confirmation samples below the cleanup standard surround the sidewalls and base of the excavation. Figure 7 and Table 2 have been updated to include the locations and sample results of the additional 11 confirmation samples.

NMED FINAL COMMENT

The Permittee must address all comments contained in this NOD and submit a revised Work Plan to NMED and OCD on or before July 20, 2010. The revised Report must be accompanied by a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments. In addition, the Permittees must submit a redline-strikeout version that includes all changes and edits to the Report (electronic copy) with the response to this NOD.

Final Comment Response

Western believes that the additional explanation provided in this response, along with Figure 7 and Table 2, show that the Fan-out Area DRO contamination has been delineated and excavated. Thus, Western hopes that a revised Work Plan will not be necessary. Upon NMED's approval of these responses, Western will provide a letter detailing the revisions to the Report and cross-referencing NMED's numbered comments. Western considers this correspondence to be the letter detailing revisions to the Report and cross-referencing NMED's numbered comments. Western will also provide an electronic redline-strikeout version that includes all changes and

edits to the Report. The redline-strikeout version that includes all changes and edits to the report is provided as an attachment to this letter.

Western believes that this letter, along with the attached, revised Report, demonstrate that the soil in the vicinity of Western's Railroad Rack Lagoon Overflow Ditch and Fan-Out Area with DRO concentrations above NMED's cleanup standard of 890 mg/kg has been excavated. Upon NMED approval of the attached revised Report, Western will backfill the B-8 excavation with clean fill material. If you have any questions, or if we can be of further service to you, please do not hesitate to call me at (505) 722-0217.

Sincerely,
Western Refining Company

Ed Riege
Environmental Manager

697-039-001

Attachments

cc: J. Kieling, NMED HWB
D. Cobrain NMED HWB
H. Monzeglio NMED HWB
K. Van Horn NMED HWB
C. Chavez, OCD
A. Hains, Western – El Paso, TX
J. Lieb, Western – Gallup, NM
R. Mitchell - Trihydro
File: Reading File and WRG 2010 File HWB-WRG-10-002

RAILROAD RACK LAGOON OVERFLOW DITCH AND FAN-OUT AREA, SWMU NO. 8 SUBSURFACE INVESTIGATION FINAL REPORT WESTERN REFINING COMPANY GALLUP REFINERY, GALLUP, NEW MEXICO

Revised September 27, 2010

Project #: 697-039-001

SUBMITTED BY: Trihydro Corporation

1252 Commerce Drive, Laramie, WY 82070

EXECUTIVE SUMMARY

In June 2006, the New Mexico Environment Department (NMED) requested that the Gallup Refinery (Gallup), located near Gallup, New Mexico, investigate the presence of residual contamination in the Railroad Rack Lagoon Overflow Ditch and Fan-out Area. These two areas are considered to be part of Solid Waste Management Unit No. 8 (SWMU No. 8). A soil sampling work plan was submitted to NMED on August 29, 2006. After minor modifications to the work plan at NMED's request, a subsurface soil investigation of the Railroad Rack Lagoon Overflow Ditch and Fan-out Area was conducted in October 2006.

This investigation resulted in the discovery of two locations, Test Pits B-8 and B-9, which showed total petroleum hydrocarbon (TPH) diesel range organic (DRO) concentrations exceeding NMED's cleanup standard of 890 mg/kg. Further sampling was required to delineate the DRO contamination associated with these test pits. Three subsequent sampling events were conducted in May, August, and December 2007 in order to delineate the extent of the DRO contamination and approximate an estimated volume of material to be excavated.

After delineation activities were believed to be complete, plans for excavating and transporting the DRO contaminated soil were made. Excavation and confirmation sampling events were conducted from March 2009 through August 2010. These events continued until confirmation samples verified that soil with DRO concentrations exceeding the cleanup standard had been removed. Excavated soils met the Oil Conservation District's (OCD) acceptance criteria and were transported to Gallup's Northeast Land Farm.

This report describes the delineation, sampling, and excavation activities that have occurred since the October 2006 subsurface investigation. Gallup believes that the information presented in this report demonstrates that the soil in the Rail Road Rack Lagoon Overflow Ditch and Fan-out Area with DRO concentrations above the cleanup standard has been excavated. The excavations associated with Test Pits B-8 and B-9 currently remain open and will be promptly backfilled with clean fill material pending NMED approval of this report.

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M. NMED CLEANUP STANDARDS

1.0 INTRODUCTION

Western Refining (formerly known as Giant Industries, Arizona Inc.) requested that Trihydro Corporation (Trihydro) conduct a subsurface investigation at the Gallup Refinery (Gallup) near Gallup, New Mexico to characterize soil in the Railroad Rack Lagoon Overflow Ditch and Fan-out Area (Overflow Ditch and Fan-out Area) which are located within Solid Waste Management Unit No. 8 (SWMU No. 8). SWMU No. 8 is located on Gallup property northeast of the main refining process area. A topographic map of Gallup that shows the relative location of the Overflow Ditch and Fan-out Area is included as Figure 1. Figure 2 shows SWMU No. 8 and surrounding well locations as required by the New Mexico Environment Department (NMED). Trihydro's initial subsurface investigation was conducted in October 2006 (October 2006 Subsurface Investigation). As a result of this investigation and subsequent NMED correspondences, soil with diesel range organics (DRO) concentrations exceeding 890 mg/kg have been excavated from portions of the Overflow Ditch and Fan-out Area. This report is being submitted to NMED to summarize the subsurface investigation and remedial activities conducted at SWMU No. 8.

2.0 BACKGROUND

The Overflow Ditch and Fan-out Area were used to manage overflow when the Railroad Rack Lagoon was filled beyond capacity. The Railroad Rack Lagoon has not been used since the mid-1980's. Figure 3 shows the dimensions and relative location of the Overflow Ditch and Fan-out Area. Both of these areas are considered to be part of SWMU No. 8. The Fan-out area is generally surrounded by earthen berms approximately 2-3 feet (ft) high. The Railroad Rack Lagoon, Overflow Ditch, and Fan-out area were sampled during the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) in 1992. During this investigation, soil samples from these areas were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and total metals. The RFI concluded that VOCs/SVOCs were at minimal levels, and inorganic levels were below background contamination levels with the exception of chromium. However, chromium levels were below the RCRA Corrective Action levels, thus no remediation was required.

The October 2006 Subsurface Investigation was conducted in response to a letter that Gallup received from NMED, dated June 29, 2006. In this correspondence, comment # 26 requested information regarding the presence of residual contamination in the Overflow Ditch and Fan-out Area locations. A soil sampling work plan was submitted to NMED on August 29, 2006. Two sample location changes were requested by NMED in a letter titled *Approval with Modifications, Work Plan For Investigation of the Overflow Ditch and Fan-Out Area of Railroad Rack Lagoon, SWMU No. 8*, dated September 19, 2006. Gallup and Trihydro modified the sampling locations accordingly. The remainder of the work plan was approved by the NMED.

The results of this investigation were reported in the *Railroad Rack Lagoon Overflow Ditch and Fan-Out Area, SWMU 8 Subsurface Investigation* report (October 2006 Subsurface Investigation Report), dated February 8, 2007. Based on the findings of the October 2006 Subsurface Investigation, two areas were identified in the Overflow Ditch and Fan-out Area where NMED's DRO total petroleum hydrocarbon (TPH) guideline of 890 mg/kg (cleanup standard) was exceeded. As described in the October 2006 Subsurface Investigation Report, these areas are associated with Test Pits B-8 and B-9. Figure 3 shows the locations of these test pits. Several field events have been conducted since the initial subsurface investigation to delineate the extent of the DRO contamination, excavate DRO contaminated soil, and collect confirmation samples to demonstrate that soil with DRO concentrations exceeding the cleanup standard has been removed. This report describes the field activities conducted after the October 2006 Subsurface Investigation Report and presents the analytical data that demonstrates that DRO contaminated soil associated with Test Pits B-8 and B-9 has been removed.

3.0 SCOPE OF SERVICES

Based on the results of the October 2006 Subsurface Investigation, NMED required that Gallup develop and implement a plan for determining the extent of and removing DRO contaminated soil associated with Test Pits B-8 and B-9. Gallup subsequently requested Trihydro's assistance in delineating and excavating the DRO contamination associated with these locations. The remainder of this section details the activities that were implemented to achieve these project objectives.

3.1 DRO DELINEATION ACTIVITIES

May 2007

In May 2007, Test Pits B-8 and B-9 were increased in size, both horizontally and vertically, in an attempt to excavate DRO contaminated soil above the cleanup standard. Confirmation samples were collected from both of the newly expanded excavations. The updated test pit logs for the expanded test pits are included as Appendix A and sample forms are included in Appendix B.

The soil sample results from the excavation associated with Test Pit B-9 were below the DRO cleanup standard. Excavated soils have been transported to Gallup's Northeast Oil Conservation District (OCD) Land Farm. Gallup contacted OCD and verified that the excavated soil was permitted to be accepted by the Land Farm. Based on this data, DRO contaminated soil in the vicinity of Test Pit B-9 has been excavated.

The confirmation soil sample results from Test Pit B-8 remained higher than the cleanup standard for DRO (890 mg/kg). As a result, Gallup requested that Trihydro conduct another investigation to delineate the DRO contamination associated with Test Pit B-8. This investigation was conducted in August 2007.

August 2007

The objective of the August 2007 sampling event was to delineate the DRO contaminated soil associated with Test Pit B-8. Soil samples were collected during the week of August 20, 2007 and were located to accurately delineate DRO contamination and minimize the amount of soil that would potentially require excavation. Several of the August 2007 soil samples exceeded the DRO cleanup standard prompting additional field events. The sample forms from the August 2007 event are included in Appendix B.

December 2007

The objective of this field event was to further delineate DRO contamination associated with Test Pit B-8. The spacing and depths of sampling locations were increased during the December 2007 event to assist in efficiently delineating the extent of DRO contamination. Samples were collected in a radial pattern 20 feet away from the outermost DRO exceedances discovered during the August 2007 event using a hollow-stem auger drill rig. Borehole logs from this sampling event are provided as Appendix C. Sample forms were not completed for these locations because all relevant sampling information is recorded on the borehole logs. Results from samples collected during the December 2007 event showed DRO concentrations below the cleanup standard. Accordingly, preparations for excavation began. The analytical data reports along with data validation reports for DRO delineation activities are included in Appendix D. Analytical data is summarized in Table 1.

3.2 EXCAVATION ACTIVITIES

Following the DRO delineation activities, Gallup requested Trihydro's assistance to develop and implement an excavation plan to remove soil exceeding the DRO cleanup standard in the vicinity of Test Pit B-8. The remainder of this section summarizes the development and implementation of this plan.

A letter titled *Railroad Rack Lagoon Fan-out Area Excavation Work Plan* was submitted to NMED for approval on May 2, 2008. NMED commented on this work plan in a letter dated July 22, 2008 which is provided as Appendix E. The work plan was revised to address NMED's concerns and resubmitted in report format on September 17, 2008. This document, titled *Railroad Rack Overflow Ditch and Fan-Out Area Soil Investigation Work Plan* (2008 Excavation Work Plan), was approved with direction in a letter from NMED dated December 11, 2008 which is included as Appendix F. Excavation and confirmation sampling activities commenced in March 2009 in accordance with these documents.

Confirmation sample locations were strategically located to supplement existing DRO data. Confirmation samples were sent to Hall Environmental located in Albuquerque, NM for DRO analysis. Due to confirmation sample DRO exceedances, the size of the excavation, as proposed in the 2008 Excavation Work Plan, was increased. A comparison between the size of the excavation as proposed in the 2008 Excavation Work Plan and the actual size of the excavation area is shown on Figure 4. Excavation activities continued through October 2009 due to additional confirmation sample exceedances and visually impacted soil. During this timeframe, a total of 24 confirmation samples showing DRO concentrations below the cleanup standard were collected. Figure 5 shows sample locations and results from

throughout the investigation, including the delineation and confirmation sampling events. Area 1 was excavated to depth of 3 feet below ground surface (ft bgs), and excavation activities in this area were overseen by Trihydro. Area 2 was excavated to a depth of 5 ft bgs by Gallup personnel. Area 3 and 4 excavations were overseen by a combination of Trihydro and Gallup personnel and extend to 7 and 13 ft bgs, respectively.

Upon completion of the October 2009 excavating and confirmation sampling, the original *Railroad Rack Lagoon Overflow Ditch and Fan-Out Area, SWMU No. 8 Subsurface Investigation Final Report, Western Refining Company, Gallup Refinery, Gallup, New Mexico,* dated January 6, 2010, was submitted to NMED. NMED issued a *Notice of Disapproval, Railroad Rack Lagoon Overflow Ditch and Fan-Out Area, SWMU No. 8 Subsurface Investigation Final Report, Western Refining Company Southwest, Inc., Gallup Refinery, EPA ID # NMD000333211, HWB-WRG-10-002* (NOD), on May 12, 2010. This correspondence is provided as Appendix G. The NOD contained 9 comments that NMED requested to have addressed prior to approving the Report. Western submitted a response to NMED's comments on June 23, 2010 explaining how Western planned to address each the comments in a revised final report. This correspondence, titled *Re: NMED's Notice of Disapproval, Railroad Rack Lagoon Overflow Ditch and Fan-Out Area, SWMU No. 8 Subsurface Investigation Final Report, Western Refining Company Southwest, Inc., Gallup Refinery, EPA ID # NMD000333211, HWB-WRG-10-002* is provided as Appendix H. Western also had to request an extension for the submittal of the revised Report while waiting for NMED to respond to the June 23, 2010 correspondence. The extension request is included as Appendix I. In a correspondence titled, *Direction for Additional Soil Confirmation Sample Collection and Approval of Extension Request, Railroad Rack Lagoon Overflow Ditch and Fan-Out Area, SWMU No. 8 Subsurface Investigation Final Report, Western Refining Company Southwest, Inc., Gallup Refinery, EPA ID # NMD000333211, HWB-WRG-10-002,* dated July 28, 2010, NMED expressed dissatisfaction with the confirmation sampling density and requested that Western collect 11 additional confirmation samples at NMED-proposed locations. This correspondence is provided as Appendix J. Western agreed to collect the additional 11 confirmation samples in a correspondence dated August 9, 2010 which is provided as Appendix K. These samples were collected on August 23 and 25, 2010. Sample results for each of the 11 final confirmation samples were below the NMED cleanup standard of 890 mg/kg. Therefore, no additional excavation was required. This report has been revised to include the results of the additional confirmation samples.

4.0 FIELD INVESTIGATION METHODOLOGY

Excavation and confirmation sampling activities began in March 2009 and continued through August 2010. The surface conditions, subsurface conditions, investigation methodologies, and the disposal of investigation derived waste are described in the following subsections.

4.1 SURFACE CONDITIONS

The surface topography of the investigation area is relatively flat with the Fan-out area being generally surrounded by earthen berms approximately 2-3 ft high. Vegetation at the site is sparse and consists mainly of sagebrush and natural grasses. The Railroad Rack Lagoon and Fan-out Areas are located on land owned and controlled by Gallup. The industrial property boundaries are shown on Figure 1.

4.2 SUBSURFACE CONDITIONS

As shown in the test pit and borehole logs, lithology in the excavations and boreholes installed since the October 2006 Subsurface Investigation did not differ significantly from the lithology described in the October 2006 Subsurface Investigation Report. Lithology was generally composed of silts and clays with the higher percentages of silts at shallower depths and higher percentages of clays at deeper depths. A moist to wet 0.75-inch layer of sand was noted at 22 ft bgs at Borehole B8-NEW-SE-S1; however, groundwater was not encountered during any of the field events. Test pit and borehole logs are presented as Appendices A and C, respectively.

A low density, black, asphalt-like material was identified during the October 2006 Subsurface Investigation and described in the October 2006 Subsurface Investigation Report. This material was noted on the surface around and in Test Pits B-1 and B-6 during the October 2006 Subsurface Investigation but was not seen in the subsequent events. However, a trace of black staining following the fractures in the silt and clay was noted in both the B-8 and B-9 excavations. Sample B8-EXTRA was collected from the southeast side of the original B-8 excavation at a depth of 2 ft bgs to characterize the stained soil. Laboratory analysis showed DRO concentrations of 140 mg/kg, which is below the DRO cleanup standard of 890 mg/kg.

Potentially impacted soil exhibiting dark staining and a hydrocarbon odor was identified during June 2009 by Gallup personnel in the western portion of Area 4 (see Figure 5). Visually impacted soil was removed and confirmation

samples CS-29, CS-30, CS-31, A-1, A-2, and A-3 were collected by Gallup personnel to verify that the DRO impacted soil had been removed. These samples all showed DRO concentrations below the cleanup standard of 890 mg/kg.

4.3 SOIL INVESTIGATION METHODOLOGY

Investigation methodologies varied for DRO delineation and excavation/confirmation sampling activities. Section 4.3.1 describes methodologies used for DRO contamination delineation and Section 4.3.2 details the excavation and confirmation sampling methodologies.

4.3.1 DELINEATION INVESTIGATION METHODOLOGY

Since the October 2006 Subsurface Investigation Report was submitted, three field events were conducted in May, August, and December 2007 to help delineate the extent of DRO contamination. A summary of these events is provided in Section 3.1. The investigation methodologies implemented during these three events are discussed below.

4.3.1.1 DELINEATION SAMPLE LOCATIONS

The original ten October 2006 Subsurface Investigation test pit/sample locations were selected based on the sample locations from the RFI in 1992. These locations were submitted to the NMED for approval in the soil sampling work plan submitted on August 29, 2006. Two sample locations were modified at the NMED's request. The sample locations were located in the field by Trihydro using the Overflow Ditch and the berms of the Fan-out Area as measurement reference points. The locations were staked and labeled with the applicable sample identification. Photographs of the staked locations are presented in the October 2006 Subsurface Investigation Report. Figure 3 illustrates the approximately measured dimensions of the Overflow Ditch, the Fan-out Area, and the test pit/sample locations.

The sampling locations in these three delineation sampling events (May, August, and December 2007) were determined based on the exceedances identified during the preceding sampling events. These locations are illustrated on Figures 5 and 6. Sample locations were located in the field and staked by Trihydro personnel. The stakes from each of the previous sampling events remained in the ground (as the excavation allowed) and were used as measurement reference points.

4.3.1.2 DELINEATION SOIL SAMPLING PROCEDURES

Information pertaining to soil sample collection including but not limited to, the sampler, the date, time, and depth that the sample was collected, and whether or not duplicate samples were collected is included on the soil sample forms and borehole logs included as Appendices B and C, respectively. Soil samples were transferred directly from the decontaminated sampling device to clean 4-ounce jars provided by the laboratory. The sample containers were completely filled to minimize headspace (by tamping during filling) and immediately sealed. Sample containers were immediately labeled and stored on ice until each day's sampling was complete. The samples were then hand delivered or shipped to Hall Environmental for DRO analysis. A chain-of-custody (CoC) was completed by Trihydro personnel. Copies of the CoCs are included along with the laboratory analytical reports in Appendix D. Samples were analyzed by Hall Environmental located in Albuquerque, NM. Samples collected after the October 2006 Subsurface Investigation were only analyzed for DRO by method 8015B. The only preservation requirement specified by Hall Environmental is to cool the samples to 4 degrees Celsius or less.

The sampling techniques varied for each of the three 2007 delineation events. During the May 2007 event, small excavations were installed in the locations of the original B-8 and B-9 test pits. Soil samples were collected utilizing a decontaminated trowel and a manual GeoProbe. DRO contaminated soil associated with Test Pit B-9 was delineated and excavated during this event as described in Section 6. However, the May 2007 event did not successfully delineate the DRO contamination associated with Test Pit B-8.

During the August 2007 event, additional soil samples were collected in the vicinity of Test Pit B-8 using the manual GeoProbe. No additional excavating was conducted during this event. The August 2007 event did not fully delineate the B-8 DRO contamination both horizontally and vertically.

To allow for deeper sample collection, Rodgers and Co. Drilling of Albuquerque, NM was contracted to assist with soil sample collection utilizing hollow-stem auger drilling techniques with a CME 75 drill rig. During the December 2007 event, soil samples were collected from decontaminated split spoons. Hollow-stem augers were advanced to the depth directly above the desired sample interval. The decontaminated split spoon sampling device was then hammered through the desired sample interval. Samples were collected directly from the split spoon as soon as it was retrieved. The data obtained during the December 2007 event suggested that the DRO contamination associated with Test Pit B-8 was delineated both horizontally and vertically. Excavation plans proceeded accordingly. Test Pit B-8 sample locations from these three delineation events are illustrated on Figure 5.

4.3.2 EXCAVATION AND CONFIRMATION SAMPLING METHODOLOGY

Excavation and confirmation sampling methodologies were performed in accordance with the 2008 Excavation Work Plan and NMED's approval with direction. Excavation and confirmation sampling activities took place between the months of March 2009 and August 2010.

4.3.2.1 CONFIRMATION SAMPLE LOCATIONS

A total of ten sidewall and base confirmation sample locations were proposed in the 2008 Excavation Work Plan. Three additional locations were added at the suggestion of NMED in the December 11, 2008 Approval with Direction letter provided as Appendix F. These 13 locations, designated CS-1 through CS-13, were strategically located in areas where DRO delineation data was limited in an attempt to fill potential data gaps. Of the 13 approved confirmation sampling locations, 3 exceeded the DRO cleanup standard (CS-2, CS-4, and CS-8) prompting expansion of the excavation. As the excavation was expanded, additional confirmation samples were collected to verify that DRO contaminated soil had been removed. Excavation expansion and confirmation sampling took place from March 2009 through August 2010 continuing until each of the deepest (vertical) and outermost (horizontal) confirmation samples showed DRO concentrations below the 890 mg/kg cleanup standard. By the completion of the August 2010 event, a total of 44 confirmation samples had been collected. The locations of the final confirmation samples are shown on Figure 7. Final confirmation sample analytical results from these events are summarized in Table 2.

4.3.2.2 CONFIRMATION SOIL SAMPLING PROCEDURES

The basic soil sampling procedures used to collect delineation soil samples were utilized for confirmation sampling. These are discussed in detail in Section 4.3.1.2. Soil sample forms are included as Appendix B. Depending on location accessibility, samples were collected using a trowel, hand auger, or bucket of the excavator. If samples were collected from the excavator bucket, care was taken to obtain soil that did not come in contact with the excavator bucket.

4.3.3 FIELD SCREENING

As requested by NMED, field screening was to be performed at each confirmation sampling location and any other location that may be contaminated based on visual observations. During the October 2006 Subsurface Investigation, sample intervals were field screened for TOVs using a MiniRae 2000 photoionization detector (PID). Based on the PID readings recorded during this event, it became evident that a PID is not capable of detecting the DRO contamination in the Fan-out Area. Therefore, a PID was not used during the subsequent sampling events and Gallup

purchased a Magnetic Particle Immunoassay Rapid Assay Kit to field screen during confirmation sampling activities. However, comparisons between laboratory data and preliminary field screening results showed limited correlation. In addition, field screening equipment malfunctions were experienced. NMED was verbally contacted on May 13, 2009 to discuss these issues. As a result, NMED permitted Gallup to proceed with the excavation utilizing visual observations and confirmation sampling results in lieu of field screening to determine whether or not DRO contaminated soil has been removed.

4.3.4 FIELD DOCUMENTATION AND LOGGING

A qualified geologist was on site to log test pits and boreholes during the delineation activities. The logs were completed according to the work plan specifications. Test pit and borehole logs are included as Appendices A and C, respectively. Upon completion of delineation activities, the qualified geologist determined that the lithology of the area had been sufficiently characterized and additional lithologic logging would not be required. Information pertaining to sample collection (delineation and confirmation samples) was recorded on sample forms and borehole logs provided as Appendices B and C, respectively.

Photographs were also used to document field activities. Photographs of site conditions, sample locations, sampling activities, soil samples, and excavation activities were taken as necessary. Applicable photographs, along with a photo log that provides a description of each photograph, are included as Appendix L.

4.3.5 EQUIPMENT DECONTAMINATION PROCEDURES

Sampling equipment that had the potential to come in contact with the soil samples was decontaminated before sampling commenced and after each sample was collected. This includes trowels, augers, the cutting shoe of the manual GeoProbe, and the split spoon sampling device used with the hollow-stem auger drill rig. The sampling devices were decontaminated using a non-phosphate detergent solution followed by two distilled water rinses. Prior to use, the equipment was either air-dried or dried with clean paper towels. Decontaminated sampling devices were stored in a contaminant-free location until use.

4.4 INVESTIGATION DERIVED WASTE

Excavated soils and soil cuttings produced during sampling events have been transported to Gallup's Land Farm as permitted by OCD. Other wastes associated with sampling, including personal protective equipment (PPE), rinse water from decontamination, and other sampling-associated disposables were disposed of appropriately at the refinery.

5.0 REGULATORY CRITERIA

After receiving the results from the October 2006 Subsurface Investigation, it was determined that the contaminant of concern in the Fan-out Area was DRO. The NMED-approved cleanup standard for DRO was originally 200 mg/kg (from "Unknown oil" on Table 2a of NMED's TPH Screening Guidelines for Potable Groundwater (GW-1)). However, in a correspondence with Gallup personnel in March 2007, NMED agreed to adjust the DRO cleanup level to 890 mg/kg (from "#3 and #6 fuel oil" on Table 2a of NMED's TPH Screening Guidelines for Potable Groundwater (GW-1)). The cleanup standards are included as Appendix M. The only areas discovered during the October 2006 Subsurface Investigation that contained soils with DRO concentrations exceeding the 890 mg/kg cleanup standard were Test Pits B-8 and B-9. Accordingly, delineation and excavation efforts were focused on these two areas as described in Sections 3 and 4 of this report.

6.0 SOIL SAMPLING ANALYTICAL RESULTS

Analytical results of the soils samples collected near Test Pits B-8 and B-9 are discussed below. Quality Assurance and Quality Control procedures were verified through the data validation process which is detailed in Section 6.3.

6.1 TEST PIT B-9

The final Test Pit B-9 excavation measures approximately 6 feet in length (N-S) by 4 feet in width (E-W) and extends to approximately 5 ft bgs. Samples collected from each corner of the excavation at depths of 3 ft bgs and the center of the excavation at a depth of 5 ft bgs showed DRO concentrations below the cleanup standard. Figure 6 illustrates the sample locations and results. Base and sidewall samples are illustrated on Figure 6 in magenta and orange, respectively. A summary of the analytical data obtained from each of the delineation and confirmation sampling events is provided as Table 1. Final confirmation sample results are summarized in Table 2. These analytical results show that soils exceeding the DRO cleanup standard have been excavated from the vicinity of Test Pit B-9.

6.2 TEST PIT B-8

Over 110 soil samples have been collected and analyzed in the vicinity of Test Pit B-8 to verify that DRO contaminated soil exceeding the cleanup standard has been removed. As delineation efforts identified DRO cleanup standard exceedances, the size of the excavation was increased horizontally and/or vertically in the direction of the exceedance, and additional confirmation samples were collected. This process was repeated until the outermost (horizontal) and deepest (vertical) sample locations showed DRO concentrations below the cleanup standard. As illustrated on Figure 7, between delineation and confirmation sampling activities, a total of 44 soil samples showing DRO concentrations below the cleanup standard surround the area that has been excavated. Base and sidewall samples are illustrated on Figure 7 in magenta and orange, respectively. Some samples, for example CS-14, can be considered both base and sidewall samples. CS-14 was collected at 7 ft bgs on the corner of Areas 3 and 4. With respect to Area 3, this is a base sample; with respect to Area 4, this is a sidewall sample. These “base/sidewall” samples are illustrated on Figure 7 in cyan. These analytical results show that soils exceeding the DRO cleanup standard have been excavated from the vicinity of Test Pit B-8. A summary of final confirmation sample analytical data is provided as Table 2.

Laboratory analytical reports for delineation and confirmation sampling events occurring subsequent to the submittal of the October 2006 Subsurface Investigation Report are provided in Appendix D.

6.3 QUALITY ASSURANCE/QUALITY CONTROL PROTOCOL

Analytical data were validated through National Functional Guideline Tier I and Tier II data validation standards. Trihydro Tier II laboratory data validations were performed on the soil sampling data from Hall Environmental Analysis Laboratory, Inc. to determine method compliance, completeness, precision, and accuracy. This data review covered the following 15 data sets: laboratory identification numbers 0705313, 0705361, 0706077, 0708284, 0708324, 0712257, 0903342, 0904327, 0904388, 0905343, 0906074, 0907447, 0910112, 1008920, and 1008A31. Data validation reports are provided with the laboratory analytical reports in Appendix D.

The CoC records and analytical reports were reviewed as part of the data validation process. Samples were analyzed in accordance with the CoCs. The CoC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.

Preservation of samples is assessed by reviewing holding time and receipt temperatures. Preservation is important in preventing volatilization of samples. Three DRO data points were qualified as estimated values, one DRO point was rejected (R), and four motor oil range organics (MRO) data points were rejected (R) for high sample receipt temperatures and analysis past holding time. The rejected DRO datum was not re-sampled because additional data were collected at more extensive horizontal and vertical locations. The sample locations from which MRO data were rejected were not re-sampled because the MRO is not a contaminant of concern based on the October 2006 Subsurface Investigation.

Data validations performed were evaluated in general accordance with validation criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-07-003, July 2007 or the USEPA CLP National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-08-01, June 2008 with additional reference to USEPA CLP National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999. Review of duplicates is conducted in accordance with USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.

Field and laboratory blanks are used to assess accuracy in the field and in the laboratory. Method blank detections were not reported in any of the data sets with the exception of cyanide in data set 0610228. The method blank was only associated with the equipment blank and the associated result was non-detect. Therefore, evidence of cross

contamination was not present in the laboratory. There were no detections of target analytes in the trip blank or equipment blanks samples.

Ten blind duplicates were collected and analyzed with these data sets to assess field and laboratory precision by measuring the relative percent difference (RPD) between sample results. The duplicate samples were collected from B-8 Center (BD5212007), B8_8_20_E_3 (BD082007), B8_12_17_I1_3 (BD_12_17_07), CS-8 (BD042109), CS-19 (BD), CS-21 (BD051909), CS-23 (BD), CS-26 (BD-072309), CS-38 (BD1), and CS-33 (BD2). The calculated RPD values were below the limit of 50% for soil indicating acceptable precision with one exception. The field duplicate RPD value for DRO was 74.3% for the duplicate pair from sample B8_8_20_E_3. As a result, DRO was qualified in the parent and duplicate samples to indicate possible poor repeatability.

Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) and matrix spike/matrix spike duplicate (MS/MSD) data are used to access sample bias (accuracy) as a result of instrumentation or matrix effect, respectively. These data can also be used to assess laboratory precision as a result of instrumentation or matrix effect. A total of 77 data points were qualified or "flagged" as a result of non-conformances with the MS/MSD recoveries or RPD values. Of these 77 points, 53 were for DRO and 24 were for MRO data points.

The data met acceptance levels of precision, accuracy, and completeness. The data sets were complete with the exception of data set 0706077 in which five total data points (one DRO) were rejected as a result of the combination of high sample temperatures and analysis past seven days. Data qualification flag of J indicates an estimated quantified (i.e., detected) value and a UJ indicates an estimated result for non-quantified (i.e., non-detect) values. A data point that is flagged J or UJ indicates that the possible presence or absence of the analyte could be verified at an approximated value; therefore, estimated data is valid for use. Data which are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R, the data may be used for site evaluation, with the reasons for qualification being given consideration when interpreting sample concentrations. Data points which are assigned an R qualifier should not be used for any site evaluation purposes.

7.0 CONCLUSIONS

Based on the October 2006 Subsurface Investigation, DRO remained the only contaminant of concern exceeding NMED cleanup standards in the Overflow Ditch and Fan-out Area. Two locations, Test Pits B-8 and B-9, were identified where DRO concentrations exceeded NMED's cleanup standard.

A rectangular excavation measuring approximately 4 feet wide by 6 feet long by 5 feet deep was installed at the location of Test Pit B-9. Approximately 3 cubic yards of soil were excavated from the B-9 area and transported to Gallup's Northeast Landfarm as permitted by OCD. As shown on Figure 6, five samples were collected from the outermost extents of this excavation. Each of these samples showed DRO concentrations below the cleanup standard.

The final excavation installed in the vicinity of Test Pit B-8 is illustrated on Figures 5 and 7. Approximately 784 cubic yards of soil have been excavated from this area and transported to Gallup's Northeast Landfarm as permitted by OCD. A total of 44 soil samples showing DRO concentrations below the cleanup standard surround the excavated area.

As shown by the analytical data, DRO contaminated soil exceeding NMED's cleanup standard has been excavated from the vicinity of Test Pits B-8 and B-9. Soils removed from both excavations have been transported to Gallup's Land Farm as permitted by OCD. The excavations currently remain open as Gallup is awaiting NMED's approval of this report prior to backfilling the excavations with clean backfill material. Upon NMED approval, Gallup intends to backfill the excavations in a timely manner. Once backfilled, Gallup believes that no further remediation activities need to be conducted in the Overflow Ditch and Fan-out Area.

TABLES

TABLE 1. DRO ANALYTICAL DATA SUMMARY
RAILROAD RACK LAGOON OVERFLOW DITCH AND FAN-OUT AREA
WESTERN REFINING COMPANY, GALLUP REFINERY, GALLUP, NEW MEXICO

Date	Sample ID	Depth (ft bgs)	Laboratory Result (mg/kg)
10/17/2006	B-7	2	360
10/18/2006	B-7	5	ND(10)
5/21/2007	B-8SW	3	88
5/21/2007	B-8SE	3	650
5/21/2007	B-8Center	3	1300*
10/17/2006	B-8Center	5	43
5/23/2007	B-8Extra	2	140
5/21/2007	B-8NW	3	610
5/21/2007	B-8NE	3	1300
8/20/2007	B-8NE	5	2200(J)
5/23/2007	B-8NEW-NW	3	130
5/23/2007	B-8NEW-NW	5	310
5/23/2007	B-8NEW-NE	3	130
5/23/2007	B-8NEW-NE	5	11
5/23/2007	B-8NEW-SE (aka "A")	3	5800
5/23/2007	B-8NEW-SE (aka "A")	5	5000
8/20/2007	B-8NEW-SE (aka "A")	7	5500(J)
8/20/2007	B-8NEW-SE (aka "A")	9	19000(J)
5/23/2007	B-8NEW-SE-S1 (aka "B")	3	9300(J)
5/23/2007	B-8NEW-SE-S1 (aka "B")	5	1300(J)
8/20/2007	B-8NEW-SE-S1 (aka "B")	7	2600(J)
12/17/2007	B-8NEW-SE-S1 (aka "B")	8	ND(10)
8/20/2007	B-8NEW-SE-S1 (aka "B")	9	ND(10)(UJ)
12/17/2007	B-8NEW-SE-S1 (aka "B")	13	ND(10)
12/17/2007	B-8NEW-SE-S1 (aka "B")	18	ND(10)
12/17/2007	B-8NEW-SE-S1 (aka "B")	23	ND(10)
5/23/2007	B-8NEW-SE-S2	3	1300(J)
5/23/2007	B-8NEW-SE-S2	5	ND(10)(R)
5/21/2007	B-9Center	3	2600
5/23/2007	B-9NEW-Center	5	150
5/21/2007	B-9SE	3	210
5/21/2007	B-9SW	3	210
5/21/2007	B-9NE	3	200
5/21/2007	B-9NW	3	130

Date	Sample ID	Depth (ft bgs)	Laboratory Result (mg/kg)
8/20/2007	C	3	3400(J)
8/20/2007	C	5	660(J)
8/20/2007	D	3	77(J)
8/20/2007	D	5	150(J)
8/20/2007	E	3	2200(J)
8/20/2007	E	5	ND(10)(UJ)
8/20/2007	F	3	3500(J)
8/20/2007	F	5	ND(10)(UJ)
8/20/2007	G	3	440(J)
8/21/2007	H	3	3100(J)
8/21/2007	H	5	ND(10)(UJ)
8/21/2007	I	3	8600(J)
8/21/2007	I	5	ND(10)(UJ)
8/21/2007	J	3	250(J)
8/21/2007	J	5	ND(10)(UJ)
8/20/2007	K	3	4700(J)
8/20/2007	K	5	ND(10)(UJ)
8/21/2007	L	3	42(J)
8/21/2007	L	5	71(J)
8/20/2007	M	3	4000(J)
8/20/2007	M	5	ND(10)(UJ)
12/17/2007	K-1	3	ND(10)(UJ)
12/17/2007	K-1	8	ND(10)
12/17/2007	K-1	13	ND(10)(UJ)
12/17/2007	G-1	3	ND(10)
12/17/2007	G-1	8	ND(10)(UJ)
12/17/2007	G-1	13	ND(10)
12/17/2007	I-1	3	ND(10)(UJ)
12/17/2007	I-1	8	ND(10)(UJ)
12/17/2007	I-1	13	ND(10)(UJ)
12/17/2007	M-1	3	ND(10)
12/17/2007	M-1	8	ND(10)
12/17/2007	M-1	13	ND(10)

Date	Sample ID	Depth (ft bgs)	Laboratory Result (mg/kg)
3/17/2009	CS-1	13	320
3/17/2009	CS-2	9	11000
3/18/2009	CS-3	5	320
3/18/2009	CS-4	4	6000
4/22/2009	CS-5	3	34
3/18/2009	CS-6	3	ND(10)
4/22/2009	CS-7	3	400
4/21/2009	CS-8	3	6100(J)
3/18/2009	CS-9	3	ND(10)
4/22/2009	CS-10	3	24
4/22/2009	CS-11	3	380
4/22/2009	CS-12	3	490
4/23/2009	CS-13	3	ND(10)
4/21/2009	CS-14	7	130(J)
4/21/2009	CS-15	3.5	5000(J)
4/22/2009	CS-16	13	ND(10)
4/21/2009	CS-17	9	73
4/22/2009	CS-18	3	330
4/23/2009	CS-19	3	1700*
5/19/2009	CS-20	3.5	13000
5/19/2009	CS-21	3.5	3000
6/3/2009	CS-22	7	170(J)
6/3/2009	CS-23	3	ND(10)(UJ)
6/3/2009	CS-24	3	ND(10)(UJ)
7/23/2009	CS-25	10	6800(J)
7/23/2009	CS-26	10	17000(J)
7/23/2009	CS-27	10	1800(J)
7/23/2009	CS-28	5	110(J)
10/1/2009	CS-29	5	ND(10)
10/1/2009	CS-30	5	ND(10)
10/1/2009	CS-31	5	150
10/2/2009	A-1	13	ND(10)
10/2/2009	A-2	13	ND(10)
10/2/2009	A-3	13	ND(10)
8/23/2010	CS-32	2.5	55
8/23/2010	CS-33	5	58
8/23/2010	CS-34	5	ND(10)
8/25/2010	CS-35	13	ND(10)
8/23/2010	CS-36	7	21
8/23/2010	CS-37	2.5	36
8/23/2010	CS-38	7	ND(10)
8/23/2010	CS-39	5	ND(10)
8/23/2010	CS-40	5	ND(10)
8/23/2010	CS-41	2.5	210
8/23/2010	CS-42	2.5	21

Notes:
Results exceeding the NMED DRO Cleanup Standard of 890 mg/kg are shown in red.
ND(10)(UJ): Nondetect (limit)(Data Validation Qualifier).
*Blind duplicate result used since it was the most conservative.
J = Estimated concentration.
UJ = Estimated reporting limit.
R = rejected data.

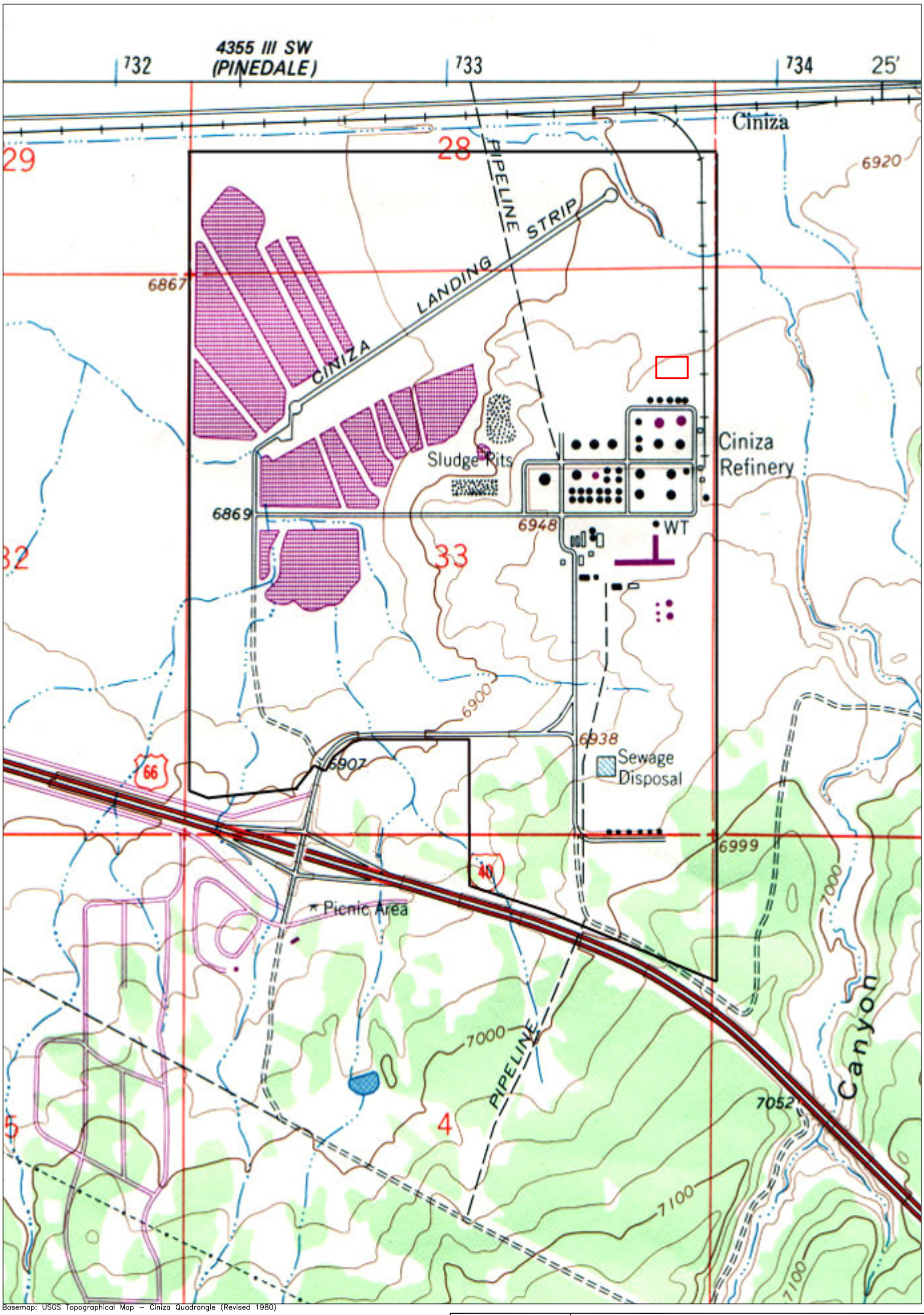
TABLE 2. FINAL CONFIRMATION SAMPLE ANALYTICAL DATA SUMMARY
RAILROAD RACK LAGOON OVERFLOW DITCH AND FAN-OUT AREA
WESTERN REFINING COMPANY, GALLUP REFINERY, GALLUP, NEW MEXICO

Excavation B-8				
Date	**Sample ID**	**Base Sample/ Sidewall Sample (Area)**	**Depth (ft bgs)**	**Laboratory DRO Result (mg/kg)**
10/18/2006	B-7	BS (Area 2)	5	ND(10)
10/17/2006	B-8Center	SS (Area 4)	5	43
5/23/2007	B-8NEW-NW	BS (Area 1); SS (Area 2)	3	130
5/23/2007	B-8NEW-NW	BS (Area 2)	5	310
5/23/2007	B-8NEW-NE	BS (Area 1)	3	130
12/17/2007	B-8NEW-SE-S1 (aka "B")	BS (Area 4)	13	ND(10)
8/20/2007	E	SS (Area 4)	5	ND(10)(UJ)
8/21/2007	J	BS (Area 1); SS (Area 2)	3	250(J)
8/21/2007	J	BS (Area 2)	5	ND(10)(UJ)
8/20/2007	K	SS (Area 4)	5	ND(10)(UJ)
8/21/2007	L	BS (Area 1)	3	42(J)
8/20/2007	M	SS (Area 3); SS (Area 4)	5	ND(10)(UJ)
12/17/2007	K-1	BS (Area 1)	3	ND(10)(UJ)
12/17/2007	G-1	BS (Area 1)	3	ND(10)
12/17/2007	I-1	BS (Area 1)	3	ND(10)(UJ)
12/17/2007	M-1	BS (Area 1)	3	ND(10)
3/17/2009	CS-1	BS (Area 4)	13	320
4/22/2009	CS-5	BS (Area 1)	3	34
3/18/2009	CS-6	BS (Area 1)	3	ND(10)
4/22/2009	CS-7	BS (Area 1)	3	400
3/18/2009	CS-9	BS (Area 1)	3	ND(10)
4/22/2009	CS-10	BS (Area 1)	3	24
4/22/2009	CS-11	BS (Area 1)	3	380
4/22/2009	CS-12	BS (Area 1)	3	490
4/23/2009	CS-13	BS (Area 1)	3	ND(10)
4/21/2009	CS-14	BS (Area 3); SS (Area 4)	7	130(J)
4/22/2009	CS-16	BS (Area 4)	13	ND(10)
10/1/2009	CS-29	BS (Area 2)	5	ND(10)
10/1/2009	CS-30	BS (Area 2)	5	ND(10)
10/1/2009	CS-31	BS (Area 2)	5	150
10/2/2009	A-1	BS (Area 4)	13	ND(10)
10/2/2009	A-2	BS (Area 4)	13	ND(10)
10/2/2009	A-3	BS (Area 4)	13	ND(10)
8/23/2010	CS-32	SS (Area 2)	2.5	55
8/23/2010	CS-33	BS (Area 2)	5	58
8/23/2010	CS-34	BS (Area 2)	5	ND(10)
8/25/2010	CS-35	BS (Area 4)	13	ND(10)
8/23/2010	CS-36	BS (Area 3)	7	21
8/23/2010	CS-37	SS (Area 2)	2.5	36
8/23/2010	CS-38	BS (Area 3)	7	ND(10)
8/23/2010	CS-39	BS (Area 2)	5	ND(10)
8/23/2010	CS-40	BS (Area 2)	5	ND(10)
8/23/2010	CS-41	SS (Area 2)	2.5	210
8/23/2010	CS-42	SS (Area 2)	2.5	21

Excavation B-9				
Date	**Sample ID**	**Base Sample/ Sidewall Sample (Area)**	**Depth (ft bgs)**	**Laboratory Result (mg/kg)**
5/23/2007	B-9NEW-Center	BS (B9 Excavation)	5	150
5/21/2007	B-9SE	SS (B9 Excavation)	3	210
5/21/2007	B-9SW	SS (Excavation)	3	210
5/21/2007	B-9NE	SS (Excavation)	3	200
5/21/2007	B-9NW	SS (Excavation)	3	130

Notes:
DRO = Diesel Range Organics
ND(10)(UJ): Nondetect (limit)(Data Validation Qualifier)
BS = Base Sample
SS = Sidewall Sample
J = Estimated concentration
UJ = Estimated reporting limit
ft bgs = feet below ground surface

FIGURES



Basemap: USGS Topographical Map – Ciniza Quadrangle (Revised 1980)

EXPLANATION

PROPERTY BOUNDARY

SOIL INVESTIGATION AREA

N

0 ~1,000'

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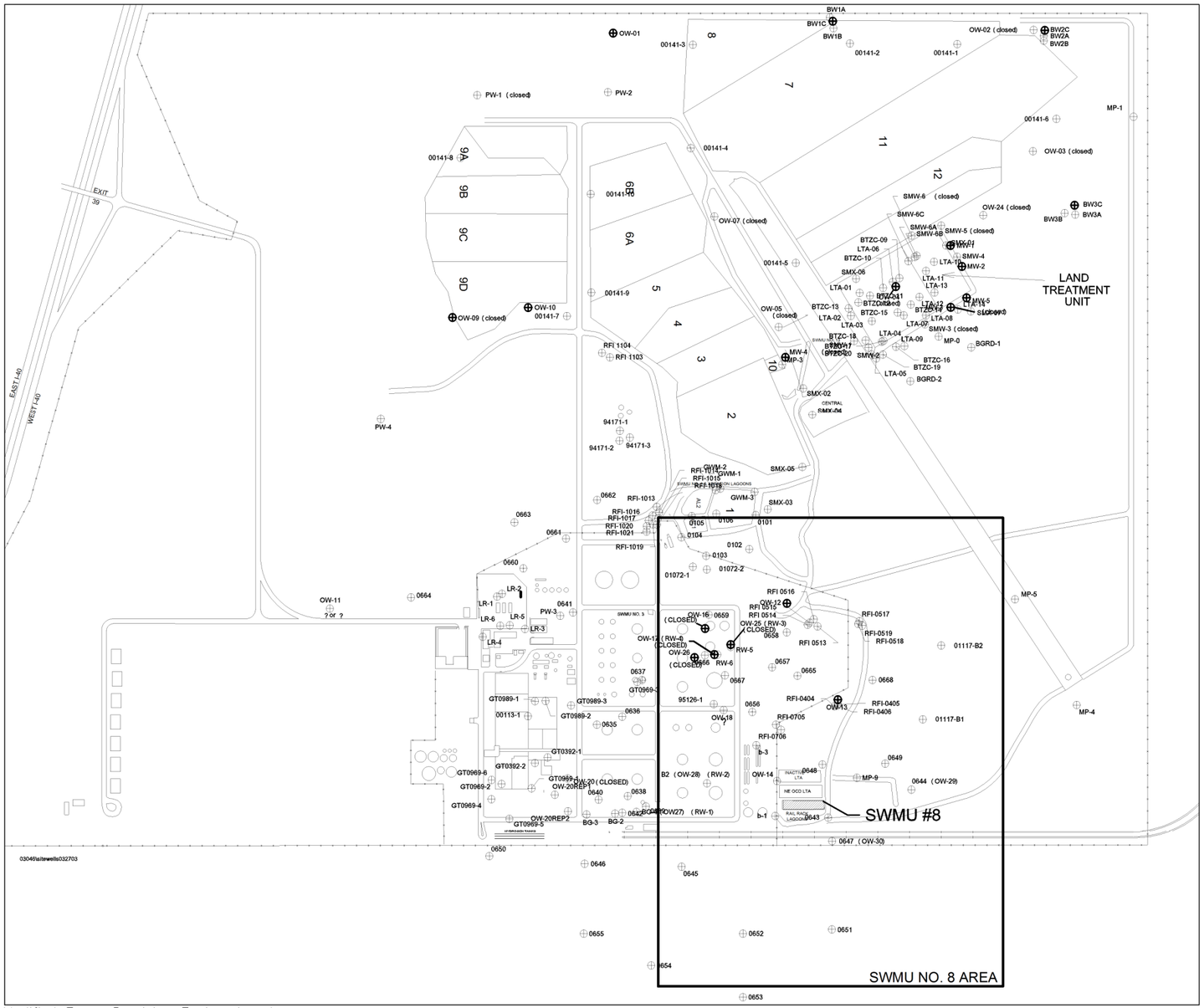
FIGURE 1

TOPOGRAPHIC MAP OF GALLUP REFINERY SITE

WESTERN REFINING
GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: REP	Checked By: RM	Scale: 1" = ~1,000'	Date: 12/28/09	File: 072TOPO-200912

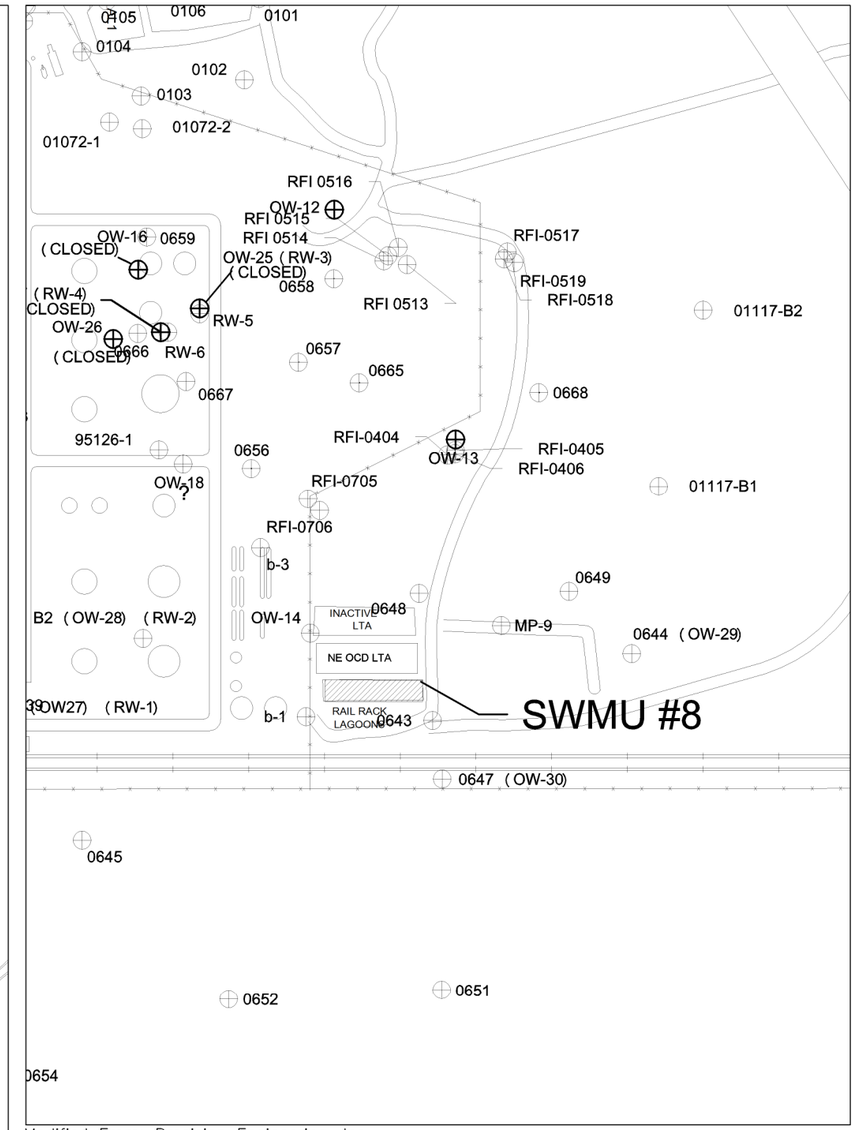


Modified From: Precision Engineering, Inc.

1 OVERALL PLAN VIEW
SCALE 1" = 800'

0 800'

N



Modified From: Precision Engineering, Inc.

2 SWMU NO. 8 AREA
SCALE 1" = 400'

0 400'

N

EXPLANATION

COLOR CODE:
SONSELA WELLS
CHINLE/ALLUVIUM INTERFACE WELLS
UPPER SAND WELLS
RAW WATER PRODUCTION WELL
ALL OTHER EXPLORATORY BORINGS

NOTE: CLOSED = ABANDONED

Well Locations Updated Through 12/18/06

NOTE:

BASE CADD FILE PROVIDED BY PRECISION ENGINEERING, DATED DECEMBER 18, 2006

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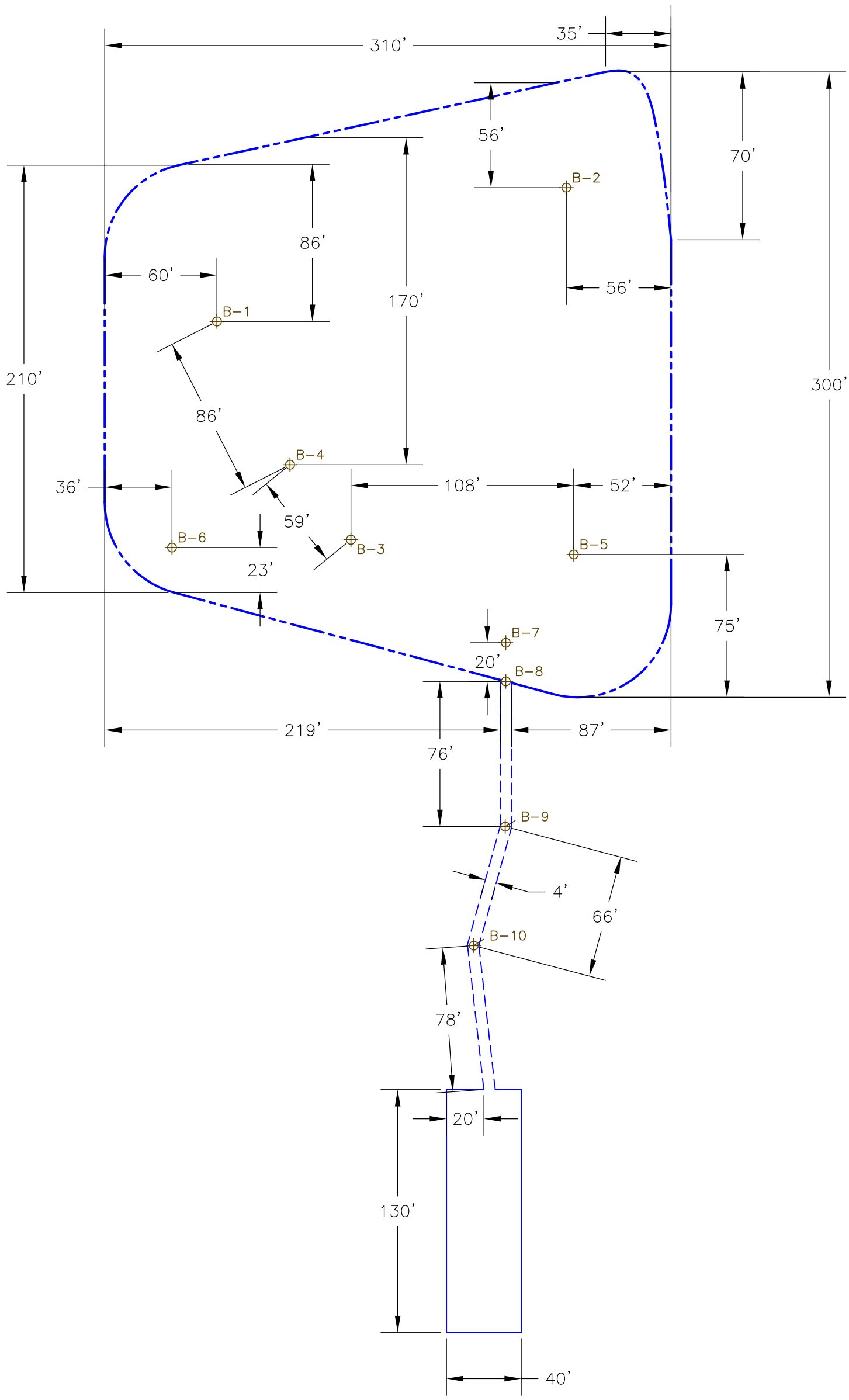
FIGURE 2

SWMU NO. 8 AND SURROUNDING WELLS

WESTERN REFINING
GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: SV	Checked By: RA	Scale: AS SHOWN	Date: 12/28/09	File: 072LOCSFROMOTHR



EXPLANATION

B-10 SOIL BORING LOCATION AND DESIGNATION

OUTFLOW DITCH

FAN-OUT AREA

RAIL ROAD RACK LAGOON

N

0 60'

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FIGURE 3

RAILROAD RACK LAGOON
OVERFLOW DITCH AND FAN-OUT AREA
SOIL SAMPLE LOCATIONS

WESTERN REFINING
GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: REP	Checked By: JE	Scale: 1" = 60'	Date: 12/28/09	File: 072RROVERFLOW200912

AREA 1
(EXCAVATED TO 3 FEET)

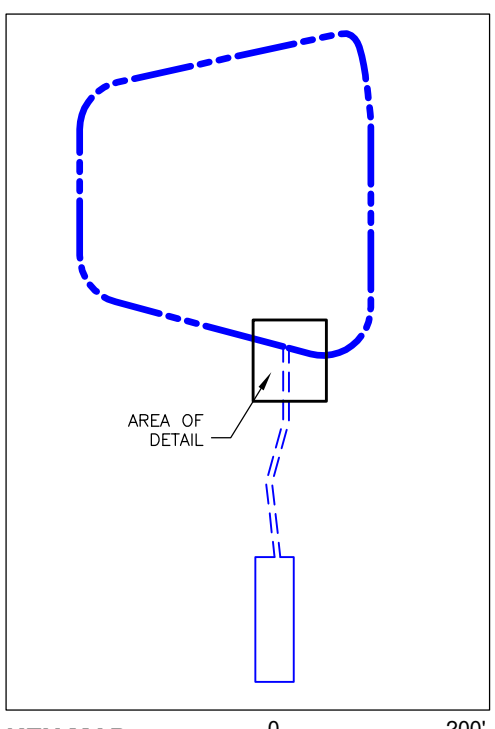
AREA 4
(EXCAVATED TO 13 FEET)

AREA 3
(EXCAVATED TO 7 FEET)

AREA 2
(EXCAVATED TO 5 FEET)

N

0 8'



KEY MAP

0 200'

N

EXPLANATION

- OUTFLOW DITCH
- FAN-OUT AREA
- RAILROAD RACK LAGOON
- ACTUAL EXCAVATION BOUNDARY
- PREVIOUSLY EXCAVATED AREA
- EXCAVATE TO 3 FEET - PROPOSED
- EXCAVATE TO 5 FEET - PROPOSED
- EXCAVATE TO 13 FEET - PROPOSED

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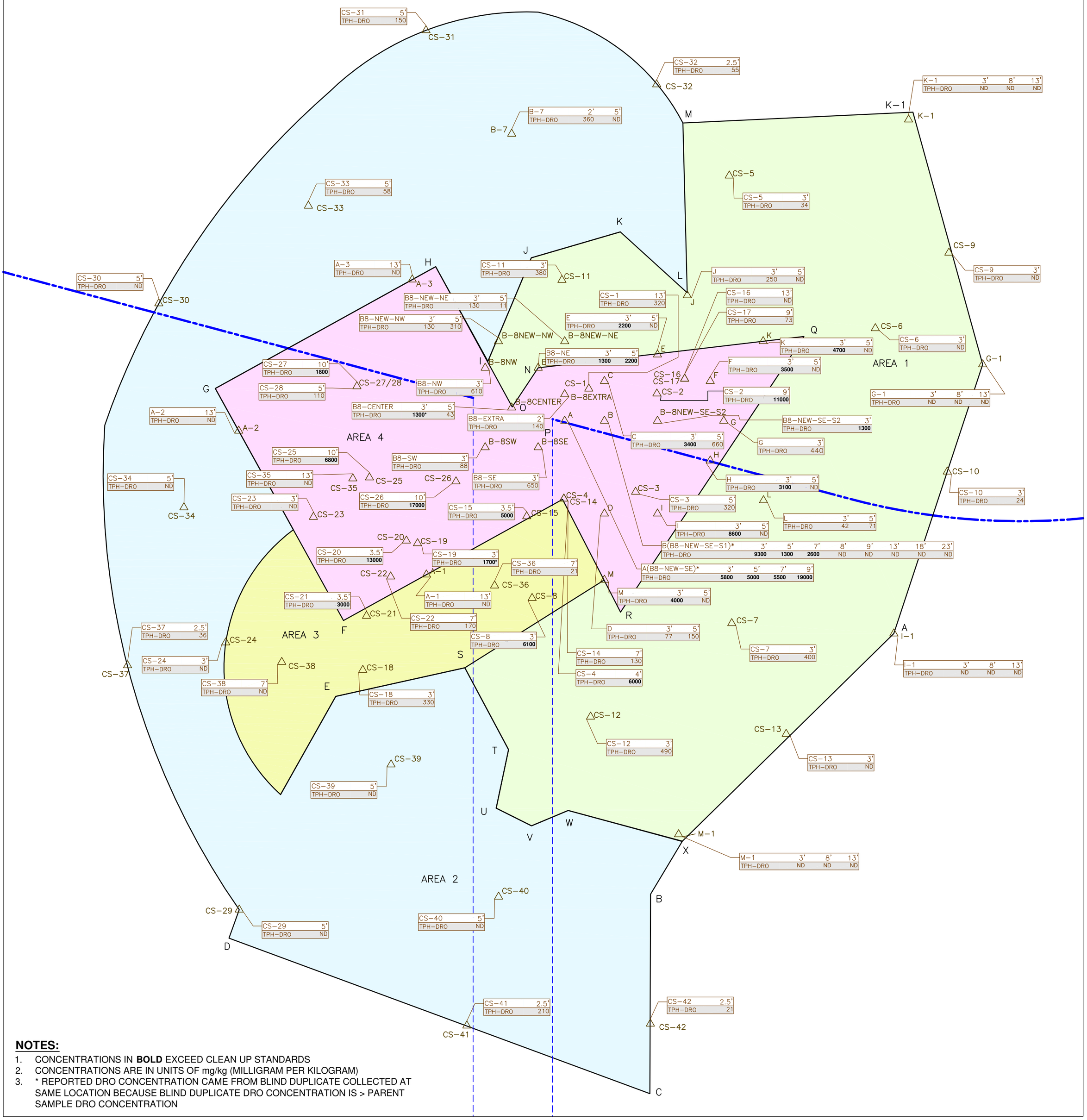
FIGURE 4

RAILROAD RACK LAGOON OVERFLOW DITCH PROPOSED AND ACTUAL EXCAVATION COMPARISON

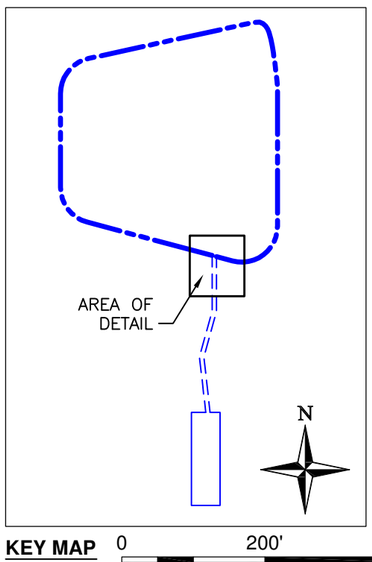
WESTERN REFINING GALLUP REFINERY GALLUP, NEW MEXICO

Drawn By: REP	Checked By: GP	Scale: AS SHOWN	Date: 12/21/09	File: 072SOILEXCAV200912



NOTES:

1. CONCENTRATIONS IN **BOLD** EXCEED CLEAN UP STANDARDS
2. CONCENTRATIONS ARE IN UNITS OF mg/kg (MILLIGRAM PER KILOGRAM)
3. * REPORTED DRO CONCENTRATION CAME FROM BLIND DUPLICATE COLLECTED AT SAME LOCATION BECAUSE BLIND DUPLICATE DRO CONCENTRATION IS > PARENT SAMPLE DRO CONCENTRATION



KEY MAP 0 200' 400'

EXPLANATION

- AREA 1 — EXCAVATED TO 3 FEET
- AREA 2 — EXCAVATED TO 5 FEET
- AREA 3 — EXCAVATED TO 7 FEET
- AREA 4 — EXCAVATED TO 13 FEET
- ACTUAL EXCAVATION BOUNDARY
- OUTFLOW DITCH
- FAN-OUT AREA
- RAILROAD RACK LAGOON
- ND — NON DETECT
- * — A(B8-NEW-SE) = MAY EVENT(AUGUST EVENT); B(B8-NEW-SE-S1) = MAY EVENT(AUGUST EVENT)
- △M-1 — SAMPLE LOCATION AND DESIGNATION

N

0 5' 10'

CONSTITUENT TABLE EXPLANATION

SAMPLE ID → M-1 3' 8' 13' ← SAMPLE DEPTH
TOTAL PETROLEUM HYDROCARBONS AS DIESEL RANGE ORGANICS → TPH-DRO ND ND ND ← CONCENTRATION

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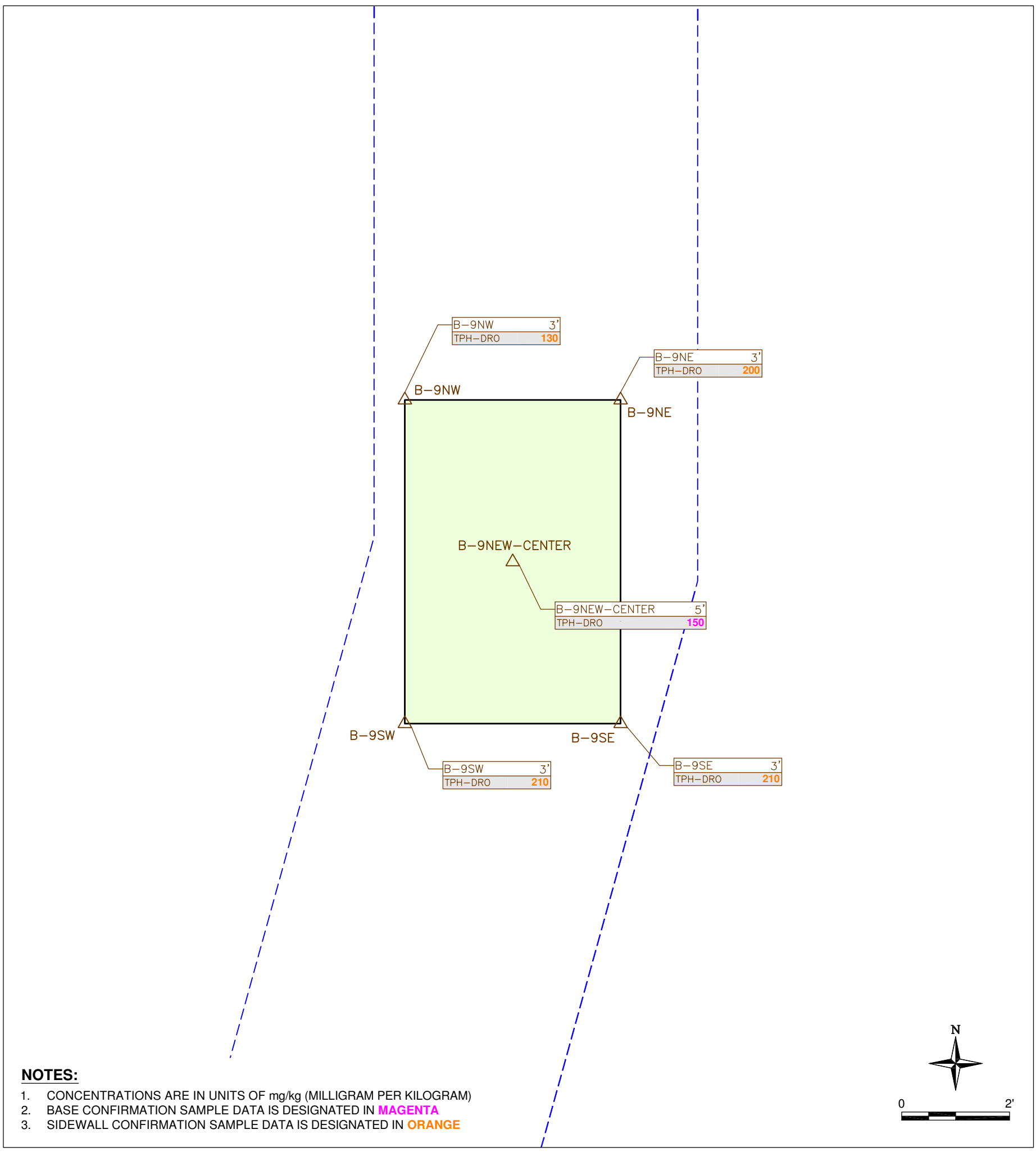
FIGURE 5

RAILROAD RACK LAGOON OVERFLOW DITCH B-8 FINAL EXCAVATION AREAS AND DRO RESULTS

WESTERN REFINING
GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: REP	Checked By: GP	Scale: AS SHOWN	Date: 8/30/2010	File: 697-SOIL-SAMPAREA-201008

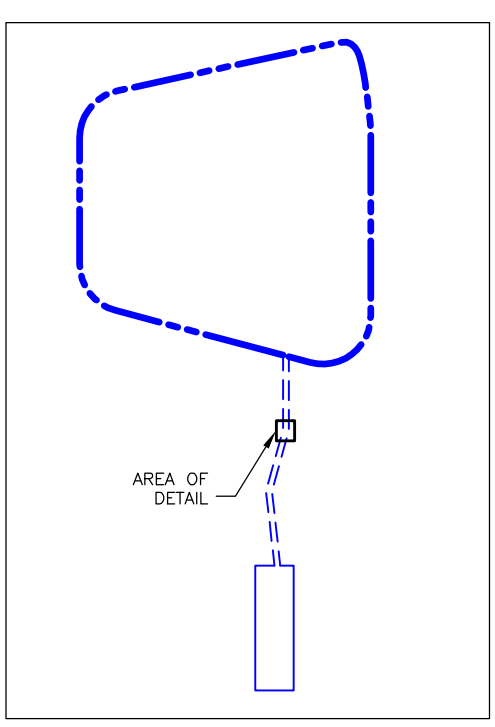


NOTES:

1. CONCENTRATIONS ARE IN UNITS OF mg/kg (MILLIGRAM PER KILOGRAM)
2. BASE CONFIRMATION SAMPLE DATA IS DESIGNATED IN **MAGENTA**
3. SIDEWALL CONFIRMATION SAMPLE DATA IS DESIGNATED IN **ORANGE**

EXPLANATION

△B-9SE	SAMPLE LOCATION AND DESIGNATION
	EXCAVATION DELINEATION BOUNDARY
	OUTFLOW DITCH
	FAN-OUT AREA
	RAILROAD RACK LAGOON
	EXCAVATED TO 5 FEET
ND	NON DETECT



KEY MAP

N

CONSTITUENT TABLE EXPLANATION

SAMPLE ID → B-9SE 3' ← SAMPLE DEPTH

TOTAL PETROLEUM HYDROCARBONS AS DIESEL RANGE ORGANICS → TPH-DRO ND ← CONCENTRATION

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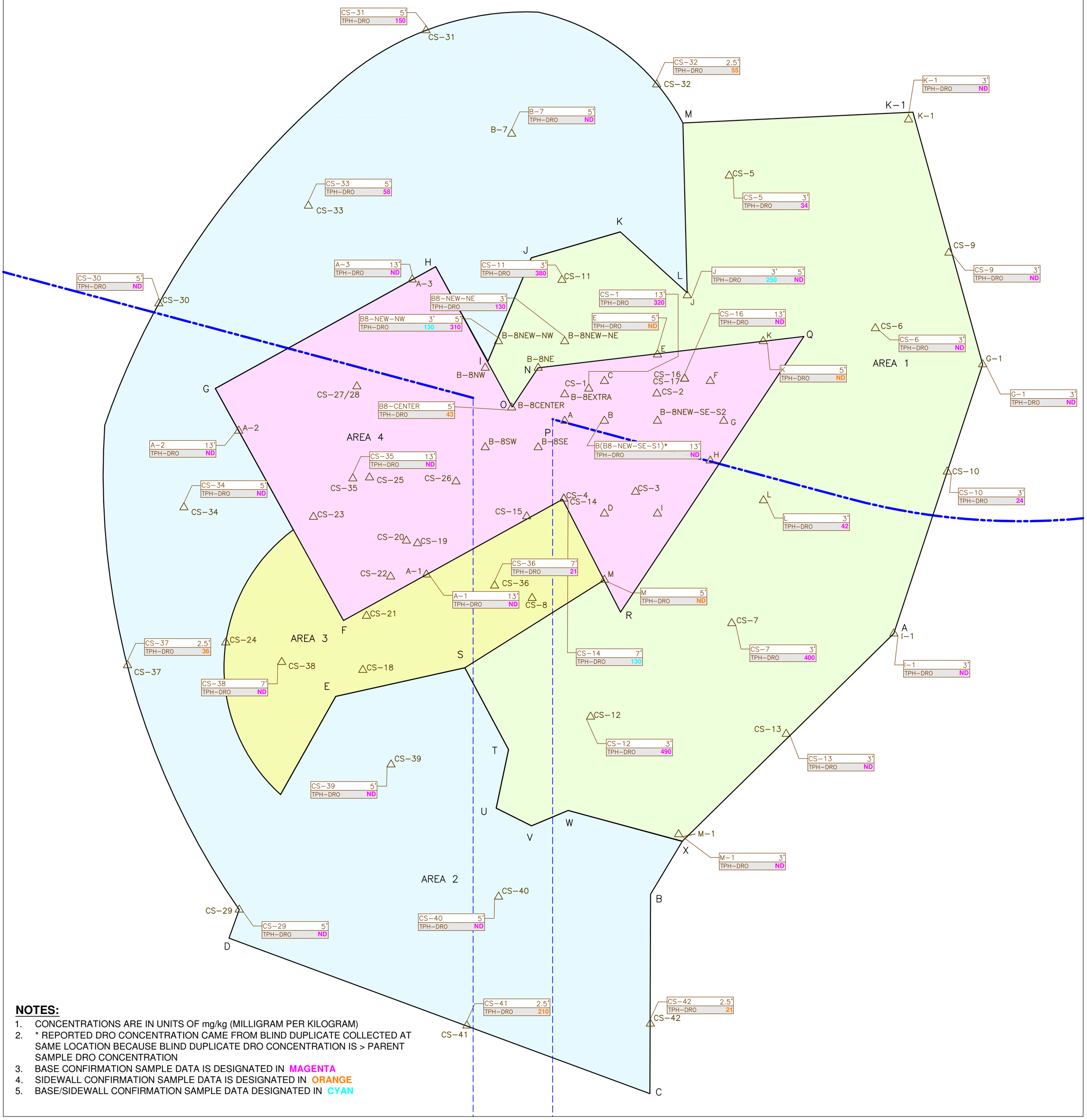
FIGURE 6

RAILROAD RACK LAGOON OVERFLOW DITCH
B-9 FINAL EXCAVATION AREA
AND SAMPLE RESULTS

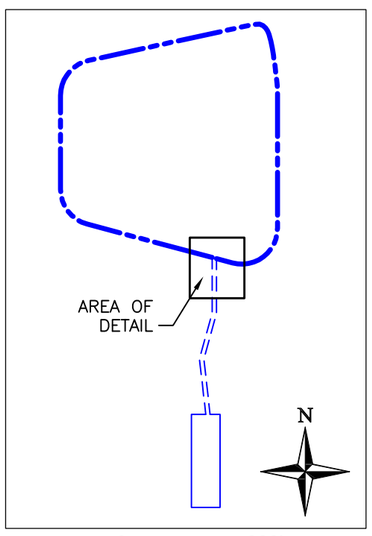
WESTERN REFINING
GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: REP	Checked By: GP	Scale: AS SHOWN	Date: 9/13/2010	File: 072SOILSAMP-B9-201009



NOTES:

1. CONCENTRATIONS ARE IN UNITS OF mg/kg (MILLIGRAM PER KILOGRAM)
2. * REPORTED DRO CONCENTRATION CAME FROM BLIND DUPLICATE COLLECTED AT SAME LOCATION BECAUSE BLIND DUPLICATE DRO CONCENTRATION IS > PARENT SAMPLE DRO CONCENTRATION
3. BASE CONFIRMATION SAMPLE DATA IS DESIGNATED IN **MAGENTA**
4. SIDEWALL CONFIRMATION SAMPLE DATA IS DESIGNATED IN **ORANGE**
5. BASE/SIDEWALL CONFIRMATION SAMPLE DATA DESIGNATED IN **CYAN**



KEY MAP 0 200' 400'

EXPLANATION

AREA 1	EXCAVATED TO 3 FEET
AREA 2	EXCAVATED TO 5 FEET
AREA 3	EXCAVATED TO 7 FEET
AREA 4	EXCAVATED TO 13 FEET
	ACTUAL EXCAVATION BOUNDARY
	OUTFLOW DITCH
	FAN-OUT AREA
	RAILROAD RACK LAGOON
ND	NON DETECT
*	A(B8-NEW-SE) = MAY EVENT(AUGUST EVENT) B(B8-NEW-SE-S1) = MAY EVENT(AUGUST EVENT)
M-1	SAMPLE LOCATION AND DESIGNATION

N

0 5' 10'

CONSTITUENT TABLE EXPLANATION

SAMPLE ID → M-1 3' ← SAMPLE DEPTH
TOTAL PETROLEUM HYDROCARBONS → TPH-DRO ND ← CONCENTRATION
AS DIESEL RANGE ORGANICS

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FIGURE 7

RAILROAD RACK LAGOON OVERFLOW DITCH
B-8 FINAL BASE AND SIDEWALL CONFIRMATION
SAMPLE DRO RESULTS

WESTERN REFINING
GALLUP REFINERY
GALLUP, NEW MEXICO

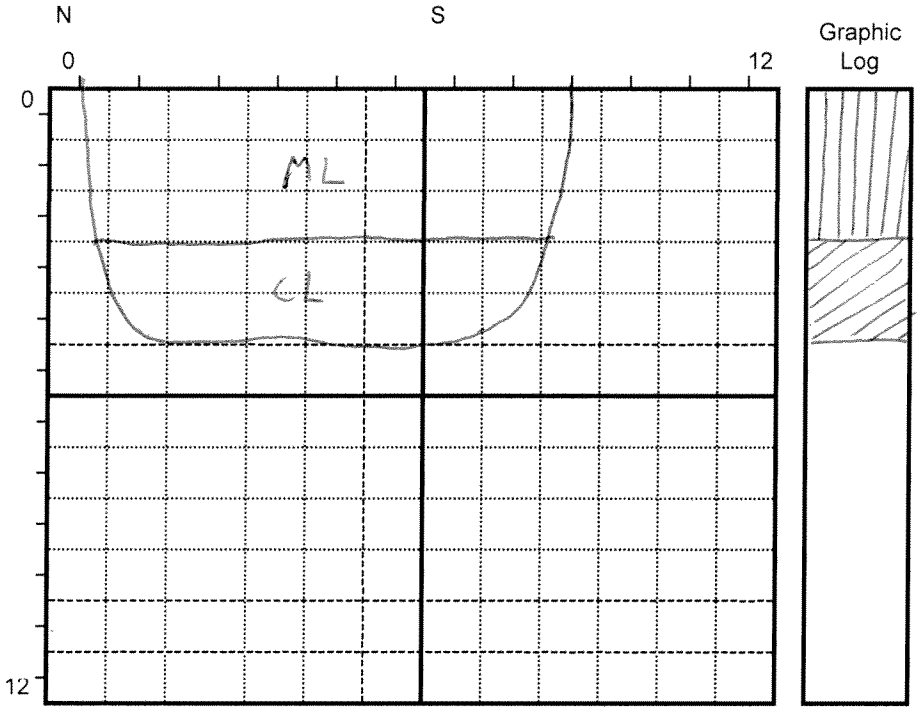
Drawn By: REP	Checked By: GP	Scale: AS SHOWN	Date: 8/31/2010	File: 697-SOIL-BS-201008

APPENDIX A

TEST PIT LOGS

FIGURE 3a. TEST PIT LOG
Ciniza Refinery, Gallup, New Mexico

Project/Job#:	072-013-001	Logged By:	Grant Price	Date:	5/21/2007 - 5/24/2007
Contractor:		Operator:	Steve Morris	Test Pit:	B-8
Location:	B8 Overflow Ditch	Elevation:		Equipment:	Case Backhoe
Photographs:	684, 686, 688, 720	Coordinates(x,y,z):			



Field Measures

Depth	TOV	pH
	none taken	none taken

Excavation deminsions:

6' N-S
4' E-W
3' Deep (5/21/2007)

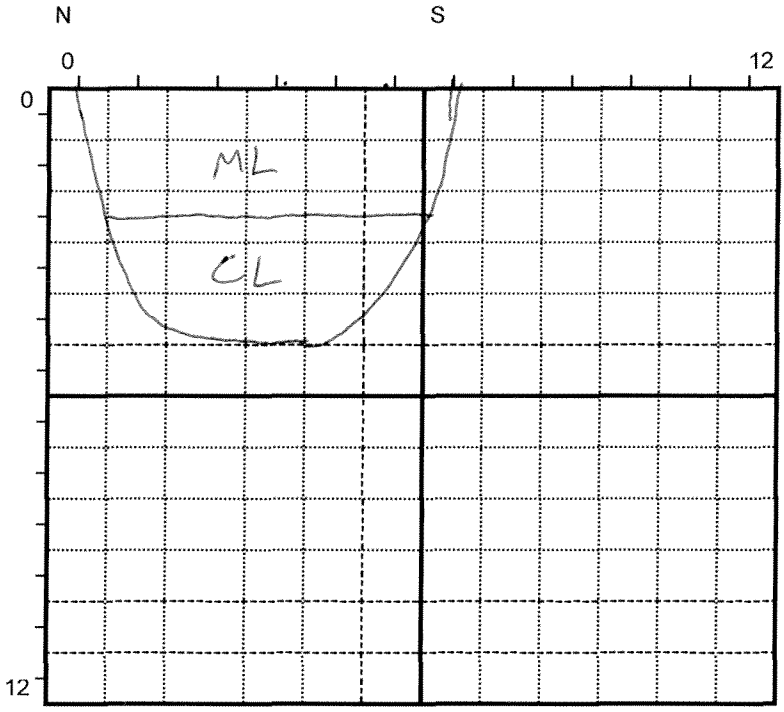
8' N-S
6' E-W
5' Deep (5/21/2007) (see figure B8new)

Depth to Water/ Liquid	
Depth	Type
None encountered	

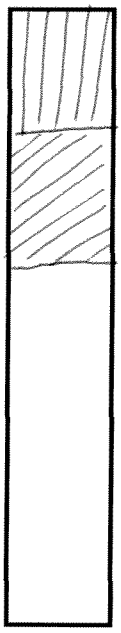
Depth (ft-bgs)	Description
0 - 3	Brown silt, some clay, dry/damp, mostly loose, low plasticity, no odor. Trace of black staining, follows fractures, soil is not saturated, see photos 690 and 691, no odor.
3 - 5	Brown silty clay, damp to moist, low plasticity, stiff to very stiff, same staining as above, no odor.

FIGURE 3a. TEST PIT LOG
Ciniza Refinery, Gallup, New Mexico

Project/Job#:	072-013-001	Logged By:	Grant Price	Date:	5/21/2007 - 5/24/2007
Contractor:		Operator:	Steve Morris	Test Pit:	B-9
Location:	B8 Overflow Ditch	Elevation:		Equipment:	Case Backhoe
Photographs:	685, 687, 689, 721	Coordinates(x,y,z):			



Graphic Log



Field Measures

Depth	TOV	pH
	none taken	none taken

Excavation deminsions:

6' N-S
4' E-W
3' Deep (5/21/2007)

TD increased to 5 ft bgs on 5/24/2007

Depth to Water/ Liquid	
Depth	Type
None encountered	

Depth (ft-bgs)	Description
0 - 2.5	Brown clayey silt, damp, mostly loose, low plasticity, no staining, no odor.
2.5 - 5	Brown silty clay, damp/moist, low plasticity, stiff, slightly siltier in center of excavation. Some black staining noted, very faint odor. Odor does not seem to be associated with staining.

APPENDIX B

SAMPLE FORMS

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification:	B7 - 2 ft	Logged by:	Grant Price
Sample Location:	B-7	Project/Job#:	072-006-001
Date:	10/17/2006	Samplers:	Grant Price/Regina Allen
Time:	15:45	Associated Test Pit:	B-7
Weather:	clearing up, about 55	If Duplicate List Original Source:	
Site Description:	N of out-flow ditch		
Photographs:	105-508, 105-509, 105-524	Coordinates(x,y,z):	

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: ML
Color: Brown
Texture: Silt, some clay
Moisture Content: Dry to damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness):
Mostly loose
Grain Size and Shape: NA
Analysis Required: DRO, VOCs, Metals, Mercury, Cyanide
Number of Sample Bottles: 3
Notes:

Brown silt, some clay, dry to damp, very low plasticity, mostly loose, some chunks up to 1.0", no staining, no odor, background TOV = 0.5 ppm.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (ft-bgs)	PID/FID Reading (ppm)	Description
2	2.8	See notes/testpit logs

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification:	B7 - 5 ft	Logged by:	Grant Price
Sample Location:	B-7	Project/Job#:	072-006-001
Date:	10/18/2006	Samplers:	Grant Price/Regina Allen
Time:	09:50	Associated Test Pit:	B-7
Weather:	Sunny, about 55	If Duplicate List Original Source:	
Site Description:	N of overflow ditch		
Photographs:	105-524	Coordinates(x,y,z):	

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: CL
Color: Brown
Texture: Silty clay
Moisture Content: Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness):
Medium stiff, low plasticity
Grain Size and Shape: NA
Analysis Required: DRO, VOCs, Metals, Mercury, Cyanide
Number of Sample Bottles: 3
Notes:

Brown silty clay, damp, very few unconsolidated fines, almost all chunks (0.2" to 1.0"), medium stiff, low plasticity, no odor, no staining. Background TOV = 0.2 ppm.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (ft-bgs)	PID/FID Reading (ppm)	Description
5	5.8	See notes/testpit logs

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8 SW Logged by: Grant Price
Sample Location: SW corner of B8 Project/Job#: 072-013-001
Date: 5/21/2007 Samplers: Grant Price Regina Allen
Time: 12:42 PM Associated Test Pit: B8
Weather: Sunny, windy, about 75 If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 684, 686, 688 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey Silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey silt, damp, low plasticity, no staining, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes: field screening test kit showed no contamination

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8 SE
Logged by: Grant Price
Sample Location: SE corner of B8
Project/Job#: 072-013-001
Date: 5/21/2007
Samplers: Grant Price Regina Allen
Time: 12:47 PM
Associated Test Pit: B8
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 684, 686, 688
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey Silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey silt, damp, low plasticity, no staining, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes: field screening test kit showed no contamination

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8 Center
Logged by: Grant Price
Sample Location: center of B8
Project/Job#: 072-013-001
Date: 5/21/2007
Samplers: Grant Price Regina Allen
Time: 12:30 PM
Associated Test Pit: B8
Weather: Sunny, windy, about 75
If Duplicate List Original Source: BD05212007, MS, and
Site Description: North end of overflow ditch
Photographs: 684, 686, 688
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey Silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey silt, damp, low plasticity, no staining, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes: field screening test kit showed no contamination

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification:	B8 - 5 ft (B8-Center)	Logged by:	Grant Price
Sample Location:	B-8	Project/Job#:	072-006-001
Date:	10/17/2006	Samplers:	Grant Price/Regina Allen
Time:	10:50	Associated Test Pit:	B-8
Weather:	Cloudy, windy, about 45	If Duplicate List Original Source:	
Site Description:	N end of overflow ditch		
Photographs:	105-515	Coordinates(x,y,z):	

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger
[_] Other (Describe):

Sample Type: Soil
USCS Group: CL
Color: Brown
Texture: Silty clay
Moisture Content: Moist
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness):
Stiff to very stiff, low plasticity
Grain Size and Shape: NA
Analysis Required: DRO, VOCs, Metals, Mercury, Cyanide
Number of Sample Bottles: 3
Notes:

Brown silty clay, damp to moist, low plasticity, stiff to very stiff, no odor, no staining.
Background TOV = 1.0 ppm.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (ft-bgs)	PID/FID Reading (ppm)	Description
5	1.5	See notes/testpit logs

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8extra 2' Logged by: Grant Price
Sample Location: E side of B8new Project/Job#: 072-013-001
Date: 5/23/2007 Samplers: Grant Price Regina Allen
Time: 11:25 AM Associated Test Pit: B8
Weather: Sunny, windy, about 75 If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 690, 691 show similar staining Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey Silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey silt, damp, low plasticity, black staining in fractures, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
2'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8 NW Logged by: Grant Price
Sample Location: NW corner of B8 Project/Job#: 072-013-001
Date: 5/21/2007 Samplers: Grant Price Regina Allen
Time: 12:30 PM Associated Test Pit: B8
Weather: Sunny, windy, about 75 If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 684, 686, 688 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey Silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey silt, damp, low plasticity, no staining, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes: field screening test kit showed no contamination

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8 NE
Logged by: Grant Price
Sample Location: NE corner of B8
Project/Job#: 072-013-001
Date: 5/21/2007
Samplers: Grant Price Regina Allen
Time: 12:37 PM
Associated Test Pit: B8
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 684, 686, 688
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey Silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey silt, damp, low plasticity, no staining, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes: field screening test kit showed no contamination

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8-NE-8_20_5 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 14:45:00 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: none Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Silty clay, trace sand
Moisture Content: Dry / Moist / Wet Moist
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silty clay, trace sand, moist, high plasticity, medium soft, slight HC odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
5-6'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8newNW 3'
Logged by: Grant Price
Sample Location: NW corner of B8new
Project/Job#: 072-013-001
Date: 5/23/2007
Samplers: Grant Price Regina Allen
Time: 11:53 AM
Associated Test Pit: B8
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 719
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey Silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey silt, damp, low plasticity, no staining, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8newNW 5'
Logged by: Grant Price
Sample Location: NW corner of B8new
Project/Job#: 072-013-001
Date: 5/23/2007
Samplers: Grant Price Regina Allen
Time: 12:55 PM
Associated Test Pit: B8
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 697, 719
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: Cl
Color: Brown
Texture: Silty clay
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silty clay, damp to moist, low plasticity, very stiff, no staining, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
5'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8newNE 3'
Logged by: Grant Price
Sample Location: NE corner of B8new
Project/Job#: 072-013-001
Date: 5/23/2007
Samplers: Grant Price Regina Allen
Time: 11:42 AM
Associated Test Pit: B8
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 693, 694, 719
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey Silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey silt, damp, low plasticity, no staining, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8newNE 5'
Logged by: Grant Price
Sample Location: NE corner of B8new
Project/Job#: 072-013-001
Date: 5/23/2007
Samplers: Grant Price Regina Allen
Time: 12:25 PM
Associated Test Pit: B8
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 696, 719
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Silty Clay
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silty clay, damp to moist, low plasticity, very stiff, no staining, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
5'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8newSE 3' Logged by: Grant Price
Sample Location: SE corner of B8new Project/Job#: 072-013-001
Date: 5/23/2007 Samplers: Grant Price Regina Allen
Time: 12:00 PM Associated Test Pit: B8
Weather: Sunny, windy, about 75 If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 719 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey Silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey silt, damp, low plasticity, no staining, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8newSE 5'
Logged by: Grant Price
Sample Location: SE corner of B8new
Project/Job#: 072-013-001
Date: 5/23/2007
Samplers: Grant Price Regina Allen
Time: 1:15 PM
Associated Test Pit: B8
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 698, 719
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Clay, tracy of silt, trace of sand
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clay, trace of silt, trace of sand, moist, very low plasticity, no staining, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
5'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_A_7 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 14:50:00 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 830 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown/dark brown
Texture: Clay, some silt
Moisture Content: Dry / Moist / Wet Damp/moist
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): brown/dark brown clay some silt, damp/moist, moderate/high plasticity, HC odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
6-8'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_A_9 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 15:20:00 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 831 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey silt, some sand
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey silt, damp, slight plasticity, HC odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
8-10'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8newSE-S1 3'
Logged by: Grant Price
Sample Location: 3' E of SE corner of B8new
Project/Job#: 072-013-001
Date: 5/23/2007
Samplers: Grant Price Regina Allen
Time: 5:30 PM
Associated Test Pit: B8
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 714, 719
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Silt, some clay
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silt, some clay, moist, low plasticity, no staining, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8newSE-S1 5'
Logged by: Grant Price
Sample Location: 3' E of SE corner of B8new
Project/Job#: 072-013-001
Date: 5/23/2007
Samplers: Grant Price Regina Allen
Time: 5:42 PM
Associated Test Pit: B8
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 715, 719
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Clay, tracy of silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clay, trace of silt, damp, very low plasticity, no staining, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
5'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_B_7 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 11:15 AM Associated Test Pit: B8
Weather: If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 819 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Dark brown
Texture: Clay, trace sand
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Dark brown clay, trace sand, damp, medium to high plasticity, medium stiff, slight HC odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
6-8'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_B_9 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 11:50 AM Associated Test Pit: B8
Weather: If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 820 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Dark brown
Texture: Clay, trace sand, trace silt
Moisture Content: Dry / Moist / Wet Dry
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Dark brown clay, trace sand, trace silt, dry, low plasticity, stiff, slight HC odor (less than B_8_20_B_7).
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
8-10'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8newSE-S2 3'
Logged by: Grant Price
Sample Location: 7' E of SE corner of B8new
Project/Job#: 072-013-001
Date: 5/23/2007
Samplers: Grant Price Regina Allen
Time: 6:05 PM
Associated Test Pit: B8
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 717, 719
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Silt, some clay
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silt, some clay, damp, low plasticity, no staining, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8newSE-S2 5'
Logged by: Grant Price
Sample Location: 7' E of SE corner of B8new
Project/Job#: 072-013-001
Date: 5/23/2007
Samplers: Grant Price Regina Allen
Time: 6:28 PM
Associated Test Pit: B8
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 718, 719
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Clay, tracy of silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clay, trace of silt, damp, very low plasticity, no staining, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
5'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B9 Center
Logged by: Grant Price
Sample Location: Center of B9
Project/Job#: 072-013-001
Date: 5/21/2007
Samplers: Grant Price Regina Allen
Time: 13:37:00 PM
Associated Test Pit: B9
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: Middle of overflow ditch
Photographs: 685, 687, 689
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Clay, some silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clay, some silt damp/moist, low plasticity, no staining, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes: field screening test kit showed no contamination

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B9new Center 5' Logged by: Grant Price
Sample Location: Center of B9 Project/Job#: 072-013-001
Date: 5/23/2007 Samplers: Grant Price Regina Allen
Time: 1:30 PM Associated Test Pit: B9
Weather: Sunny, windy, about 75 If Duplicate List Original Source: None
Site Description: Middle of overflow ditch
Photographs: 699, 700 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Clay, some silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clay, some silt damp, very low plasticity, no staining, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes: field screening test kit showed no contamination

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
5'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B9 SE
Logged by: Grant Price
Sample Location: SE corner of B9
Project/Job#: 072-013-001
Date: 5/21/2007
Samplers: Grant Price Regina Allen
Time: 13:30:00 PM
Associated Test Pit: B9
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: Middle of overflow ditch
Photographs: 685, 687, 689
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Clay, trace of silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clay, trace of silt, damp/moist, low plasticity, no staining, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes: field screening test kit showed no contamination

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B9 SW
Logged by: Grant Price
Sample Location: SW corner of B9
Project/Job#: 072-013-001
Date: 5/21/2007
Samplers: Grant Price Regina Allen
Time: 13:23:00 PM
Associated Test Pit: B9
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: Middle of overflow ditch
Photographs: 685, 687, 689
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Clay, trace of silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clay, trace of silt, damp/moist, low plasticity, trace of rust colored staining, trace of dark brown/black organics, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes: field screening test kit showed no contamination

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B9 NE
Logged by: Grant Price
Sample Location: NE corner of B9
Project/Job#: 072-013-001
Date: 5/21/2007
Samplers: Grant Price Regina Allen
Time: 13:18:00 PM
Associated Test Pit: B9
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: Middle of overflow ditch
Photographs: 685, 687, 689
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Clay, trace of silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clay, trace of silt, damp/moist, low plasticity, trace of rust colored staining, trace of dark brown/black organics, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes: field screening test kit showed no contamination

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B9 NW Logged by: Grant Price
Sample Location: NW corner of B9 Project/Job#: 072-013-001
Date: 5/21/2007 Samplers: Grant Price Regina Allen
Time: 13:09:00 PM Associated Test Pit: B9
Weather: Sunny, windy, about 75 If Duplicate List Original Source: None
Site Description: Middle of overflow ditch
Photographs: 685, 687, 689 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Clay, trace of silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clay, trace of silt, damp/moist, low plasticity, trace of rust colored staining, trace of dark brown/black organics, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes: field screening test kit showed no contamination

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_C_3 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 13:35:00 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 826 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey silt, trace sand
Moisture Content: Dry / Moist / Wet Dry/damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey silt, trace sand, dry/damp, slight plasticity, medium stiff, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
2-4'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_C_5 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 13:50:00 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 827 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Silty clay, trace sand
Moisture Content: Dry / Moist / Wet Dry/damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silty clay, trace sand, dry/damp, no plasticity, stiff/very stiff.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
4-6'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_D_3 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 12:15 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 822 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Silty clay, some sand
Moisture Content: Dry / Moist / Wet Dry
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silty clay, some sand, dry, crumbles easily, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
2-4'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_D_5 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 12:30 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 823 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Silty clay
Moisture Content: Dry / Moist / Wet Dry/damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silty clay, dry/damp, very low plasticity (crumbles easily), no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
4-6'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_E_3 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 16:00:00 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source: 8-20-07 Duplicate
Site Description: North end of overflow ditch
Photographs: 833 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Clay, some silt, some sand
Moisture Content: Dry / Moist / Wet Dry/damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clay, some silt, some sand, dry/damp, very low plasticity, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes: Blind duplicate collected here.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
2-4'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_E_5 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 16:15:00 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 834 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Silt, some clay, some sand
Moisture Content: Dry / Moist / Wet Dry/damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silt, some clay, some sand, dry/damp, very low plasticity, very dense, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
4-6'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_F_3 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 17:00:00 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 836 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey silt
Moisture Content: Dry / Moist / Wet Dry
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey silt, dry, low plasticity, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
2-4'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_F_5 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 17:25:00 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 837 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: ML
Color: Light brown
Texture: Silt, some clay
Moisture Content: Dry / Moist / Wet Dry
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Light brown silt, some some clay, dry, no plasticity, very stiff, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
4-6'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_G_3 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 17:40:00 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source: MS/MSD
Site Description: North end of overflow ditch
Photographs: 839 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Silty clay
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silty clay, damp, low plasticity, very slight HC odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes: MS/MSD collected here.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
2-4'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_21_H_3 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/21/2007 Samplers: Grant Price Regina Allen
Time: 11:40 AM Associated Test Pit: B8
Weather: If Duplicate List Original Source:
Site Description: North end of overflow ditch
Photographs: 856 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey silt, damp, low plasticity, medium stiff, slight HC odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
2-4'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_21_H_5 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/21/2007 Samplers: Grant Price Regina Allen
Time: 11:45 AM Associated Test Pit: B8
Weather: If Duplicate List Original Source:
Site Description: North end of overflow ditch
Photographs: 857 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Silty clay
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silty clay, damp, very low plasticity, stiff, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
4-6'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_21_I_3 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/21/2007 Samplers: Grant Price Regina Allen
Time: 11:15 AM Associated Test Pit: B8
Weather: If Duplicate List Original Source:
Site Description: North end of overflow ditch
Photographs: 853 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Silty clay, some sand
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silty clay, damp, medium plasticity, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
2-4'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_21_I_5 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/21/2007 Samplers: Grant Price Regina Allen
Time: 11:25 AM Associated Test Pit: B8
Weather: If Duplicate List Original Source:
Site Description: North end of overflow ditch
Photographs: 854 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Silty clay
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silty clay, damp, low plasticity, medium soft/medium hard, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
4-6'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_21_J_3 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/21/2007 Samplers: Grant Price Regina Allen
Time: 9:20 AM Associated Test Pit: B8
Weather: If Duplicate List Original Source:
Site Description: North end of overflow ditch
Photographs: 849 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Silty clay, trace sand
Moisture Content: Dry / Moist / Wet Dry
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silty clay, trace sand, dry, low plasticity, medium stiff, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
2-4'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_21_J_5 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/21/2007 Samplers: Grant Price Regina Allen
Time: 9:30 AM Associated Test Pit: B8
Weather: If Duplicate List Original Source:
Site Description: North end of overflow ditch
Photographs: 850 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Clay, some silt, trace sand
Moisture Content: Dry / Moist / Wet Dry
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clay, some silt, trace sand, dry, very low plasticity, stiff/very stiff, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
4-6'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_K_3 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 19:00:00 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source:
Site Description: North end of overflow ditch
Photographs: 845 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey, sandy silt
Moisture Content: Dry / Moist / Wet Dry
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey, sandy silt, dry, non-plastic, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
2-4'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_K_5 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 19:20:00 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source:
Site Description: North end of overflow ditch
Photographs: 846 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Silty clay, trace sand
Moisture Content: Dry / Moist / Wet Dry
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silty clay, trace sand, dry, very low plasticity, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
4-6'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_21_L_3 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/21/2007 Samplers: Grant Price Regina Allen
Time: 12:05 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source:
Site Description: North end of overflow ditch
Photographs: 859 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey silt
Moisture Content: Dry / Moist / Wet Dry
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey silt, dry, non-plastic, medium stiff, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
2-4'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_21_L_5 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/21/2007 Samplers: Grant Price Regina Allen
Time: 12:12 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source:
Site Description: North end of overflow ditch
Photographs: 860 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: ML/CL
Color: Brown
Texture: Upper foot = clayey silt, lower foot = clay, some silt
Moisture Content: Dry / Moist / Wet Dry
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Upper foot brown clayey silt, lower foot clay, some silt, dry, non-plastic, medium stiff/stiff, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
4-6'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_M_3 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 18:20:00 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source:
Site Description: North end of overflow ditch
Photographs: 842 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Clay, some silt, trace sand
Moisture Content: Dry / Moist / Wet Dry
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clay, some silt, trace sand, dry, non-plastic, stiff, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
2-4'	None taken	See notes/test pit log

Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_M_5 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 18:40:00 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source:
Site Description: North end of overflow ditch
Photographs: 843 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Light brown/brown
Texture: Clay, some silt, trace sand
Moisture Content: Dry / Moist / Wet Dry
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Light brown/brown clay, some silt, trace sand, dry, non-plastic, stiff, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
4-6'	None taken	See notes/test pit log

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: CS-1 (C-1) Logged by: **Regina Mitchell**
Sample Location: **Fan Out Area** Project/Job#: **072-013-001**
Date: 2/17/09 Samplers: **Regina Mitchell**
Time: @ 1610 Associated Test F **Not Applicable**
Weather: Sunny 65-70°F If Duplicate List Original Source: N/A
Site Description: **Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**
Photographs: 1116 - 1622 Coordinates(x,y,z): N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [✓] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: Brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs

Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: • one 4oz Jar
Notes:
• Collected field screening in 4oz jar as well
• Collected @ bottom of 13' excavation
• Used hand auger
• Denoted as "C-1" in photo

Discreet Soil Interval Description

Graphic Log

Depth = 13 feet = base

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
	visually	
	determined	
N/A	clean by	N/A
	director	

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: CS-2 Logged by: Regina Mitchell
Sample Location: Fan Out Area Project/Job#: 072-013-001
Date: 3/17/09 Samplers: Regina Mitchell
Time: 1450 Associated Test F Not Applicable
Weather: sunny 65°F If Duplicate List Original Source: N/A
Site Description: Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area
Photographs: 116-1618 Coordinates(x,y,z): N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [✓] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: Brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 1 5oz (4oz)
Notes:
- MS/MSD collected here
- collected field screening in 4oz jar as well
- collected at bottom of 9' excavation on way to excavating to 13' feet.
- used Hand auger 2

Discreet Soil Interval Description

Graphic Log Depth = 9 feet Sidewall

0'
6'
12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
N/A	visually determined "clean" by instructor Spectrometer was inoperable/	N/A

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: CS-3
Logged by: Regina Mitchell
Sample Location: Fan Out Area
Project/Job#: 072-013-001
Date: 3/18/09
Samplers: Regina Mitchell
Time: 1355
Associated Test F Not Applicable
Weather: Sunny
If Duplicate List Original Source: N/A
Site Description: Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area
Photographs: 1116 - 1624
Coordinates(x,y,z): N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [✓] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: Brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: • 1 4 oz jar
Notes: • collected field screening in 4 oz jar also
• used hand auger (after collecting EBI-031809 equipment blank)
• collected from sidewall base of excavation @ 5 ft bgs

Discreet Soil Interval Description

Graphic Log

Depth = 5 feet base

Depth (in / ft)	PID/FID Reading (ppm)	Description
	ND (0.60) ppm	320 ppm (mg/kg)
N/A		

0'
6'
12'

spectrometer
Lab result

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-4	Logged by:	Regina Mitchell
Sample Location:	Fan Out Area	Project/Job#:	072-013-001
Date:	3/18/09	Samplers:	Regina Mitchell
Time:	1405	Associated Test F	Not Applicable
Weather:	sunny	If Duplicate List Original Source:	N/A
Site Description:	Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area		
Photographs:	1116 - 1625	Coordinates(x,y,z):	N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [✓] Auger

[_] Other (Describe):

Sample Type: Soil

USCS Group: See Previous test pit/bore hole logs

Color: Brown

Texture: See Previous test pit/bore hole logs

Moisture Content: Dry / Moist / Wet

Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs

Grain Size and Shape: See Previous test pit/bore hole logs

Analysis Required: 8015B

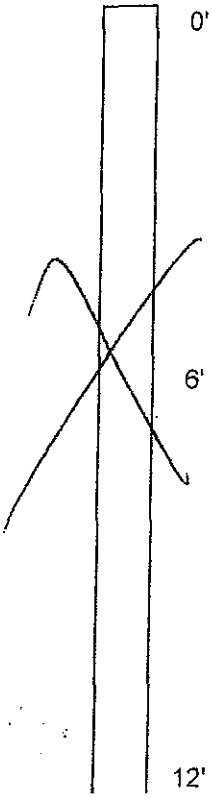
Number of Sample Bottles:

Notes:
- collected in 4oz jar
- collected field screening in 4oz jar also
- used hand auger (after collecting EB2-031809)
- collected from sidewall w/ auger @ 4 ft bgs

Discreet Soil Interval Description

Graphic Log

Depth = 4 ft sidewall



Depth (in / ft)	PID/FID Reading (ppm)	Description
	Spectrometer:	Lab result
	44.62 (High) ppm	6,000 ppm (mg/kg)

WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-5	Logged by:	Regina Mitchell
Sample Location:	Fan Out Area	Project/Job#:	072-013-001
Date:	4/22/09	Samplers:	Regina Mitchell
Time:	1540	Associated Test F	Not Applicable
Weather:	Sunny	If Duplicate List Original Source:	N/A
Site Description:	Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area		
Photographs:	1657	Coordinates(x,y,z):	N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger

[_] Other (Describe):

Sample Type: Soil

USCS Group: See Previous test pit/bore hole logs

Color: Brown

Texture: See Previous test pit/bore hole logs

Moisture Content: Dry / Moist / Wet

Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs

Grain Size and Shape: See Previous test pit/bore hole logs

Analysis Required: 8015B

Number of Sample Bottles: collected one 4oz jar sample

Notes: collected one 4oz jar for FS/CS-5
Sample collected from depth of 3 ft bgs (Base)

Discreet Soil Interval Description

Graphic Log

Depth = 3 feet, Base

0'

6'

12'

~~Depth (in / ft)~~	~~PID/FID Reading (ppm)~~ SPECTROMETER	~~Description~~ LAB RESULT
	2.294	34 mg/kg

X

WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-6	Logged by:	Regina Mitchell
Sample Location:	Fan Out Area	Project/Job#:	072-013-001
Date:	3/18/09	Samplers:	Regina Mitchell
Time:	1705	Associated Test F	Not Applicable
Weather:	Sunny	If Duplicate List Original Source:	N/A
Site Description:	Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area		
Photographs:	116-01629	Coordinates(x,y,z):	N/A

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger

[_] Other (Describe): scoop was distilled water jug cut in half

Sample Type: Soil

USCS Group: See Previous test pit/bore hole logs

Color: Brown

Texture: See Previous test pit/bore hole logs

Moisture Content: Dry / Moist / Wet

Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs

Grain Size and Shape: See Previous test pit/bore hole logs

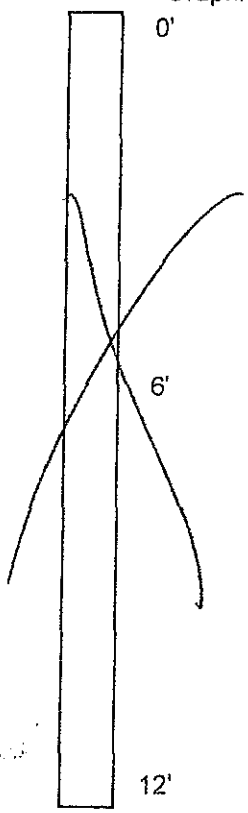
Analysis Required: 8015B

Number of Sample Bottles: • one 4-oz jar

Notes: • collected one 4oz jar for field screening
• Sample collected from base @ 3 ft bgs

Discreet Soil Interval Description

Graphic Log



Depth = 3 feet; Base

~~Depth (in / ft)~~	~~PID/FID Reading (ppm)~~ Spectrometer	~~Description~~ Lab result
N/A	ND (0.36) ppm	ND (10 ppm) (mg/kg)

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

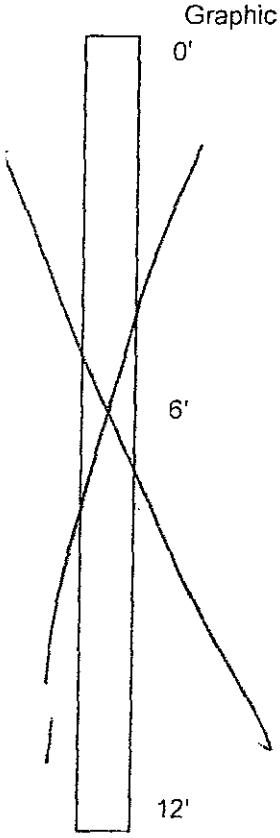
Sample Identification: CS-7 Logged by: Regina Mitchell
Sample Location: Fan Out Area Project/Job#: 072-013-001
Date: 4/22/09 Samplers: Regina Mitchell
Time: 1715 Associated Test F Not Applicable
Weather: partly cloudy If Duplicate List Original Source: N/A
Site Description: Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area
Photographs: 1606D Coordinates(x,y,z): N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: Brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles:
Notes: Collected one 4oz jar for Sample
collected one 4oz jar for FS/CS-7
collected MS/MSD CS7 here
Sample collected from depth of 3 ft bgs (Base)

Discreet Soil Interval Description

Graphic Log Depth = 3 ft, Base



Depth (in / ft)	PID/FID Reading (ppm) SPECTROMETER	Description LAB RESULT
	3.343	400 mg/kg

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: CS-8
Logged by: Regina Mitchell
Sample Location: Fan Out Area
Project/Job#: 072-013-001
Date: 4/21/09
Samplers: Regina Mitchell
Time: 1305
Associated Test F Not Applicable
Weather:
If Duplicate List Original Source: BD 042109
Site Description: Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area
Photographs: 1649
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: Brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles:
Notes: Took 4 oz jar for sample and FS/CS-8 in separate 4 oz jar
Took
BD042109 here in separate 4 oz jar
3' Base sample

Discreet Soil Interval Description

Graphic Log Depth=3 feet; Base

0'
6'
12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
	SPECTROMETER	LAB RESULT
	113.16 (Hi)	6,100 mg/kg

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

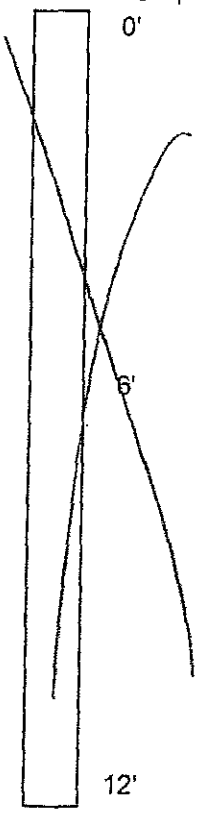
Sample Identification:	CS-9	Logged by:	Regina Mitchell
Sample Location:	Fan Out Area	Project/Job#:	072-013-001
Date:	3/18/09	Samplers:	Regina Mitchell
Time:	1707	Associated Test F	Not Applicable
Weather:	Sunny	If Duplicate List Original Source:	N/A
Site Description:	Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area		
Photographs:	1116 - 1630	Coordinates(x,y,z):	N/A

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe): Scoop was distilled water jug cut in half
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: Brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: One 4oz jar - no preservative
Notes: One 4oz jar used to collect field screening sample
Sample collected from base @ 3 ft bgs

Discreet Soil Interval Description

Graphic Log



Depth = 3 feet; Base

Depth (in / ft)	Spectrometer RID/FID Reading (ppm)	Lab result Description
N/A	ND(0.40) ppm	ND(10 ppm) mg/kg

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

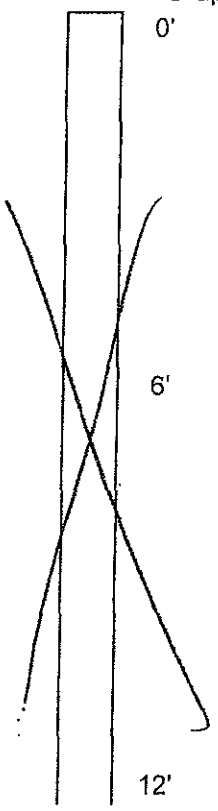
Sample Identification: CS-10 Logged by: **Regina Mitchell**
Sample Location: **Fan Out Area** Project/Job#: **072-013-001**
Date: 4/22/09 Samplers: **Regina Mitchell**
Time: ~~0800~~ 1630 Associated Test F **Not Applicable**
Weather: Sunny If Duplicate List Original Source: N/A
Site Description: **Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**
Photographs: 11658 Coordinates(x,y,z): N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: Brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / (Moist) / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: collected one 4oz jar for sample
Notes: collected one 4oz jar for FS/CS-10
Sample collected from depth of 3 ft bgs (bore)

Discreet Soil Interval Description

Graphic Log Depth = 3 feet; Bak



~~Depth (in / ft)~~	~~PID/FID Reading (ppm)~~ SPECTROMETER	Description LAB RESULT
	1,957	24 mg/kg

SOIL / WASTE SAMPLE LOG

WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-11	Logged by:	Regina Mitchell
Sample Location:	Fan Out Area	Project/Job#:	072-013-001
Date:	4/22/09	Samplers:	Regina Mitchell
Time:	1520	Associated Test F	Not Applicable
Weather:	Sunny	If Duplicate List Original Source:	N/A
Site Description:	Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area		
Photographs:	16576	Coordinates(x,y,z):	N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger

[_] Other (Describe):

Sample Type: Soil

USCS Group: See Previous test pit/bore hole logs

Color: Brown

Texture: See Previous test pit/bore hole logs

Moisture Content: Dry / Moist / Wet

Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs

Grain Size and Shape: See Previous test pit/bore hole logs

Analysis Required: 8015B

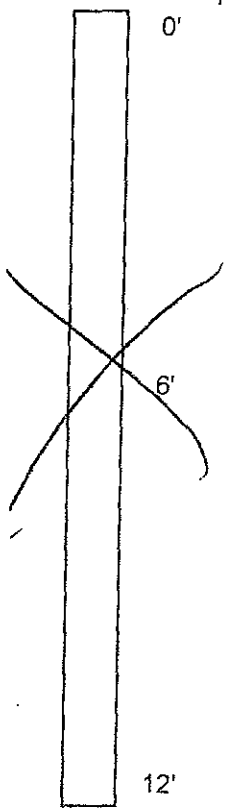
Number of Sample Bottles: collected one 4 oz jar for sample

Notes: collected one 4 oz jar for FS/CS-11
Sample collected from depth of 3 ft bgs (base)

Discreet Soil Interval Description

Graphic Log

Depth = 3 feet, Base



Depth (in / ft)	SPECTROMETER PID/FID Reading (ppm)	LAB RESULT Description
	29.615	380 mg/kg

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

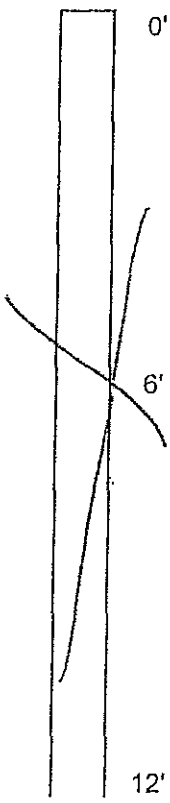
Sample Identification:	CS-12	Logged by:	Regina Mitchell
Sample Location:	Fan Out Area	Project/Job#:	072-013-001
Date:	4/22/09	Samplers:	Regina Mitchell
Time:	1733	Associated Test F	Not Applicable
Weather:	partly cloudy	If Duplicate List Original Source:	N/A
Site Description:	Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area		
Photographs:	1 to 2	Coordinates(x,y,z):	N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: Brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / (Moist) / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: Collected one 4oz jar for Sample
Notes: collected one 4oz jar for Field Screening
Sample collected from depth of 3 ft bgs
(base)

Discreet Soil Interval Description

Graphic Log



Depth = 3 feet, Base

~~Depth (in / ft)~~	~~PID/FID Reading (ppm)~~ Spectrometer	~~Description~~ Lab Result
N/A		
	6.416	490 mg/kg

WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-13	Logged by:	Regina Mitchell
Sample Location:	Fan Out Area	Project/Job#:	072-013-001
Date:	4/23/09	Samplers:	Regina Mitchell
Time:	1515	Associated Test F	Not Applicable
Weather:	Sunny	If Duplicate List Original Source:	N/A
Site Description:	Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area		
Photographs:	1664	Coordinates(x,y,z):	N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger

[_] Other (Describe):

Sample Type: Soil

USCS Group: See Previous test pit/bore hole logs

Color: Brown

Texture: See Previous test pit/bore hole logs

Moisture Content: Dry / Moist / Wet

Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs

Grain Size and Shape: See Previous test pit/bore hole logs

Analysis Required: 8015B

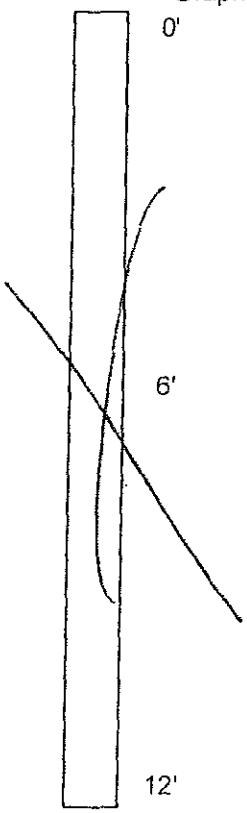
Number of Sample Bottles: collected one 4 oz jar for sample

Notes: collected one 4 oz jar for field screening

Sample collected @ depth of 3 ft bgs (base)

Discreet Soil Interval Description

Graphic Log



Depth = 3 feet ; Base

~~Depth (in / ft)~~	Spectrometer ~~PID/FID Reading (ppm)~~	LAB RESULT ~~Description~~
	8.172	ND(10) mg/kg

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

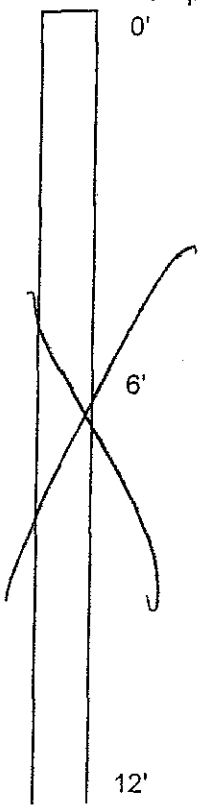
Sample Identification: CS-14 Logged by: Regina Mitchell
Sample Location: Fan Out Area Project/Job#: 072-013-001
Date: 4/21/09 Samplers: Regina Mitchell
Time: 1328 Associated Test F Not Applicable
Weather: Sunny If Duplicate List Original Source: N/A
Site Description: Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area
Photographs: 1151 Coordinates(x,y,z): N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles:
Notes: 4oz jar
FS/CS-14 in separate 4oz jar
collected at 7' base sample

Discreet Soil Interval Description

Graphic Log Depth = 7 feet, Base



Depth (in / ft)	SPECTOMETER PID/FID Reading (ppm)	LAB RESULT Description
	20.103	130 mg/kg

WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: CS-15 Logged by: Regina Mitchell
Sample Location: Fan Out Area Project/Job#: 072-013-001
Date: 4/21/09 Samplers: Regina Mitchell
Time: 1312 Associated Test F Not Applicable
Weather: Sunny If Duplicate List Original Source: N/A
Site Description: Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area
Photographs: 1165D Coordinates(x,y,z): N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: Brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles:
Notes: TOC 4oz jar for sample + FS/CS-15 in separate 4oz jar
+ 500ml MS/MSD here in separate 4oz jar

Collected from 3.5' bgs sidewall

Discreet Soil Interval Description

Graphic Log Depth= 3.5 feet; sidewall

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm) Squadrometer	Description LAB RESULT
	162.63 (Hi)	5,000 mg/kg

N/A

SOIL / WASTE SAMPLE LOG

WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-16	Logged by:	Regina Mitchell
Sample Location:	Fan Out Area	Project/Job#:	072-013-001
Date:	4/22/09	Samplers:	Regina Mitchell
Time:	1325	Associated Test F	Not Applicable
Weather:	Sunny/windy	If Duplicate List Original Source:	N/A
Site Description:	Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area		
Photographs:	1654	Coordinates(x,y,z):	N/A

Composite Sample Description

Sampling Method: [ ] Direct Push [ ] Scoop [X] Auger

[ ] Other (Describe): collected from backhoe scoop using distilled water rinse (RM) Took several locations from backhoe scoop.

Sample Type: Soil

USCS Group: See Previous test pit/bore hole logs

Color: Brown

Texture: See Previous test pit/bore hole logs

Moisture Content: Dry / Moist / Wet

Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs

Grain Size and Shape: See Previous test pit/bore hole logs

Analysis Required: 8015B

Number of Sample Bottles: 4oz jar for sample

Notes: 4oz jar for FS sample (FS/CS-16)

Sample collected from depth of 13 ft bgs (base)

Discreet Soil Interval Description

Graphic Log depth = 13 feet; base

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm) (SPECTROMETER)	Description (LAB RESULT)
	4,558	ND(10) mg/kg

N/A

WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: CS-17 Logged by: Regina Mitchell
Sample Location: Fan Out Area Project/Job#: 072-013-001
Date: 4/21/09 Samplers: Regina Mitchell
Time: 1610 Associated Test F Not Applicable
Weather: sunny If Duplicate List Original Source: N/A
Site Description: Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area
Photographs: 1652 Coordinates(x,y,z): N/A

Composite Sample Description

Sampling Method: [ ] Direct Push [ ] Scoop [X] Auger
[ ] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: Brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / (Moist) / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles:
Notes: Collected in 4oz jar ; collected FS/CS-17 in separate 4oz Jar collected @ 9' sidewall

Discreet Soil Interval Description

Graphic Log Depth = 9 feet ; Sidewall

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm) SPECTROMETER	Description LAB RESULT
	20.972	73 mg/kg

N/A

WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-18	Logged by:	Regina Mitchell
Sample Location:	Fan Out Area	Project/Job#:	072-013-001
Date:	4/23/09	Samplers:	Regina Mitchell
Time:	1615	Associated Test F	Not Applicable
Weather:	Sunny but windy	If Duplicate List Original Source:	N/A
Site Description:	Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area		
Photographs:	1605	Coordinates(x,y,z):	N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger

[_] Other (Describe):

Sample Type: Soil

USCS Group: See Previous test pit/bore hole logs

Color: Brown

Texture: See Previous test pit/bore hole logs

Moisture Content: Dry / Moist / Wet

Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs

Grain Size and Shape: See Previous test pit/bore hole logs

Analysis Required: 8015B

Number of Sample Bottles: collected one 4 oz jar for sample

Notes: collected one 4 oz jar for field screening. Sample collected @ ~~depth~~ of 3 ft bgs (Sidewall)

Discreet Soil Interval Description

Graphic Log Depth = 3 feet sidewall

0'

6'

12'

~~Depth (in ft)~~	SPECTROMETER PID/FID Reading (ppm)	LAB RESULTS ~~Description~~
	13.943	330 mg/kg

SOIL / WASTE SAMPLE LOG

WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-19	Logged by:	Regina Mitchell
Sample Location:	Fan Out Area	Project/Job#:	072-013-001
Date:	4/23/09	Samplers:	Regina Mitchell
Time:	1625	Associated Test F	Not Applicable
Weather:	sunny but windy	If Duplicate List Original Source:	BD was collected here,
Site Description:	Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area		
Photographs:	16616	Coordinates(x,y,z):	N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger

[_] Other (Describe):

Sample Type: Soil

USCS Group: See Previous test pit/bore hole logs

Color: Brown

Texture: See Previous test pit/bore hole logs

Moisture Content: Dry / Moist / Wet

Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs

Grain Size and Shape: See Previous test pit/bore hole logs

Analysis Required: 8015B

Number of Sample Bottles:

Notes: Collected one 4oz jar for sample
Collected BD here in 4oz jar
Collected one 4oz jar for field screening
slight odor,
Sample collected @ 3 ft bgs side

Discreet Soil Interval Description

Graphic Log

Depth=3 feet; Sidewall

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm) (SPECTROMETER)	Description (LAB RESULT)
	130.2 (Hi)	1600 mg/kg

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: CS20
Logged by: John Pietz
Sample Location: Fan Out Area
Project/Job#: 072-013-001
Date: 5-19-09
Samplers: John Pietz
Time: 10:50
Associated Test F: Not Applicable
Weather: clr 78F
If Duplicate List Original Source:
Site Description: Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area
Photographs:
Coordinates(x,y,z): Seem up 2.5' BGS

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Sample from back hoe bucket
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color:
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B Diesel
Number of Sample Bottles: 2 – CS-20, MS/MSD-CS20
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in./ ft)	PID/FID Reading (ppm)	Description

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: CS-21 Logged by: Josh Pietz
Sample Location: Fan Out Area Project/Job#: 072-013-001
Date: 5-14-09 Samplers: John Pietz
Time: 1056 Associated Test F Not Applicable
Weather: clr 78F If Duplicate List Original Source:
Site Description: Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area
Photographs. Coordinates(x,y,z): ~~see map~~ 3,5 B65

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe). sample from backhoe bucket
Sample Type. Soil
USCS Group See Previous test pit/bore hole logs
Color
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characteristics (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape. See Previous test pit/bore hole logs
Analysis Required. 8015B Diesel
Number of Sample Bottles: 2
Notes: CS-21 BD051409

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

SOIL / WASTE SAMPLE LOG

WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-22	Logged by:	Regina Mitchell
Sample Location:	Fan Out Area	Project/Job#:	072-013-001
Date:	6/3/09	Samplers:	Regina Mitchell
Time:	1440	Associated Test F	Not Applicable
Weather:	Sunny	If Duplicate List Original Source:	
Site Description:	Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area		
Photographs:	1711	Coordinates(x,y,z):	N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger

[X] Other (Describe): Backhoe Scoop

Sample Type: Soil

USCS Group: See Previous test pit/bore hole logs

Color: Brown

Texture: See Previous test pit/bore hole logs

Moisture Content: (Dry) / Moist / Wet

Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): ~~See Previous test pit/bore hole logs~~ N/A

Grain Size and Shape: See Previous test pit/bore hole logs

Analysis Required: 8015B

Number of Sample Bottles: Collected sample in one 4-oz jar

Notes: Collected CS-22 MS/MSD in one 4 oz jar

Sample collected from Depth of 7 feet bgs @ same location as CS-19 (Base)

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

N/A

Depth (in / ft)	PID/FID Reading (ppm)	Description

N/A

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-23	Logged by:	Regina Mitchell
Sample Location:	Fan Out Area	Project/Job#:	072-013-001
Date:	6/3/09	Samplers:	Regina Mitchell
Time:	1500	Associated Test F	Not Applicable
Weather:	Sunny	If Duplicate List Original Source:	
Site Description:	Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area		
Photographs:	1712	Coordinates(x,y,z):	N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[✓] Other (Describe): Bucket scoop
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: Brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): ~~See Previous test pit/bore hole logs~~ RM
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 1
Notes: Collected one 4-oz jar for CS-23
Collected one 4-oz jar for BD-
collected @ 3 ft bgs @ sidewall

Discreet Soil Interval Description

Graphic Log

0'

N/A

12'

Depth (in / ft)	PID/FID Reading (ppm)	RM Description
	N	A

WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-24	Logged by:	Regina Mitchell
Sample Location:	Fan Out Area	Project/Job#:	072-013-001
Date:	6/3/09	Samplers:	Regina Mitchell
Time:	1515	Associated Test F	Not Applicable
Weather:	Sunny	If Duplicate List Original Source:	
Site Description:	Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area		
Photographs:	17/3	Coordinates(x,y,z):	N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Backhoe scoop
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: Brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): ~~See Previous test pit/bore hole logs~~ RM

Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 1
Notes: collected one 4oz jar for CS-24 sample
collected @ 3ft bgs @ sidewall

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

N/A RM

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: CS-25 Logged by: J. Pietz
Sample Location: Fan Out Area Project/Job#: 072-013-001
Date: 7/23/04 Samplers: J. Pietz
Time: 1501 Associated Test F Not Applicable
Weather: clr 85 If Duplicate List Original Source:
Site Description: Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area
Photographs: yes Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color:
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles:
Notes: Sample 10 feet BGS
CS-25

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: CS-26 Logged by: JPietz
Sample Location: Fan Out Area Project/Job#: 072-013-001
Date: 7/23/09 Samplers: J Pietz
Time: 1536 Clr 45 Associated Test F Not Applicable
Weather: clr ~85 If Duplicate List Original Source:
Site Description: Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area
Photographs: Yes Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color:
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 2 - CS-26 BD-072309
Notes: 10' BGS

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
10'		

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: C527 Logged by: Johnfletcher
Sample Location: **Fan Out Area** Project/Job#: **072-013-001**
Date: 7/23/09 Samplers: Johnfletcher
Time: 1555 Associated Test F **Not Applicable**
Weather: Clr 85 If Duplicate List Original Source:
Site Description: **Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**
Photographs: YES Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color:
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles:
Notes: C527 10 feet BGS

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: CS-28 Logged by: J. Pietz
Sample Location: Fan Out Area Project/Job#: 072-013-001
Date: 7/23/04 Samplers: J. Pietz
Time: 1405 Associated Test F Not Applicable
Weather: Clear If Duplicate List Original Source:
Site Description: Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area
Photographs: Yes Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color:
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles:
Notes: 5 foot sample, side wall (BGS)
CS-28
MS/MSD-CS-28

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: **CS-29** Logged by: **Loretta, Beck, Alvin (Gallup)**
Sample Location: **Fan Out Area** Project/Job#: **072-013-001 / 697-017-002**
Date: **10/1/2009** Samplers: **Loretta, Beck, Alvin (Gallup)**
Time: **15:10** Associated Test Pit: **Not Applicable**
Weather: **Not Recorded** If Duplicate List Original Source: **Not Applicable**
Site Description: **Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**
Photographs: **No** Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: See Previous test pit/bore hole logs
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles:
Notes: Sample collected from 5 ft bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
5 ft	Not taken	See previous test pit/borehole logs

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: **CS-30** Logged by: **Loretta, Beck, Alvin (Gallup)**
Sample Location: **Fan Out Area** Project/Job#: **072-013-001 / 697-017-002**
Date: **10/1/2009** Samplers: **Loretta, Beck, Alvin (Gallup)**
Time: **15:15** Associated Test Pit: **Not Applicable**
Weather: **Not Recorded** If Duplicate List Original Source: **Not Applicable**
Site Description: **Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**
Photographs: **No** Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: See Previous test pit/bore hole logs
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles:
Notes: Sample collected from 5 ft bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
5 ft	Not taken	See previous test pit/borehole logs

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: **CS-31** Logged by: **Loretta, Beck, Alvin (Gallup)**
Sample Location: **Fan Out Area** Project/Job#: **072-013-001 / 697-017-002**
Date: **10/1/2009** Samplers: **Loretta, Beck, Alvin (Gallup)**
Time: **15:20** Associated Test Pit: **Not Applicable**
Weather: **Not Recorded** If Duplicate List Original Source: **Not Applicable**
Site Description: **Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**
Photographs: **No** Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: See Previous test pit/bore hole logs
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles:
Notes: Sample collected from 5 ft bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
5 ft	Not taken	See previous test pit/borehole logs

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: **A-1** Logged by: **Loretta, Beck, Alvin (Gallup)**
Sample Location: **Fan Out Area** Project/Job#: **072-013-001 / 697-017-002**
Date: **10/2/2009** Samplers: **Loretta, Beck, Alvin (Gallup)**
Time: **14:45** Associated Test Pit: **Not Applicable**
Weather: **Not Recorded** If Duplicate List Original Source: **Not Applicable**
Site Description: **Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**
Photographs: **No** Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: See Previous test pit/bore hole logs
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles:
Notes: Sample collected from 13 ft bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
13 ft	Not taken	See previous test pit/borehole logs

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: **A-2** Logged by: **Loretta, Beck, Alvin (Gallup)**
Sample Location: **Fan Out Area** Project/Job#: **072-013-001 / 697-017-002**
Date: **10/2/2009** Samplers: **Loretta, Beck, Alvin (Gallup)**
Time: **14:50** Associated Test Pit: **Not Applicable**
Weather: **Not Recorded** If Duplicate List Original Source: **Not Applicable**
Site Description: **Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**
Photographs: **No** Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: See Previous test pit/bore hole logs
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles:
Notes: Sample collected from 13 ft bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
13 ft	Not taken	See previous test pit/borehole logs

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: **A-3** Logged by: **Loretta, Beck, Alvin (Gallup)**
Sample Location: **Fan Out Area** Project/Job#: **072-013-001 / 697-017-002**
Date: **10/2/2009** Samplers: **Loretta, Beck, Alvin (Gallup)**
Time: **14:55** Associated Test Pit: **Not Applicable**
Weather: **Not Recorded** If Duplicate List Original Source: **Not Applicable**
Site Description: **Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**
Photographs: **No** Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: See Previous test pit/bore hole logs
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles:
Notes: Sample collected from 13 ft bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
13 ft	Not taken	See previous test pit/borehole logs

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-32	Logged by:	**G. Price**
Sample Location:	**Fan Out Area**	Project/Job#:	**072-013-001 / 697-017-002**
Date:	8/23/2010	Samplers:	Grant Price and Alvin Dorsey
Time:	11:50	Associated Test Pit	**Not Applicable**
Weather:	~80 degrees f., calm	If Duplicate List Original Source:	None
Site Description:	**Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**		
Photographs:	015	Coordinates(x,y,z):	

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: Light brown
Texture: See Previous test pit/bore hole logs
Moisture Content: **Dry** / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
loose, non-plastic
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 1 - 8 oz.
Notes: No odor, sidewall sample collected from 2.5' bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-33	Logged by:	**G. Price**
Sample Location:	**Fan Out Area**	Project/Job#:	**072-013-001 / 697-017-002**
Date:	8/23/2010	Samplers:	Grant Price and Alvin Dorsey
Time:	11:40	Associated Test Pit	**Not Applicable**
Weather:	~80 degrees f., calm	If Duplicate List Original Source:	BD2
Site Description:	**Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**		
Photographs:	014	Coordinates(x,y,z):	

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / **Moist** / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
soft, high plasticity
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 2 - 8 oz.
Notes: Moderate unidentifiable odor, sample collect from 5' bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-34	Logged by:	**G. Price**
Sample Location:	**Fan Out Area**	Project/Job#:	**072-013-001 / 697-017-002**
Date:	8/23/2010	Samplers:	Grant Price and Alvin Dorsey
Time:	12:00	Associated Test Pit	**Not Applicable**
Weather:	~80 degrees f., calm	If Duplicate List Original Source:	NA
Site Description:	**Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**		
Photographs:	016	Coordinates(x,y,z):	

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / **Moist** / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
soft, moderate plasticity, some fine grain sand.
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 1 - 8 oz.
Notes: No odor, sample collected from 5' bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-35	Logged by:	**G. Price**
Sample Location:	**Fan Out Area**	Project/Job#:	**072-013-001 / 697-017-002**
Date:	8/25/2010	Samplers:	Grant Price and Alvin Dorsey
Time:	10:30	Associated Test Pit	**Not Applicable**
Weather:	SE wind, ~75 degrees f.	If Duplicate List Original Source:	None
Site Description:	**Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**		
Photographs:	031	Coordinates(x,y,z):	

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / **Wet**
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Medium stiff, moderate plasticity, no odor.
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 1 - 8 oz.
Notes: Sample collected from 13' bgs with trackhoe.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-36	Logged by:	**G. Price**
Sample Location:	**Fan Out Area**	Project/Job#:	**072-013-001 / 697-017-002**
Date:	8/23/2010	Samplers:	Grant Price and Alvin Dorsey
Time:	10:00	Associated Test Pit	**Not Applicable**
Weather:	~80 degrees f.	If Duplicate List Original Source:	None
Site Description:	**Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**		
Photographs:	006	Coordinates(x,y,z):	

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / **Moist / Wet**
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
soft, high plasticity
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 1 - 8 oz.
Notes: slight stale water odor, sample collected from 7' bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-37	Logged by:	**G. Price**
Sample Location:	**Fan Out Area**	Project/Job#:	**072-013-001 / 697-017-002**
Date:	8/23/2010	Samplers:	Grant Price and Alvin Dorsey
Time:	12:10	Associated Test Pit	**Not Applicable**
Weather:	~80 degrees f., calm	If Duplicate List Original Source:	None
Site Description:	**Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**		
Photographs:	017	Coordinates(x,y,z):	

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: light brown
Texture: See Previous test pit/bore hole logs
Moisture Content: **Dry** / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
hard chunks, non-plastic.
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 1 - 8 oz.
Notes: No odor. Sidewall sample collected from 2.5' bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: CS-38 Logged by: **G. Price**
Sample Location: **Fan Out Area** Project/Job#: **072-013-001 / 697-017-002**
Date: 8/23/2010 Samplers: Grant Price and Alvin Dorsey
Time: 10:25 Associated Test Pit **Not Applicable**
Weather: ~80 degrees f., calm If Duplicate List Original Source: BD1
Site Description: **Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**
Photographs: 008 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry **/ Moist** / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
medium soft, high plasticity
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 2 - 8 oz.
Notes: No odor. Sample collected from 7' bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)		PID/FID Reading (ppm)	Description

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: CS-39 Logged by: **G. Price**
Sample Location: **Fan Out Area** Project/Job#: **072-013-001 / 697-017-002**
Date: 8/23/2010 Samplers: Grant Price and Alvin Dorsey
Time: 10:40 Associated Test Pit **Not Applicable**
Weather: ~80 degrees f., calm If Duplicate List Original Source: MS/MSD
Site Description: **Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**
Photographs: 009 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: brown
Texture: See Previous test pit/bore hole logs
Moisture Content: **Dry / Moist** / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Medium stiff, moderate plasticity
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 2 - 8 oz.
Notes: No odor. Sample collected from 5' bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: CS-40 Logged by: **G. Price**
Sample Location: **Fan Out Area** Project/Job#: **072-013-001 / 697-017-002**
Date: 8/23/2010 Samplers: Grant Price and Alvin Dorsey
Time: 10:50 Associated Test Pit **Not Applicable**
Weather: ~80 degrees f., calm If Duplicate List Original Source: None
Site Description: **Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**
Photographs: 010 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: brown
Texture: See Previous test pit/bore hole logs
Moisture Content: **Dry / Moist** / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Medium stiff, moderate plasticity
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 1 - 8 oz.
Notes: No odor. Sample collected from 5' bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-41	Logged by:	**G. Price**
Sample Location:	**Fan Out Area**	Project/Job#:	**072-013-001 / 697-017-002**
Date:	8/23/2010	Samplers:	Grant Price and Alvin Dorsey
Time:	11:10	Associated Test Pit	**Not Applicable**
Weather:	~80 degrees f., calm	If Duplicate List Original Source:	None
Site Description:	**Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**		
Photographs:	012	Coordinates(x,y,z):	

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: light brown
Texture: See Previous test pit/bore hole logs
Moisture Content: **Dry /** Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Hard, stiff, non-plastic
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 1 - 8 oz.
Notes: No odor. Some fine sand. Sample collected from 2.5' bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-42	Logged by:	**G. Price**
Sample Location:	**Fan Out Area**	Project/Job#:	**072-013-001 / 697-017-002**
Date:	8/23/2010	Samplers:	Grant Price and Alvin Dorsey
Time:	11:00	Associated Test Pit	**Not Applicable**
Weather:	~80 degrees f., calm	If Duplicate List Original Source:	None
Site Description:	**Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**		
Photographs:	011	Coordinates(x,y,z):	

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: light brown
Texture: See Previous test pit/bore hole logs
Moisture Content: **Dry /** Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Medium stiff to stiff, non-plastic.
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 1 - 8 oz.
Notes: No odor. Sidewall sample collected from 2.5' bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

APPENDIX C

BOREHOLE LOGS

TRIHYDRO CORPORATION

FIELD BORING LOG

Project & Project Number:	072-013-001	Date:	12/17/2007
Project Location/Address:	Gallup Refinery	Drilling Company:	Rodgers and Co.
Client:	Western	Driller:	John and Nick
Weather:	Calm, ~ 35 degrees F.	Rig Type / Method:	CME-75 HSA 6 3/4" (OD)
Logged by:	Grant Price	Sample Method (circle one):	Direct Push **Split Spoon** Shelby Tube Other:
		Surface Elevation:	Casing Elevation: GE Elevation:
Logger's Signature:		Equipment List:	

BORING ID: B8_12_17_B **Boring Location: Fan-Out Area**

Interval (ft bgs)	Texture - Grain Size Major	Texture - Grain Size Minor	Color Major	Color Modifier	Plasticity	Consistency	Moisture	Odor	PID Interval/Reading	Additional Comments (Odor descriptor, sheen, nodules, structure, vegitation, etc.)
0 - 7										See previous sample log.
7 - 9	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 9-16-28-42.
	Sand - F M C	**Some Sand**	Gray - L M D		Moderate	Soft	**Moist**	Moderate		
	Silt	Silty	**Brn - L M D**		**Low**	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		Non	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
7 - 12	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Logged from cuttings. Sand decreases with depth.
	Sand - F M C	**Trace Sand**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	Silty	**Brn - L M D**		**Low**	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		Non	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
12 - 14	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 13-14-20-21.
	Sand - F M C	**Sandy**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	Silty	**Brn - L M D**		Low	Firm	Saturated	Slight		
	Clay	**Trace Clay**	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
14 - 17	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Logged from cuttings.
	Sand - F M C	**Sandy**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	Silty	**Brn - L M D**		Low	Firm	Saturated	Slight		
	Clay	**Trace Clay**	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
17 - 19	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 9-16-20-21. 75 percent recovery. Sand and silt content decrease with depth.
	Sand - F M C	**Trace Sand**	Gray - L M D		**Moderate**	Soft	**Moist**	Moderate		
	Silt	**Trace Silt**	**Brn - L M D**		**Low**	**Firm**	Saturated	Slight		
	Clay	Clayey	Red - L M D		Non	Hard	--	**None Noted**		
			Other		--	Very Hard	--	--		
19 - 22	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Logged from cuttings.
	Sand - F M C	**Trace Sand**	Gray - L M D		**Moderate**	Soft	Moist	Moderate		
	Silt	**Trace Silt**	**Brn - L M D**		Low	**Firm**	Saturated	Slight		
	Clay	Clayey	Red - L M D		Non	Hard	--	**None Noted**		
			Other		--	Very Hard	--	--		
22 - 22.75	GVL - F M C	Grvlly	Black		High		Dry	Strong		Logged from split spoon, blow count = 4-6-9-13. Moist to wet, medium loose.
	Sand - F M C	Sandy	Gray - L M D		Moderate		**Moist**	Moderate		
	Silt	Silty	**Brn - L M D**		Low		Saturated	Slight		
	Clay	**Trace Clay**	Red - L M D		**Non**		--	**None Noted**		
			Other		--		--	--		
22.75 - 24	GVL - F M C	Grvlly	Black		High	Very Soft	Dry	Strong		Same split spoon as above interval. Total depth = 24 ft bgs.
	Sand - F M C	**Trace Sand**	Gray - L M D		**Moderate**	Soft	**Moist**	Moderate		
	Silt	Silty	**Brn - L M D**		Low	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		Non	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		

Sample Collected: Samples collected at 8, 13, 18, and 23 ft bgs

Sample ID: Location ID = "B" (formerly B8-NEW-SE-S1)

Date: 12/17/2007

Time: 11:30, 11:45, 11:55, and 12:05, respectively

Depth: 8, 13, 18, and 23 ft bgs

Number/Size of Containers: One 4-oz per sample

Analysis to be Performed: TPH-DRO by 8015B

Duplicate Collected: No.

Notes:

TRIHYDRO CORPORATION

FIELD BORING LOG

Project & Project Number:	072-013-001	Date:	12/17/2007
Project Location/Address:	Gallup Refinery	Drilling Company:	Rodgers and Co.
Client:	Western	Driller:	John and Nick
Weather:	Breezy, ~ 45 degrees F.	Rig Type / Method:	CME-75 HSA 6 3/4" (OD)
Logged by:	Grant Price	Sample Method (circle one):	Direct Push **Split Spoon** Shelby Tube Other:
		Surface Elevation:	Casing Elevation: GE Elevation:
Logger's Signature:		Equipment List:	

BORING ID: B8_12_17_K1 **Boring Location: Fan-Out Area**

Interval (ft bgs)	Texture - Grain Size Major	Texture - Grain Size Minor	Color Major	Color Modifier	Plasticity	Consistency	Moisture	Odor	PID Interval/Reading	Additional Comments (Odor descriptor, sheen, nodules, structure, vegitation, etc.)
0 - 2	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Logged from cuttings, wet at surface.
	Sand - F M C	Sandy	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	**Silty**	**Brn - L** M D		Low	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
2- 4	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 13-28-32-42
	Sand - F M C	Sandy	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	**Silty**	**Brn** - L **M** D		Low	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
4 - 7	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Logged from cuttings.
	Sand - F M C	**Sandy**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	**Silty**	**Brn** - L **M** D		Low	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
7 - 9	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 12-32-35-48.
	Sand - F M C	**Sandy**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	Silty	**Brn** - L **M** D		Low	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		**Non**	Hard	--	**None Noted**		
			Other		--	**Very Hard**	--	--		
9 - 12	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Logged from cuttings.
	Sand - F M C	**Some Sand**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	Silty	**Brn** - L **M** D		Low	Firm	Saturated	**Slight**		
	Clay	**Some Clay**	Red - L M D		**Non**	**Hard**	--	None Noted		
			Other		--	Very Hard	--	--		
12 - 14	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 12-19-22-31. TD = 14 ft bgs.
	Sand - F M C	Sandy	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	Silty	**Brn - L M** D		Low	**Firm**	Saturated	Slight		
	Clay	**Some Clay**	Red - L M D		**Non**	Hard	--	**None Noted**		
			Other		--	Very Hard	--	--		

Sample Collected: Samples collected at 3, 8, and 13 ft bgs

Sample ID: Location ID = "K1"

Date: 12/17/2007

Time: 15:50, 16:00, and 16:15, respectively

Depth: 3, 8, and 13 ft bgs

Number/Size of Containers: One 4-oz per sample

Analysis to be Performed: TPH-DRO by 8015B

Duplicate Collected: No.

Notes:

TRIHYDRO CORPORATION

FIELD BORING LOG

Project & Project Number:	072-013-001	Date:	12/17/2007
Project Location/Address:	Gallup Refinery	Drilling Company:	Rodgers and Co.
Client:	Western	Driller:	John and Nick
Weather:	Windy, ~ 45 degrees F.	Rig Type / Method:	CME-75 HSA 6 3/4" (OD)
Logged by:	Grant Price	Sample Method (circle one):	Direct Push **Split Spoon** Shelby Tube Other:
		Surface Elevation:	Casing Elevation: GE Elevation:
Logger's Signature:		Equipment List:	

BORING ID: B8_12_17_I1 **Boring Location: Fan-Out Area**

Interval (ft bgs)	Texture - Grain Size Major	Texture - Grain Size Minor	Color Major	Color Modifier	Plasticity	Consistency	Moisture	Odor	PID Interval/Reading	Additional Comments (Odor descriptor, sheen, nodules, structure, vegitation, etc.)
0 - 2	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Logged from cuttings, wet at surface.
	Sand - F M C	**Trace Sand**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	Silty	**Brn - L M D**		Low	**Firm**	Saturated	Slight		
	Clay	**Some Clay**	Red - L M D		**Non**	Hard	--	**None Noted**		
			Other		--	Very Hard	--	--		
2- 4	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 15-18-19-21
	Sand - F M C	**Sandy**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	Silty	**Brn - L M D**		Low	Firm	Saturated	Slight		
	Clay	**Some Clay**	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
4 - 7	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Logged from cuttings.
	Sand - F M C	Sandy	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	**Silty**	**Brn - L M D**		Low	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
7 - 9	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 15-32-31-33
	Sand - F M C	**Sandy**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	**Silty**	**Brn - L M D**		Low	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
9 - 12	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Logged from cuttings.
	Sand - F M C	**Sandy**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	**Silty**	**Brn - L M D**		Low	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
12 - 14	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 12-13-17-20. TD = 14 ft bgs.
	Sand - F M C	**Sandy**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	Silty	**Brn - L M D**		Low	**Firm**	Saturated	Slight		
	Clay	**Trace Clay**	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		

Sample Collected: Samples collected at 3, 8, and 13 ft bgs

Sample ID: Location ID = "I1"

Date: 12/17/2007

Time: 13:55, 14:05, and 14:15, respectively

Depth: 3, 8, and 13 ft bgs

Number/Size of Containers: One 4-oz per sample

Analysis to be Performed: TPH-DRO by 8015B

Duplicate Collected: BD 12_17_07 collected at 3 ft bgs

Notes:

TRIHYDRO CORPORATION

FIELD BORING LOG

Project & Project Number:	072-013-001	Date:	12/17/2007
Project Location/Address:	Gallup Refinery	Drilling Company:	Rodgers and Co.
Client:	Western	Driller:	John and Nick
Weather:	Calm, ~ 45 degrees F.	Rig Type / Method:	CME-75 HSA 6 3/4" (OD)
Logged by:	Grant Price	Sample Method (circle one):	Direct Push **Split Spoon** Shelby Tube Other:
		Surface Elevation:	Casing Elevation: GE Elevation:
Logger's Signature:		Equipment List:	

BORING ID: B8_12_17_G1 **Boring Location: Fan-Out Area**

Interval (ft bgs)	Texture - Grain Size Major	Texture - Grain Size Minor	Color Major	Color Modifier	Plasticity	Consistency	Moisture	Odor	PID Interval/Reading	Additional Comments (Odor descriptor, sheen, nodules, structure, vegitation, etc.)
0 - 2	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Logged from cuttings, wet at surface.
	Sand - F M C	**Some Sand**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	Silty	**Brn - L** M D		Low	**Firm**	Saturated	Slight		
	Clay	**Clayey**	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
2- 4	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 17-38-49-50/5"
	Sand - F M C	Sandy	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	**Silty**	**Brn** - L **M** D		Low	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		**Non**	Hard	--	**None Noted**		
			Other		--	**Very Hard**	--	--		
4 - 7	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Logged from cuttings.
	Sand - F M C	Sandy	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	**Silty**	**Brn** - L **M** D		Low	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		**Non**	Hard	--	**None Noted**		
			Other		--	**Very Hard**	--	--		
7 - 9	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 20-49-50-50.
	Sand - F M C	**Some Sand**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	**Silty**	**Brn** - L **M** D		Low	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		**Non**	Hard	--	**None Noted**		
			Other		--	**Very Hard**	--	--		
9 - 12	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Logged from cuttings.
	Sand - F M C	Sandy	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	**Silty**	**Brn** - L **M** D		Low	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		**Non**	Hard	--	**None Noted**		
			Other		--	**Very Hard**	--	--		
12 - 14	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 13-20-39-50/5". TD = 14 ft bgs.
	Sand - F M C	Sandy	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	Silty	**Brn** - L **M** D		Low	Firm	Saturated	Slight		
	Clay	**Clayey**	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		

Sample Collected: Samples collected at 3, 8, and 13 ft bgs

Sample ID: Location ID = "G1"

Date: 12/17/2007

Time: 15:05, 15:20, and 15:35, respectively

Depth: 3, 8, and 13 ft bgs

Number/Size of Containers: One 4-oz per sample

Analysis to be Performed: TPH-DRO by 8015B

Duplicate Collected: MS/MSD collected at 3 ft bgs interval

Notes:

TRIHYDRO CORPORATION

FIELD BORING LOG

Project & Project Number:	072-013-001	Date:	12/17/2007
Project Location/Address:	Gallup Refinery	Drilling Company:	Rodgers and Co.
Client:	Western	Driller:	John and Nick
Weather:	Windy, ~ 40 degrees F.	Rig Type / Method:	CME-75 HSA 6 3/4" (OD)
Logged by:	Grant Price	Sample Method (circle one):	Direct Push **Split Spoon** Shelby Tube Other:
		Surface Elevation:	Casing Elevation: GE Elevation:
Logger's Signature:		Equipment List:	

BORING ID: B8_12_17_M1 **Boring Location: Fan-Out Area**

Interval (ft bgs)	Texture - Grain Size Major	Texture - Grain Size Minor	Color Major	Color Modifier	Plasticity	Consistency	Moisture	Odor	PID Interval/Reading	Additional Comments (Odor descriptor, sheen, nodules, structure, vegitation, etc.)
0 - 2	GVL - F M C	Grvlly	Black		High	Very Soft	Dry	Strong		Logged from cuttings, wet at surface.
	Sand - F M C	Sandy	Gray - L M D		Moderate	Soft	**Moist**	Moderate		
	Silt	Silty	**Brn - L M D**		**Low**	**Firm**	Saturated	Slight		
	Clay	**Clayey**	Red - L M D		Non	Hard	--	**None Noted**		
			Other		--	Very Hard	--	--		
2- 4	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 12-19-22-24
	Sand - F M C	Sandy	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	Silty	**Brn - L M D**		**Low**	Firm	Saturated	Slight		
	Clay	**Clayey**	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
4 - 7	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Logged from cuttings. Sand content increases with depth.
	Sand - F M C	**Some Sand**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	**Some Silt**	**Brn - L M D**		**Low**	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
7 - 9	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 17-31-34-40.
	Sand - F M C	**Sandy**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	Silty	**Brn - L M D**		Low	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	**Very Hard**	--	--		
9 - 12	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Logged from cuttings.
	Sand - F M C	**Some Sand**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	Silty	**Brn - L M D**		Low	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
12 - 14	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 14-15-27-28. TD = 14 ft bgs.
	Sand - F M C	**Sandy**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	**Silty**	**Brn - L M D**		**Low**	**Firm**	Saturated	Slight		
	Clay	Clayey	Red - L M D		Non	Hard	--	**None Noted**		
			Other		--	Very Hard	--	--		

Sample Collected: Samples collected at 3, 8, and 13 ft bgs

Sample ID: Location ID = "M1"

Date: 12/17/2007

Time: 12:50, 13:00, and 13:10, respectively

Depth: 3, 8, and 13 ft bgs

Number/Size of Containers: One 4-oz per sample

Analysis to be Performed: TPH-DRO by 8015B

Duplicate Collected: No.

Notes:

APPENDIX D

ANALYTICAL DATA AND DATA VALIDATIONS

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Tuesday, November 14, 2006

Regina Allen
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-3833
FAX (505) 722-0210

RE: Fan Out Area Sampling

Order No.: 0610228

Dear Regina Allen:

Hall Environmental Analysis Laboratory, Inc. received 26 sample(s) on 10/20/2006 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001

4901 Hawkins NE ■Suite D ■Albuquerque, NM 87109
505.345.3975 ■Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc. Date: *14-Nov-06*

CLIENT:	Giant Refining Co
Project:	Fan Out Area Sampling
Lab Order:	0610228

CASE NARRATIVE

Analytical Comments for METHOD 8015DRO_S, SAMPLE 0610228-05B: DNOP not recovered due to dilution. See Corrective Action: [391] Low recovery & RPD problems for Se in 10228-11 MS/MSD & 10228-24 MS/MSD.

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B7-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 3:45:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-01	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	360	10		mg/Kg	1	10/24/2006 3:03:47 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/24/2006 3:03:47 PM
Surr: DNOP	85.2	61.7-135		%REC	1	10/24/2006 3:03:47 PM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	10/31/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	13		mg/Kg	5	11/6/2006 4:18:57 PM
Barium	230	0.50		mg/Kg	5	11/6/2006 4:18:57 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 4:18:57 PM
Chromium	11	1.5		mg/Kg	5	11/6/2006 4:18:57 PM
Lead	8.6	1.2		mg/Kg	5	11/6/2006 4:18:57 PM
Selenium	ND	13		mg/Kg	5	11/7/2006 9:20:17 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 4:18:57 PM
EPA METHOD 8260B: VOLATILES						Analyst: **LMM**
Benzene	ND	0.050		mg/Kg	1	10/23/2006
Toluene	ND	0.050		mg/Kg	1	10/23/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/23/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/23/2006
Naphthalene	ND	0.10		mg/Kg	1	10/23/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
Acetone	ND	0.75		mg/Kg	1	10/23/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/23/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromoform	ND	0.050		mg/Kg	1	10/23/2006
Bromomethane	ND	0.10		mg/Kg	1	10/23/2006
2-Butanone	ND	0.50		mg/Kg	1	10/23/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/23/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/23/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Chloroethane	ND	0.10		mg/Kg	1	10/23/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B7-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 3:45:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-01	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/23/2006
Chloromethane	ND	0.050		mg/Kg	1	10/23/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/23/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/23/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/23/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/23/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/23/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/23/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/23/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/23/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Styrene	ND	0.050		mg/Kg	1	10/23/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/23/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/23/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B7-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 3:45:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-01	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/23/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/23/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/23/2006
Surr: 1,2-Dichloroethane-d4	79.0	62-127		%REC	1	10/23/2006
Surr: 4-Bromofluorobenzene	103	75.2-127		%REC	1	10/23/2006
Surr: Dibromofluoromethane	76.5	68.1-120		%REC	1	10/23/2006
Surr: Toluene-d8	94.6	74-119		%REC	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B7-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 9:50:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-02	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/24/2006 3:38:34 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/24/2006 3:38:34 PM
Surr: DNOP	81.6	61.7-135		%REC	1	10/24/2006 3:38:34 PM
EPA METHOD 7471: MERCURY						Analyst: MAP
Mercury	ND	0.033		mg/Kg	1	10/31/2006
EPA METHOD 6010B: SOIL METALS						Analyst: CMS
Arsenic	ND	12		mg/Kg	5	11/6/2006 4:22:03 PM
Barium	280	1.0		mg/Kg	10	11/6/2006 5:29:11 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 4:22:03 PM
Chromium	10	1.5		mg/Kg	5	11/6/2006 4:22:03 PM
Lead	6.3	1.2		mg/Kg	5	11/6/2006 4:22:03 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 9:22:57 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 4:22:03 PM
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Benzene	ND	0.050		mg/Kg	1	10/23/2006
Toluene	ND	0.050		mg/Kg	1	10/23/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/23/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/23/2006
Naphthalene	ND	0.10		mg/Kg	1	10/23/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
Acetone	ND	0.75		mg/Kg	1	10/23/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/23/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromoform	ND	0.050		mg/Kg	1	10/23/2006
Bromomethane	ND	0.10		mg/Kg	1	10/23/2006
2-Butanone	ND	0.50		mg/Kg	1	10/23/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/23/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/23/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Chloroethane	ND	0.10		mg/Kg	1	10/23/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B7-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 9:50:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-02	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/23/2006
Chloromethane	ND	0.050		mg/Kg	1	10/23/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/23/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/23/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/23/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/23/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/23/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/23/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/23/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/23/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Styrene	ND	0.050		mg/Kg	1	10/23/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/23/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/23/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B7-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 9:50:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-02	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/23/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/23/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/23/2006
Surr: 1,2-Dichloroethane-d4	84.0	62-127		%REC	1	10/23/2006
Surr: 4-Bromofluorobenzene	98.1	75.2-127		%REC	1	10/23/2006
Surr: Dibromofluoromethane	83.2	68.1-120		%REC	1	10/23/2006
Surr: Toluene-d8	91.1	74-119		%REC	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B8-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 2:15:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-03	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	2400	100		mg/Kg	10	10/24/2006 11:46:51 PM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	10/24/2006 11:46:51 PM
Surr: DNOP	129	61.7-135		%REC	10	10/24/2006 11:46:51 PM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	10/31/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	12		mg/Kg	5	11/6/2006 4:26:01 PM
Barium	270	1.0		mg/Kg	10	11/6/2006 5:39:33 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 4:26:01 PM
Chromium	9.6	1.5		mg/Kg	5	11/6/2006 4:26:01 PM
Lead	8.5	1.2		mg/Kg	5	11/6/2006 4:26:01 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 9:25:24 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 4:26:01 PM
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **BL**
Acenaphthene	ND	1.0		mg/Kg	5	11/1/2006
Acenaphthylene	ND	1.0		mg/Kg	5	11/1/2006
Aniline	ND	1.0		mg/Kg	5	11/1/2006
Anthracene	ND	1.0		mg/Kg	5	11/1/2006
Azobenzene	ND	1.0		mg/Kg	5	11/1/2006
Benz(a)anthracene	ND	1.2		mg/Kg	5	11/1/2006
Benzo(a)pyrene	ND	1.0		mg/Kg	5	11/1/2006
Benzo(b)fluoranthene	ND	1.0		mg/Kg	5	11/1/2006
Benzo(g,h,i)perylene	ND	1.5		mg/Kg	5	11/1/2006
Benzo(k)fluoranthene	ND	2.5		mg/Kg	5	11/1/2006
Benzoic acid	ND	2.5		mg/Kg	5	11/1/2006
Benzyl alcohol	ND	5.0		mg/Kg	5	11/1/2006
Bis(2-chloroethoxy)methane	ND	2.5		mg/Kg	5	11/1/2006
Bis(2-chloroethyl)ether	ND	1.2		mg/Kg	5	11/1/2006
Bis(2-chloroisopropyl)ether	ND	2.5		mg/Kg	5	11/1/2006
Bis(2-ethylhexyl)phthalate	ND	1.0		mg/Kg	5	11/1/2006
4-Bromophenyl phenyl ether	ND	1.2		mg/Kg	5	11/1/2006
Butyl benzyl phthalate	ND	1.0		mg/Kg	5	11/1/2006
Carbazole	ND	1.0		mg/Kg	5	11/1/2006
4-Chloro-3-methylphenol	ND	1.0		mg/Kg	5	11/1/2006
4-Chloroaniline	ND	1.0		mg/Kg	5	11/1/2006
2-Chloronaphthalene	ND	1.0		mg/Kg	5	11/1/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B8-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 2:15:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-03	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: BL
2-Chlorophenol	ND	1.0		mg/Kg	5	11/1/2006
4-Chlorophenyl phenyl ether	ND	1.0		mg/Kg	5	11/1/2006
Chrysene	ND	1.0		mg/Kg	5	11/1/2006
Di-n-butyl phthalate	ND	2.5		mg/Kg	5	11/1/2006
Di-n-octyl phthalate	ND	2.5		mg/Kg	5	11/1/2006
Dibenz(a,h)anthracene	ND	1.2		mg/Kg	5	11/1/2006
Dibenzofuran	ND	2.5		mg/Kg	5	11/1/2006
1,2-Dichlorobenzene	ND	1.0		mg/Kg	5	11/1/2006
1,3-Dichlorobenzene	ND	1.0		mg/Kg	5	11/1/2006
1,4-Dichlorobenzene	ND	1.0		mg/Kg	5	11/1/2006
3,3'-Dichlorobenzidine	ND	1.0		mg/Kg	5	11/1/2006
Diethyl phthalate	ND	1.0		mg/Kg	5	11/1/2006
Dimethyl phthalate	ND	1.0		mg/Kg	5	11/1/2006
2,4-Dichlorophenol	ND	1.0		mg/Kg	5	11/1/2006
2,4-Dimethylphenol	ND	1.0		mg/Kg	5	11/1/2006
4,6-Dinitro-2-methylphenol	ND	2.5		mg/Kg	5	11/1/2006
2,4-Dinitrophenol	ND	2.5		mg/Kg	5	11/1/2006
2,4-Dinitrotoluene	ND	1.0		mg/Kg	5	11/1/2006
2,6-Dinitrotoluene	ND	1.0		mg/Kg	5	11/1/2006
Fluoranthene	ND	1.0		mg/Kg	5	11/1/2006
Fluorene	ND	1.0		mg/Kg	5	11/1/2006
Hexachlorobenzene	ND	1.0		mg/Kg	5	11/1/2006
Hexachlorobutadiene	ND	1.0		mg/Kg	5	11/1/2006
Hexachlorocyclopentadiene	ND	1.2		mg/Kg	5	11/1/2006
Hexachloroethane	ND	2.5		mg/Kg	5	11/1/2006
Indeno(1,2,3-cd)pyrene	ND	1.0		mg/Kg	5	11/1/2006
Isophorone	ND	1.0		mg/Kg	5	11/1/2006
2-Methylnaphthalene	ND	1.0		mg/Kg	5	11/1/2006
2-Methylphenol	ND	1.0		mg/Kg	5	11/1/2006
3+4-Methylphenol	ND	1.0		mg/Kg	5	11/1/2006
N-Nitrosodi-n-propylamine	ND	1.0		mg/Kg	5	11/1/2006
N-Nitrosodiphenylamine	ND	1.0		mg/Kg	5	11/1/2006
Naphthalene	ND	1.0		mg/Kg	5	11/1/2006
2-Nitroaniline	ND	2.5		mg/Kg	5	11/1/2006
3-Nitroaniline	ND	2.5		mg/Kg	5	11/1/2006
4-Nitroaniline	ND	1.2		mg/Kg	5	11/1/2006
Nitrobenzene	ND	1.0		mg/Kg	5	11/1/2006
2-Nitrophenol	ND	1.0		mg/Kg	5	11/1/2006
4-Nitrophenol	ND	1.0		mg/Kg	5	11/1/2006
Pentachlorophenol	ND	2.5		mg/Kg	5	11/1/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B8-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 2:15:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-03	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: BL
Phenanthrene	ND	1.0		mg/Kg	5	11/1/2006
Phenol	ND	1.0		mg/Kg	5	11/1/2006
Pyrene	ND	1.0		mg/Kg	5	11/1/2006
Pyridine	ND	2.5		mg/Kg	5	11/1/2006
1,2,4-Trichlorobenzene	ND	1.0		mg/Kg	5	11/1/2006
2,4,5-Trichlorophenol	ND	1.0		mg/Kg	5	11/1/2006
2,4,6-Trichlorophenol	ND	1.0		mg/Kg	5	11/1/2006
Surr: 2,4,6-Tribromophenol	53.9	35.5-141		%REC	5	11/1/2006
Surr: 2-Fluorobiphenyl	54.7	30.4-128		%REC	5	11/1/2006
Surr: 2-Fluorophenol	48.4	28.1-129		%REC	5	11/1/2006
Surr: 4-Terphenyl-d14	42.3	34.6-151		%REC	5	11/1/2006
Surr: Nitrobenzene-d5	38.3	26.5-122		%REC	5	11/1/2006
Surr: Phenol-d5	47.9	37.6-118		%REC	5	11/1/2006
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Benzene	ND	0.050		mg/Kg	1	10/23/2006
Toluene	ND	0.050		mg/Kg	1	10/23/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/23/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/23/2006
Naphthalene	ND	0.10		mg/Kg	1	10/23/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
Acetone	ND	0.75		mg/Kg	1	10/23/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/23/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromoform	ND	0.050		mg/Kg	1	10/23/2006
Bromomethane	ND	0.10		mg/Kg	1	10/23/2006
2-Butanone	ND	0.50		mg/Kg	1	10/23/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/23/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/23/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Chloroethane	ND	0.10		mg/Kg	1	10/23/2006
Chloroform	ND	0.050		mg/Kg	1	10/23/2006
Chloromethane	ND	0.050		mg/Kg	1	10/23/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B8-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 2:15:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-03	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/23/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/23/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/23/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/23/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/23/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/23/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/23/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/23/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Styrene	ND	0.050		mg/Kg	1	10/23/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/23/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/23/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/23/2006
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/23/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B8-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 2:15:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-03	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Xylenes, Total	ND	0.10		mg/Kg	1	10/23/2006
Surr: 1,2-Dichloroethane-d4	81.6	62-127		%REC	1	10/23/2006
Surr: 4-Bromofluorobenzene	92.5	75.2-127		%REC	1	10/23/2006
Surr: Dibromofluoromethane	80.0	68.1-120		%REC	1	10/23/2006
Surr: Toluene-d8	100	74-119		%REC	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B8-5'
Lab Order:	0610228	**Collection Date:**	10/17/2006 4:50:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-04	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	43	10		mg/Kg	1	10/25/2006 1:31:13 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 1:31:13 AM
Surr: DNOP	88.2	61.7-135		%REC	1	10/25/2006 1:31:13 AM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	10/31/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	13		mg/Kg	5	11/6/2006 4:29:04 PM
Barium	260	1.0		mg/Kg	10	11/6/2006 5:42:29 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 4:29:04 PM
Chromium	8.2	1.5		mg/Kg	5	11/6/2006 4:29:04 PM
Lead	8.9	1.2		mg/Kg	5	11/6/2006 4:29:04 PM
Selenium	ND	13		mg/Kg	5	11/7/2006 9:27:54 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 4:29:04 PM
EPA METHOD 8260B: VOLATILES						Analyst: **LMM**
Benzene	ND	0.050		mg/Kg	1	10/23/2006
Toluene	ND	0.050		mg/Kg	1	10/23/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/23/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/23/2006
Naphthalene	ND	0.10		mg/Kg	1	10/23/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
Acetone	ND	0.75		mg/Kg	1	10/23/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/23/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromoform	ND	0.050		mg/Kg	1	10/23/2006
Bromomethane	ND	0.10		mg/Kg	1	10/23/2006
2-Butanone	ND	0.50		mg/Kg	1	10/23/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/23/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/23/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Chloroethane	ND	0.10		mg/Kg	1	10/23/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B8-5'
Lab Order:	0610228	**Collection Date:**	10/17/2006 4:50:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-04	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/23/2006
Chloromethane	ND	0.050		mg/Kg	1	10/23/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/23/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/23/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/23/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/23/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/23/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/23/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/23/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/23/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Styrene	ND	0.050		mg/Kg	1	10/23/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/23/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/23/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:

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- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B8-5'
Lab Order:	0610228	**Collection Date:**	10/17/2006 4:50:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-04	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/23/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/23/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/23/2006
Surr: 1,2-Dichloroethane-d4	81.8	62-127		%REC	1	10/23/2006
Surr: 4-Bromofluorobenzene	92.8	75.2-127		%REC	1	10/23/2006
Surr: Dibromofluoromethane	80.7	68.1-120		%REC	1	10/23/2006
Surr: Toluene-d8	100	74-119		%REC	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B9-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 1:45:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-05	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	15000	200		mg/Kg	20	10/25/2006 2:06:04 AM
Motor Oil Range Organics (MRO)	ND	1000		mg/Kg	20	10/25/2006 2:06:04 AM
Surr: DNOP	0	61.7-135	S	%REC	20	10/25/2006 2:06:04 AM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	10/31/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	12		mg/Kg	5	11/6/2006 4:32:10 PM
Barium	220	0.50		mg/Kg	5	11/6/2006 4:32:10 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 4:32:10 PM
Chromium	8.5	1.5		mg/Kg	5	11/6/2006 4:32:10 PM
Lead	8.3	1.2		mg/Kg	5	11/6/2006 4:32:10 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 9:30:22 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 4:32:10 PM
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **BL**
Acenaphthene	ND	1.0		mg/Kg	5	11/1/2006
Acenaphthylene	ND	1.0		mg/Kg	5	11/1/2006
Aniline	ND	1.0		mg/Kg	5	11/1/2006
Anthracene	ND	1.0		mg/Kg	5	11/1/2006
Azobenzene	ND	1.0		mg/Kg	5	11/1/2006
Benz(a)anthracene	ND	1.2		mg/Kg	5	11/1/2006
Benzo(a)pyrene	ND	1.0		mg/Kg	5	11/1/2006
Benzo(b)fluoranthene	ND	1.0		mg/Kg	5	11/1/2006
Benzo(g,h,i)perylene	ND	1.5		mg/Kg	5	11/1/2006
Benzo(k)fluoranthene	ND	2.5		mg/Kg	5	11/1/2006
Benzoic acid	ND	2.5		mg/Kg	5	11/1/2006
Benzyl alcohol	ND	5.0		mg/Kg	5	11/1/2006
Bis(2-chloroethoxy)methane	ND	2.5		mg/Kg	5	11/1/2006
Bis(2-chloroethyl)ether	ND	1.2		mg/Kg	5	11/1/2006
Bis(2-chloroisopropyl)ether	ND	2.5		mg/Kg	5	11/1/2006
Bis(2-ethylhexyl)phthalate	ND	1.0		mg/Kg	5	11/1/2006
4-Bromophenyl phenyl ether	ND	1.2		mg/Kg	5	11/1/2006
Butyl benzyl phthalate	ND	1.0		mg/Kg	5	11/1/2006
Carbazole	ND	1.0		mg/Kg	5	11/1/2006
4-Chloro-3-methylphenol	ND	1.0		mg/Kg	5	11/1/2006
4-Chloroaniline	ND	1.0		mg/Kg	5	11/1/2006
2-Chloronaphthalene	ND	1.0		mg/Kg	5	11/1/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B9-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 1:45:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-05	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **BL**
2-Chlorophenol	ND	1.0		mg/Kg	5	11/1/2006
4-Chlorophenyl phenyl ether	ND	1.0		mg/Kg	5	11/1/2006
Chrysene	ND	1.0		mg/Kg	5	11/1/2006
Di-n-butyl phthalate	ND	2.5		mg/Kg	5	11/1/2006
Di-n-octyl phthalate	ND	2.5		mg/Kg	5	11/1/2006
Dibenz(a,h)anthracene	ND	1.2		mg/Kg	5	11/1/2006
Dibenzofuran	ND	2.5		mg/Kg	5	11/1/2006
1,2-Dichlorobenzene	ND	1.0		mg/Kg	5	11/1/2006
1,3-Dichlorobenzene	ND	1.0		mg/Kg	5	11/1/2006
1,4-Dichlorobenzene	ND	1.0		mg/Kg	5	11/1/2006
3,3'-Dichlorobenzidine	ND	1.0		mg/Kg	5	11/1/2006
Diethyl phthalate	ND	1.0		mg/Kg	5	11/1/2006
Dimethyl phthalate	ND	1.0		mg/Kg	5	11/1/2006
2,4-Dichlorophenol	ND	1.0		mg/Kg	5	11/1/2006
2,4-Dimethylphenol	ND	1.0		mg/Kg	5	11/1/2006
4,6-Dinitro-2-methylphenol	ND	2.5		mg/Kg	5	11/1/2006
2,4-Dinitrophenol	ND	2.5		mg/Kg	5	11/1/2006
2,4-Dinitrotoluene	ND	1.0		mg/Kg	5	11/1/2006
2,6-Dinitrotoluene	ND	1.0		mg/Kg	5	11/1/2006
Fluoranthene	ND	1.0		mg/Kg	5	11/1/2006
Fluorene	ND	1.0		mg/Kg	5	11/1/2006
Hexachlorobenzene	ND	1.0		mg/Kg	5	11/1/2006
Hexachlorobutadiene	ND	1.0		mg/Kg	5	11/1/2006
Hexachlorocyclopentadiene	ND	1.2		mg/Kg	5	11/1/2006
Hexachloroethane	ND	2.5		mg/Kg	5	11/1/2006
Indeno(1,2,3-cd)pyrene	ND	1.0		mg/Kg	5	11/1/2006
Isophorone	ND	1.0		mg/Kg	5	11/1/2006
2-Methylnaphthalene	ND	1.0		mg/Kg	5	11/1/2006
2-Methylphenol	ND	1.0		mg/Kg	5	11/1/2006
3+4-Methylphenol	ND	1.0		mg/Kg	5	11/1/2006
N-Nitrosodi-n-propylamine	ND	1.0		mg/Kg	5	11/1/2006
N-Nitrosodiphenylamine	ND	1.0		mg/Kg	5	11/1/2006
Naphthalene	ND	1.0		mg/Kg	5	11/1/2006
2-Nitroaniline	ND	2.5		mg/Kg	5	11/1/2006
3-Nitroaniline	ND	2.5		mg/Kg	5	11/1/2006
4-Nitroaniline	ND	1.2		mg/Kg	5	11/1/2006
Nitrobenzene	ND	1.0		mg/Kg	5	11/1/2006
2-Nitrophenol	ND	1.0		mg/Kg	5	11/1/2006
4-Nitrophenol	ND	1.0		mg/Kg	5	11/1/2006
Pentachlorophenol	ND	2.5		mg/Kg	5	11/1/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B9-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 1:45:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-05	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: BL
Phenanthrene	ND	1.0		mg/Kg	5	11/1/2006
Phenol	ND	1.0		mg/Kg	5	11/1/2006
Pyrene	ND	1.0		mg/Kg	5	11/1/2006
Pyridine	ND	2.5		mg/Kg	5	11/1/2006
1,2,4-Trichlorobenzene	ND	1.0		mg/Kg	5	11/1/2006
2,4,5-Trichlorophenol	ND	1.0		mg/Kg	5	11/1/2006
2,4,6-Trichlorophenol	ND	1.0		mg/Kg	5	11/1/2006
Surr: 2,4,6-Tribromophenol	59.2	35.5-141		%REC	5	11/1/2006
Surr: 2-Fluorobiphenyl	43.6	30.4-128		%REC	5	11/1/2006
Surr: 2-Fluorophenol	39.7	28.1-129		%REC	5	11/1/2006
Surr: 4-Terphenyl-d14	27.6	34.6-151	S	%REC	5	11/1/2006
Surr: Nitrobenzene-d5	47.2	26.5-122		%REC	5	11/1/2006
Surr: Phenol-d5	36.6	37.6-118	S	%REC	5	11/1/2006
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Benzene	ND	0.050		mg/Kg	1	10/24/2006
Toluene	ND	0.050		mg/Kg	1	10/24/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/24/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/24/2006
Naphthalene	ND	0.10		mg/Kg	1	10/24/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/24/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/24/2006
Acetone	ND	0.75		mg/Kg	1	10/24/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/24/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/24/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/24/2006
Bromoform	ND	0.050		mg/Kg	1	10/24/2006
Bromomethane	ND	0.10		mg/Kg	1	10/24/2006
2-Butanone	ND	0.50		mg/Kg	1	10/24/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/24/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/24/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
Chloroethane	ND	0.10		mg/Kg	1	10/24/2006
Chloroform	ND	0.050		mg/Kg	1	10/24/2006
Chloromethane	ND	0.050		mg/Kg	1	10/24/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B9-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 1:45:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-05	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/24/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/24/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/24/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/24/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/24/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/24/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/24/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/24/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/24/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/24/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/24/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/24/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/24/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/24/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/24/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/24/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/24/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
Styrene	ND	0.050		mg/Kg	1	10/24/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/24/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/24/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/24/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/24/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/24/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/24/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/24/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/24/2006
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/24/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/24/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B9-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 1:45:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-05	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Xylenes, Total	ND	0.10		mg/Kg	1	10/24/2006
Surr: 1,2-Dichloroethane-d4	77.2	62-127		%REC	1	10/24/2006
Surr: 4-Bromofluorobenzene	97.8	75.2-127		%REC	1	10/24/2006
Surr: Dibromofluoromethane	76.9	68.1-120		%REC	1	10/24/2006
Surr: Toluene-d8	104	74-119		%REC	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B9-5'
Lab Order:	0610228	**Collection Date:**	10/17/2006 4:05:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-06	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/25/2006 2:40:50 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 2:40:50 AM
Surr: DNOP	87.0	61.7-135		%REC	1	10/25/2006 2:40:50 AM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	10/31/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	12		mg/Kg	5	11/6/2006 4:38:16 PM
Barium	310	1.0		mg/Kg	10	11/6/2006 5:45:25 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 4:38:16 PM
Chromium	9.1	1.5		mg/Kg	5	11/6/2006 4:38:16 PM
Lead	7.1	1.2		mg/Kg	5	11/6/2006 4:38:16 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 9:32:49 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 4:38:16 PM
EPA METHOD 8260B: VOLATILES						Analyst: **LMM**
Benzene	ND	0.050		mg/Kg	1	10/23/2006
Toluene	ND	0.050		mg/Kg	1	10/23/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/23/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/23/2006
Naphthalene	ND	0.10		mg/Kg	1	10/23/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
Acetone	ND	0.75		mg/Kg	1	10/23/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/23/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromoform	ND	0.050		mg/Kg	1	10/23/2006
Bromomethane	ND	0.10		mg/Kg	1	10/23/2006
2-Butanone	ND	0.50		mg/Kg	1	10/23/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/23/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/23/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Chloroethane	ND	0.10		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B9-5'
Lab Order:	0610228	**Collection Date:**	10/17/2006 4:05:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-06	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/23/2006
Chloromethane	ND	0.050		mg/Kg	1	10/23/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/23/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/23/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/23/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/23/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/23/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/23/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/23/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/23/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Styrene	ND	0.050		mg/Kg	1	10/23/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/23/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/23/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B9-5'
Lab Order:	0610228	**Collection Date:**	10/17/2006 4:05:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-06	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/23/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/23/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/23/2006
Surr: 1,2-Dichloroethane-d4	77.0	62-127		%REC	1	10/23/2006
Surr: 4-Bromofluorobenzene	98.8	75.2-127		%REC	1	10/23/2006
Surr: Dibromofluoromethane	77.1	68.1-120		%REC	1	10/23/2006
Surr: Toluene-d8	97.2	74-119		%REC	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B10-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 3:05:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-07	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	63	10		mg/Kg	1	10/25/2006 3:15:36 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 3:15:36 AM
Surr: DNOP	87.8	61.7-135		%REC	1	10/25/2006 3:15:36 AM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	10/31/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	12		mg/Kg	5	11/6/2006 4:41:15 PM
Barium	280	1.0		mg/Kg	10	11/6/2006 5:51:19 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 4:41:15 PM
Chromium	9.5	1.5		mg/Kg	5	11/6/2006 4:41:15 PM
Lead	8.4	1.2		mg/Kg	5	11/6/2006 4:41:15 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 9:35:35 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 4:41:15 PM
EPA METHOD 8260B: VOLATILES						Analyst: **LMM**
Benzene	ND	0.050		mg/Kg	1	10/23/2006
Toluene	ND	0.050		mg/Kg	1	10/23/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/23/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/23/2006
Naphthalene	ND	0.10		mg/Kg	1	10/23/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
Acetone	ND	0.75		mg/Kg	1	10/23/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/23/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromoform	ND	0.050		mg/Kg	1	10/23/2006
Bromomethane	ND	0.10		mg/Kg	1	10/23/2006
2-Butanone	ND	0.50		mg/Kg	1	10/23/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/23/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/23/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Chloroethane	ND	0.10		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B10-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 3:05:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-07	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/23/2006
Chloromethane	ND	0.050		mg/Kg	1	10/23/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/23/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/23/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/23/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/23/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/23/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/23/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/23/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/23/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Styrene	ND	0.050		mg/Kg	1	10/23/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/23/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/23/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B10-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 3:05:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-07	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/23/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/23/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/23/2006
Surr: 1,2-Dichloroethane-d4	81.9	62-127		%REC	1	10/23/2006
Surr: 4-Bromofluorobenzene	102	75.2-127		%REC	1	10/23/2006
Surr: Dibromofluoromethane	82.8	68.1-120		%REC	1	10/23/2006
Surr: Toluene-d8	92.8	74-119		%REC	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B10-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 9:15:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-08	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/25/2006 6:09:35 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 6:09:35 AM
Surr: DNOP	88.0	61.7-135		%REC	1	10/25/2006 6:09:35 AM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	10/31/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	12		mg/Kg	5	11/6/2006 4:54:20 PM
Barium	230	0.50		mg/Kg	5	11/6/2006 4:54:20 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 4:54:20 PM
Chromium	9.3	1.5		mg/Kg	5	11/6/2006 4:54:20 PM
Lead	6.3	1.2		mg/Kg	5	11/6/2006 4:54:20 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 9:47:10 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 4:54:20 PM
EPA METHOD 8260B: VOLATILES						Analyst: **LMM**
Benzene	ND	0.050		mg/Kg	1	10/23/2006
Toluene	ND	0.050		mg/Kg	1	10/23/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/23/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/23/2006
Naphthalene	ND	0.10		mg/Kg	1	10/23/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
Acetone	ND	0.75		mg/Kg	1	10/23/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/23/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromoform	ND	0.050		mg/Kg	1	10/23/2006
Bromomethane	ND	0.10		mg/Kg	1	10/23/2006
2-Butanone	ND	0.50		mg/Kg	1	10/23/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/23/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/23/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Chloroethane	ND	0.10		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B10-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 9:15:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-08	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/23/2006
Chloromethane	ND	0.050		mg/Kg	1	10/23/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/23/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/23/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/23/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/23/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/23/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/23/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/23/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/23/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Styrene	ND	0.050		mg/Kg	1	10/23/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/23/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/23/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B10-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 9:15:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-08	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/23/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/23/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/23/2006
Surr: 1,2-Dichloroethane-d4	83.8	62-127		%REC	1	10/23/2006
Surr: 4-Bromofluorobenzene	99.6	75.2-127		%REC	1	10/23/2006
Surr: Dibromofluoromethane	81.9	68.1-120		%REC	1	10/23/2006
Surr: Toluene-d8	97.1	74-119		%REC	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	BD101806
Lab Order:	0610228	**Collection Date:**	10/18/2006
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-11	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/25/2006 9:03:32 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 9:03:32 AM
Surr: DNOP	78.5	61.7-135		%REC	1	10/25/2006 9:03:32 AM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	10/31/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	12		mg/Kg	5	11/6/2006 5:10:31 PM
Barium	290	1.0		mg/Kg	10	11/6/2006 6:01:53 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 5:10:31 PM
Chromium	9.4	1.5		mg/Kg	5	11/6/2006 5:10:31 PM
Lead	10	1.2		mg/Kg	5	11/6/2006 5:10:31 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 9:54:39 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 5:10:31 PM
EPA METHOD 8260B: VOLATILES						Analyst: **LMM**
Benzene	ND	0.050		mg/Kg	1	10/23/2006
Toluene	ND	0.050		mg/Kg	1	10/23/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/23/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/23/2006
Naphthalene	ND	0.10		mg/Kg	1	10/23/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
Acetone	ND	0.75		mg/Kg	1	10/23/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/23/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromoform	ND	0.050		mg/Kg	1	10/23/2006
Bromomethane	ND	0.10		mg/Kg	1	10/23/2006
2-Butanone	ND	0.50		mg/Kg	1	10/23/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/23/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/23/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Chloroethane	ND	0.10		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	BD101806
Lab Order:	0610228	**Collection Date:**	10/18/2006
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-11	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/23/2006
Chloromethane	ND	0.050		mg/Kg	1	10/23/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/23/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/23/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/23/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/23/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/23/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/23/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/23/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/23/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Styrene	ND	0.050		mg/Kg	1	10/23/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/23/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/23/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	BD101806
Lab Order:	0610228	**Collection Date:**	10/18/2006
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-11	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/23/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/23/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/23/2006
Surr: 1,2-Dichloroethane-d4	84.8	62-127		%REC	1	10/23/2006
Surr: 4-Bromofluorobenzene	98.5	75.2-127		%REC	1	10/23/2006
Surr: Dibromofluoromethane	84.4	68.1-120		%REC	1	10/23/2006
Surr: Toluene-d8	99.9	74-119		%REC	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	Trip Blank
Lab Order:	0610228	**Collection Date:**	
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-12	**Matrix:**	TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Benzene	ND	1.0		µg/L	1	10/20/2006
Toluene	ND	1.0		µg/L	1	10/20/2006
Ethylbenzene	ND	1.0		µg/L	1	10/20/2006
Methyl tert-butyl ether (MTBE)	ND	1.5		µg/L	1	10/20/2006
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	10/20/2006
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	10/20/2006
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/20/2006
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/20/2006
Naphthalene	ND	2.0		µg/L	1	10/20/2006
1-Methylnaphthalene	ND	4.0		µg/L	1	10/20/2006
2-Methylnaphthalene	ND	4.0		µg/L	1	10/20/2006
Acetone	ND	10		µg/L	1	10/20/2006
Bromobenzene	ND	1.0		µg/L	1	10/20/2006
Bromochloromethane	ND	1.0		µg/L	1	10/20/2006
Bromodichloromethane	ND	1.0		µg/L	1	10/20/2006
Bromoform	ND	1.0		µg/L	1	10/20/2006
Bromomethane	ND	2.0		µg/L	1	10/20/2006
2-Butanone	ND	10		µg/L	1	10/20/2006
Carbon disulfide	ND	10		µg/L	1	10/20/2006
Carbon Tetrachloride	ND	2.0		µg/L	1	10/20/2006
Chlorobenzene	ND	1.0		µg/L	1	10/20/2006
Chloroethane	ND	2.0		µg/L	1	10/20/2006
Chloroform	ND	1.0		µg/L	1	10/20/2006
Chloromethane	ND	1.0		µg/L	1	10/20/2006
2-Chlorotoluene	ND	1.0		µg/L	1	10/20/2006
4-Chlorotoluene	ND	1.0		µg/L	1	10/20/2006
cis-1,2-DCE	ND	1.0		µg/L	1	10/20/2006
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/20/2006
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/20/2006
Dibromochloromethane	ND	1.0		µg/L	1	10/20/2006
Dibromomethane	ND	2.0		µg/L	1	10/20/2006
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/20/2006
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/20/2006
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/20/2006
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/20/2006
1,1-Dichloroethane	ND	2.0		µg/L	1	10/20/2006
1,1-Dichloroethene	ND	1.0		µg/L	1	10/20/2006
1,2-Dichloropropane	ND	1.0		µg/L	1	10/20/2006
1,3-Dichloropropane	ND	1.0		µg/L	1	10/20/2006
2,2-Dichloropropane	ND	2.0		µg/L	1	10/20/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	Trip Blank
Lab Order:	0610228	**Collection Date:**	
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-12	**Matrix:**	TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
1,1-Dichloropropene	ND	1.0		µg/L	1	10/20/2006
Hexachlorobutadiene	ND	2.0		µg/L	1	10/20/2006
2-Hexanone	ND	10		µg/L	1	10/20/2006
Isopropylbenzene	ND	1.0		µg/L	1	10/20/2006
4-Isopropyltoluene	ND	1.0		µg/L	1	10/20/2006
4-Methyl-2-pentanone	ND	10		µg/L	1	10/20/2006
Methylene Chloride	ND	3.0		µg/L	1	10/20/2006
n-Butylbenzene	ND	1.0		µg/L	1	10/20/2006
n-Propylbenzene	ND	1.0		µg/L	1	10/20/2006
sec-Butylbenzene	ND	2.0		µg/L	1	10/20/2006
Styrene	ND	1.5		µg/L	1	10/20/2006
tert-Butylbenzene	ND	1.0		µg/L	1	10/20/2006
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/20/2006
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	10/20/2006
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/20/2006
trans-1,2-DCE	ND	1.0		µg/L	1	10/20/2006
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/20/2006
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/20/2006
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/20/2006
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/20/2006
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/20/2006
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/20/2006
Trichlorofluoromethane	ND	1.0		µg/L	1	10/20/2006
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/20/2006
Vinyl chloride	ND	1.0		µg/L	1	10/20/2006
Xylenes, Total	ND	3.0		µg/L	1	10/20/2006
Surr: 1,2-Dichloroethane-d4	88.4	69.9-130		%REC	1	10/20/2006
Surr: 4-Bromofluorobenzene	113	75-139		%REC	1	10/20/2006
Surr: Dibromofluoromethane	89.7	57.3-135		%REC	1	10/20/2006
Surr: Toluene-d8	101	81.9-122		%REC	1	10/20/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B1-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 8:55:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-13	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	470	100		mg/Kg	10	10/25/2006 10:05:08 AM
Motor Oil Range Organics (MRO)	720	500		mg/Kg	10	10/25/2006 10:05:08 AM
Surr: DNOP	130	61.7-135		%REC	10	10/25/2006 10:05:08 AM
EPA METHOD 7471: MERCURY						Analyst: MAP
Mercury	ND	0.033		mg/Kg	1	10/31/2006
EPA METHOD 6010B: SOIL METALS						Analyst: CMS
Arsenic	ND	13		mg/Kg	5	11/6/2006 5:16:38 PM
Barium	280	1.0		mg/Kg	10	11/6/2006 6:04:49 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 5:16:38 PM
Chromium	11	1.5		mg/Kg	5	11/6/2006 5:16:38 PM
Lead	7.9	1.2		mg/Kg	5	11/6/2006 5:16:38 PM
Selenium	ND	13		mg/Kg	5	11/7/2006 9:57:07 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 5:16:38 PM
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Benzene	ND	0.050		mg/Kg	1	10/23/2006
Toluene	ND	0.050		mg/Kg	1	10/23/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/23/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/23/2006
Naphthalene	ND	0.10		mg/Kg	1	10/23/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
Acetone	ND	0.75		mg/Kg	1	10/23/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/23/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromoform	ND	0.050		mg/Kg	1	10/23/2006
Bromomethane	ND	0.10		mg/Kg	1	10/23/2006
2-Butanone	ND	0.50		mg/Kg	1	10/23/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/23/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/23/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Chloroethane	ND	0.10		mg/Kg	1	10/23/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B1-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 8:55:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-13	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/23/2006
Chloromethane	ND	0.050		mg/Kg	1	10/23/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/23/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/23/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/23/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/23/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/23/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/23/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/23/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/23/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Styrene	ND	0.050		mg/Kg	1	10/23/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/23/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/23/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B1-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 8:55:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-13	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/23/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/23/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/23/2006
Surr: 1,2-Dichloroethane-d4	79.8	62-127		%REC	1	10/23/2006
Surr: 4-Bromofluorobenzene	95.3	75.2-127		%REC	1	10/23/2006
Surr: Dibromofluoromethane	77.4	68.1-120		%REC	1	10/23/2006
Surr: Toluene-d8	92.4	74-119		%REC	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B1-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 11:40:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-14	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/25/2006 10:39:54 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 10:39:54 AM
Surr: DNOP	84.9	61.7-135		%REC	1	10/25/2006 10:39:54 AM
EPA METHOD 7471: MERCURY						Analyst: MAP
Mercury	ND	0.033		mg/Kg	1	11/1/2006
EPA METHOD 6010B: SOIL METALS						Analyst: CMS
Arsenic	ND	12		mg/Kg	5	11/6/2006 1:14:42 PM
Barium	300	1.0		mg/Kg	10	11/6/2006 2:36:55 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 1:14:42 PM
Chromium	8.8	1.5		mg/Kg	5	11/6/2006 1:14:42 PM
Lead	5.0	1.2		mg/Kg	5	11/6/2006 1:14:42 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 10:52:08 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 1:14:42 PM
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Benzene	ND	0.050		mg/Kg	1	10/23/2006
Toluene	ND	0.050		mg/Kg	1	10/23/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/23/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/23/2006
Naphthalene	ND	0.10		mg/Kg	1	10/23/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
Acetone	ND	0.75		mg/Kg	1	10/23/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/23/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromoform	ND	0.050		mg/Kg	1	10/23/2006
Bromomethane	ND	0.10		mg/Kg	1	10/23/2006
2-Butanone	ND	0.50		mg/Kg	1	10/23/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/23/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/23/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Chloroethane	ND	0.10		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B1-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 11:40:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-14	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/23/2006
Chloromethane	ND	0.050		mg/Kg	1	10/23/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/23/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/23/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/23/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/23/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/23/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/23/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/23/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/23/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Styrene	ND	0.050		mg/Kg	1	10/23/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/23/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/23/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B1-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 11:40:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-14	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/23/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/23/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/23/2006
Surr: 1,2-Dichloroethane-d4	80.5	62-127		%REC	1	10/23/2006
Surr: 4-Bromofluorobenzene	105	75.2-127		%REC	1	10/23/2006
Surr: Dibromofluoromethane	79.9	68.1-120		%REC	1	10/23/2006
Surr: Toluene-d8	101	74-119		%REC	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B2-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 2:00:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-15	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/25/2006 11:49:24 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 11:49:24 AM
Surr: DNOP	86.8	61.7-135		%REC	1	10/25/2006 11:49:24 AM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	11/1/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	13		mg/Kg	5	11/6/2006 1:17:38 PM
Barium	260	1.0		mg/Kg	10	11/6/2006 2:39:56 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 1:17:38 PM
Chromium	10	1.5		mg/Kg	5	11/6/2006 1:17:38 PM
Lead	7.0	1.2		mg/Kg	5	11/6/2006 1:17:38 PM
Selenium	ND	13		mg/Kg	5	11/7/2006 10:54:37 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 1:17:38 PM
EPA METHOD 8260B: VOLATILES						Analyst: **LMM**
Benzene	ND	0.050		mg/Kg	1	10/23/2006
Toluene	ND	0.050		mg/Kg	1	10/23/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/23/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/23/2006
Naphthalene	ND	0.10		mg/Kg	1	10/23/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
Acetone	ND	0.75		mg/Kg	1	10/23/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/23/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromoform	ND	0.050		mg/Kg	1	10/23/2006
Bromomethane	ND	0.10		mg/Kg	1	10/23/2006
2-Butanone	ND	0.50		mg/Kg	1	10/23/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/23/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/23/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Chloroethane	ND	0.10		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B2-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 2:00:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-15	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/23/2006
Chloromethane	ND	0.050		mg/Kg	1	10/23/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/23/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/23/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/23/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/23/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/23/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/23/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/23/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/23/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Styrene	ND	0.050		mg/Kg	1	10/23/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/23/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/23/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B2-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 2:00:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-15	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/23/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/23/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/23/2006
Surr: 1,2-Dichloroethane-d4	81.2	62-127		%REC	1	10/23/2006
Surr: 4-Bromofluorobenzene	95.9	75.2-127		%REC	1	10/23/2006
Surr: Dibromofluoromethane	81.7	68.1-120		%REC	1	10/23/2006
Surr: Toluene-d8	88.9	74-119		%REC	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B2-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 3:10:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-16	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/25/2006 12:24:12 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 12:24:12 PM
Surr: DNOP	86.6	61.7-135		%REC	1	10/25/2006 12:24:12 PM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	11/1/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	12		mg/Kg	5	11/6/2006 1:24:42 PM
Barium	290	1.0		mg/Kg	10	11/6/2006 2:42:52 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 1:24:42 PM
Chromium	9.3	1.5		mg/Kg	5	11/6/2006 1:24:42 PM
Lead	5.9	1.2		mg/Kg	5	11/6/2006 1:24:42 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 10:57:04 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 1:24:42 PM
EPA METHOD 8260B: VOLATILES						Analyst: **LMM**
Benzene	ND	0.050		mg/Kg	1	10/23/2006
Toluene	ND	0.050		mg/Kg	1	10/23/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/23/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/23/2006
Naphthalene	ND	0.10		mg/Kg	1	10/23/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
Acetone	ND	0.75		mg/Kg	1	10/23/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/23/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromoform	ND	0.050		mg/Kg	1	10/23/2006
Bromomethane	ND	0.10		mg/Kg	1	10/23/2006
2-Butanone	ND	0.50		mg/Kg	1	10/23/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/23/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/23/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Chloroethane	ND	0.10		mg/Kg	1	10/23/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B2-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 3:10:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-16	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/23/2006
Chloromethane	ND	0.050		mg/Kg	1	10/23/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/23/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/23/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/23/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/23/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/23/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/23/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/23/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/23/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Styrene	ND	0.050		mg/Kg	1	10/23/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/23/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/23/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B2-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 3:10:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-16	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/23/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/23/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/23/2006
Surr: 1,2-Dichloroethane-d4	80.9	62-127		%REC	1	10/23/2006
Surr: 4-Bromofluorobenzene	97.1	75.2-127		%REC	1	10/23/2006
Surr: Dibromofluoromethane	79.1	68.1-120		%REC	1	10/23/2006
Surr: Toluene-d8	99.5	74-119		%REC	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B3-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 10:50:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-17	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/25/2006 12:59:04 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 12:59:04 PM
Surr: DNOP	85.3	61.7-135		%REC	1	10/25/2006 12:59:04 PM
EPA METHOD 7471: MERCURY						Analyst: MAP
Mercury	ND	0.033		mg/Kg	1	11/1/2006
EPA METHOD 6010B: SOIL METALS						Analyst: CMS
Arsenic	ND	12		mg/Kg	5	11/6/2006 1:30:21 PM
Barium	260	1.0		mg/Kg	10	11/6/2006 2:45:50 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 1:30:21 PM
Chromium	9.0	1.5		mg/Kg	5	11/6/2006 1:30:21 PM
Lead	11	1.2		mg/Kg	5	11/6/2006 1:30:21 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 10:59:30 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 1:30:21 PM
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Benzene	ND	0.050		mg/Kg	1	10/23/2006
Toluene	ND	0.050		mg/Kg	1	10/23/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/23/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/23/2006
Naphthalene	ND	0.10		mg/Kg	1	10/23/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
Acetone	ND	0.75		mg/Kg	1	10/23/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/23/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromoform	ND	0.050		mg/Kg	1	10/23/2006
Bromomethane	ND	0.10		mg/Kg	1	10/23/2006
2-Butanone	ND	0.50		mg/Kg	1	10/23/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/23/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/23/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Chloroethane	ND	0.10		mg/Kg	1	10/23/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B3-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 10:50:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-17	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/23/2006
Chloromethane	ND	0.050		mg/Kg	1	10/23/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/23/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/23/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/23/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/23/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/23/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/23/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/23/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/23/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Styrene	ND	0.050		mg/Kg	1	10/23/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/23/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/23/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B3-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 10:50:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-17	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/23/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/23/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/23/2006
Surr: 1,2-Dichloroethane-d4	81.6	62-127		%REC	1	10/23/2006
Surr: 4-Bromofluorobenzene	96.0	75.2-127		%REC	1	10/23/2006
Surr: Dibromofluoromethane	80.9	68.1-120		%REC	1	10/23/2006
Surr: Toluene-d8	90.4	74-119		%REC	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B3-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 12:15:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-18	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/25/2006 1:34:07 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 1:34:07 PM
Surr: DNOP	89.1	61.7-135		%REC	1	10/25/2006 1:34:07 PM
EPA METHOD 7471: MERCURY						Analyst: MAP
Mercury	ND	0.033		mg/Kg	1	11/1/2006
EPA METHOD 6010B: SOIL METALS						Analyst: CMS
Arsenic	ND	12		mg/Kg	5	11/6/2006 1:33:18 PM
Barium	290	1.0		mg/Kg	10	11/6/2006 2:48:47 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 1:33:18 PM
Chromium	9.4	1.5		mg/Kg	5	11/6/2006 1:33:18 PM
Lead	8.3	1.2		mg/Kg	5	11/6/2006 1:33:18 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 11:01:58 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 1:33:18 PM
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Benzene	ND	0.050		mg/Kg	1	10/23/2006
Toluene	ND	0.050		mg/Kg	1	10/23/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/23/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/23/2006
Naphthalene	ND	0.10		mg/Kg	1	10/23/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
Acetone	ND	0.75		mg/Kg	1	10/23/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/23/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromoform	ND	0.050		mg/Kg	1	10/23/2006
Bromomethane	ND	0.10		mg/Kg	1	10/23/2006
2-Butanone	ND	0.50		mg/Kg	1	10/23/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/23/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/23/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Chloroethane	ND	0.10		mg/Kg	1	10/23/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B3-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 12:15:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-18	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/23/2006
Chloromethane	ND	0.050		mg/Kg	1	10/23/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/23/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/23/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/23/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/23/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/23/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/23/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/23/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/23/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Styrene	ND	0.050		mg/Kg	1	10/23/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/23/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/23/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B3-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 12:15:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-18	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/23/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/23/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/23/2006
Surr: 1,2-Dichloroethane-d4	82.8	62-127		%REC	1	10/23/2006
Surr: 4-Bromofluorobenzene	104	75.2-127		%REC	1	10/23/2006
Surr: Dibromofluoromethane	80.5	68.1-120		%REC	1	10/23/2006
Surr: Toluene-d8	92.9	74-119		%REC	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B4-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 8:40:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-19	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/25/2006 2:09:15 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 2:09:15 PM
Surr: DNOP	85.6	61.7-135		%REC	1	10/25/2006 2:09:15 PM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	11/1/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	12		mg/Kg	5	11/6/2006 1:37:13 PM
Barium	250	0.50		mg/Kg	5	11/6/2006 1:37:13 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 1:37:13 PM
Chromium	11	1.5		mg/Kg	5	11/6/2006 1:37:13 PM
Lead	8.1	1.2		mg/Kg	5	11/6/2006 1:37:13 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 11:04:25 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 1:37:13 PM
EPA METHOD 8260B: VOLATILES						Analyst: **LMM**
Benzene	ND	0.050		mg/Kg	1	10/24/2006
Toluene	ND	0.050		mg/Kg	1	10/24/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/24/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/24/2006
Naphthalene	ND	0.10		mg/Kg	1	10/24/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/24/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/24/2006
Acetone	ND	0.75		mg/Kg	1	10/24/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/24/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/24/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/24/2006
Bromoform	ND	0.050		mg/Kg	1	10/24/2006
Bromomethane	ND	0.10		mg/Kg	1	10/24/2006
2-Butanone	ND	0.50		mg/Kg	1	10/24/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/24/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/24/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
Chloroethane	ND	0.10		mg/Kg	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B4-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 8:40:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-19	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/24/2006
Chloromethane	ND	0.050		mg/Kg	1	10/24/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/24/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/24/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/24/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/24/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/24/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/24/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/24/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/24/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/24/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/24/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/24/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/24/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/24/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/24/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/24/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/24/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/24/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/24/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
Styrene	ND	0.050		mg/Kg	1	10/24/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/24/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/24/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/24/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/24/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/24/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/24/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/24/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B4-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 8:40:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-19	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/24/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/24/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/24/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/24/2006
Surr: 1,2-Dichloroethane-d4	80.2	62-127		%REC	1	10/24/2006
Surr: 4-Bromofluorobenzene	93.0	75.2-127		%REC	1	10/24/2006
Surr: Dibromofluoromethane	79.3	68.1-120		%REC	1	10/24/2006
Surr: Toluene-d8	100	74-119		%REC	1	10/24/2006

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B4-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 11:15:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-20	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/25/2006 2:44:22 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 2:44:22 PM
Surr: DNOP	86.7	61.7-135		%REC	1	10/25/2006 2:44:22 PM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	11/1/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	12		mg/Kg	5	11/6/2006 1:48:41 PM
Barium	230	0.50		mg/Kg	5	11/6/2006 1:48:41 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 1:48:41 PM
Chromium	11	1.5		mg/Kg	5	11/6/2006 1:48:41 PM
Lead	7.6	1.2		mg/Kg	5	11/6/2006 1:48:41 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 11:14:14 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 1:48:41 PM
EPA METHOD 8260B: VOLATILES						Analyst: **LMM**
Benzene	ND	0.050		mg/Kg	1	10/24/2006
Toluene	ND	0.050		mg/Kg	1	10/24/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/24/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/24/2006
Naphthalene	ND	0.10		mg/Kg	1	10/24/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/24/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/24/2006
Acetone	ND	0.75		mg/Kg	1	10/24/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/24/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/24/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/24/2006
Bromoform	ND	0.050		mg/Kg	1	10/24/2006
Bromomethane	ND	0.10		mg/Kg	1	10/24/2006
2-Butanone	ND	0.50		mg/Kg	1	10/24/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/24/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/24/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
Chloroethane	ND	0.10		mg/Kg	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B4-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 11:15:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-20	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/24/2006
Chloromethane	ND	0.050		mg/Kg	1	10/24/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/24/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/24/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/24/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/24/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/24/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/24/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/24/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/24/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/24/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/24/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/24/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/24/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/24/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/24/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/24/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/24/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/24/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/24/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
Styrene	ND	0.050		mg/Kg	1	10/24/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/24/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/24/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/24/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/24/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/24/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/24/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/24/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B4-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 11:15:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-20	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/24/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/24/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/24/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/24/2006
Surr: 1,2-Dichloroethane-d4	76.1	62-127		%REC	1	10/24/2006
Surr: 4-Bromofluorobenzene	99.4	75.2-127		%REC	1	10/24/2006
Surr: Dibromofluoromethane	74.4	68.1-120		%REC	1	10/24/2006
Surr: Toluene-d8	98.2	74-119		%REC	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B5-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 3:35:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-21	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	130	10		mg/Kg	1	10/25/2006 3:19:25 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 3:19:25 PM
Surr: DNOP	86.2	61.7-135		%REC	1	10/25/2006 3:19:25 PM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	11/1/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	12		mg/Kg	5	11/6/2006 1:52:37 PM
Barium	250	0.50		mg/Kg	5	11/6/2006 1:52:37 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 1:52:37 PM
Chromium	10	1.5		mg/Kg	5	11/6/2006 1:52:37 PM
Lead	7.3	1.2		mg/Kg	5	11/6/2006 1:52:37 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 11:16:41 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 1:52:37 PM
EPA METHOD 8260B: VOLATILES						Analyst: **LMM**
Benzene	ND	0.050		mg/Kg	1	10/24/2006
Toluene	ND	0.050		mg/Kg	1	10/24/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/24/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/24/2006
Naphthalene	ND	0.10		mg/Kg	1	10/24/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/24/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/24/2006
Acetone	ND	0.75		mg/Kg	1	10/24/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/24/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/24/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/24/2006
Bromoform	ND	0.050		mg/Kg	1	10/24/2006
Bromomethane	ND	0.10		mg/Kg	1	10/24/2006
2-Butanone	ND	0.50		mg/Kg	1	10/24/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/24/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/24/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
Chloroethane	ND	0.10		mg/Kg	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B5-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 3:35:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-21	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/24/2006
Chloromethane	ND	0.050		mg/Kg	1	10/24/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/24/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/24/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/24/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/24/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/24/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/24/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/24/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/24/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/24/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/24/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/24/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/24/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/24/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/24/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/24/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/24/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/24/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/24/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
Styrene	ND	0.050		mg/Kg	1	10/24/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/24/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/24/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/24/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/24/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/24/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/24/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/24/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/24/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B5-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 3:35:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-21	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/24/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/24/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/24/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/24/2006
Surr: 1,2-Dichloroethane-d4	76.7	62-127		%REC	1	10/24/2006
Surr: 4-Bromofluorobenzene	97.0	75.2-127		%REC	1	10/24/2006
Surr: Dibromofluoromethane	77.8	68.1-120		%REC	1	10/24/2006
Surr: Toluene-d8	96.3	74-119		%REC	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B5-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 10:25:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-22	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/25/2006 3:54:35 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 3:54:35 PM
Surr: DNOP	85.1	61.7-135		%REC	1	10/25/2006 3:54:35 PM
EPA METHOD 7471: MERCURY						Analyst: MAP
Mercury	ND	0.033		mg/Kg	1	11/1/2006
EPA METHOD 6010B: SOIL METALS						Analyst: CMS
Arsenic	ND	12		mg/Kg	5	11/6/2006 1:55:40 PM
Barium	290	1.0		mg/Kg	10	11/6/2006 2:51:43 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 1:55:40 PM
Chromium	10	1.5		mg/Kg	5	11/6/2006 1:55:40 PM
Lead	7.1	1.2		mg/Kg	5	11/6/2006 1:55:40 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 11:19:12 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 1:55:40 PM
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Benzene	ND	0.050		mg/Kg	1	10/24/2006
Toluene	ND	0.050		mg/Kg	1	10/24/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/24/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/24/2006
Naphthalene	ND	0.10		mg/Kg	1	10/24/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/24/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/24/2006
Acetone	ND	0.75		mg/Kg	1	10/24/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/24/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/24/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/24/2006
Bromoform	ND	0.050		mg/Kg	1	10/24/2006
Bromomethane	ND	0.10		mg/Kg	1	10/24/2006
2-Butanone	ND	0.50		mg/Kg	1	10/24/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/24/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/24/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
Chloroethane	ND	0.10		mg/Kg	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B5-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 10:25:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-22	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/24/2006
Chloromethane	ND	0.050		mg/Kg	1	10/24/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/24/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/24/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/24/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/24/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/24/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/24/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/24/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/24/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/24/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/24/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/24/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/24/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/24/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/24/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/24/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/24/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/24/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/24/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
Styrene	ND	0.050		mg/Kg	1	10/24/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/24/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/24/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/24/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/24/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/24/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/24/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/24/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B5-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 10:25:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-22	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/24/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/24/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/24/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/24/2006
Surr: 1,2-Dichloroethane-d4	83.3	62-127		%REC	1	10/24/2006
Surr: 4-Bromofluorobenzene	102	75.2-127		%REC	1	10/24/2006
Surr: Dibromofluoromethane	82.4	68.1-120		%REC	1	10/24/2006
Surr: Toluene-d8	97.4	74-119		%REC	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B6-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 2:45:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-23	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/25/2006 4:29:37 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 4:29:37 PM
Surr: DNOP	87.2	61.7-135		%REC	1	10/25/2006 4:29:37 PM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	11/1/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	12		mg/Kg	5	11/6/2006 1:59:38 PM
Barium	230	0.50		mg/Kg	5	11/6/2006 1:59:38 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 1:59:38 PM
Chromium	13	1.5		mg/Kg	5	11/6/2006 1:59:38 PM
Lead	6.8	1.2		mg/Kg	5	11/6/2006 1:59:38 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 11:21:44 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 1:59:38 PM
EPA METHOD 8260B: VOLATILES						Analyst: **LMM**
Benzene	ND	0.050		mg/Kg	1	10/24/2006
Toluene	ND	0.050		mg/Kg	1	10/24/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/24/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/24/2006
Naphthalene	ND	0.10		mg/Kg	1	10/24/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/24/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/24/2006
Acetone	ND	0.75		mg/Kg	1	10/24/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/24/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/24/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/24/2006
Bromoform	ND	0.050		mg/Kg	1	10/24/2006
Bromomethane	ND	0.10		mg/Kg	1	10/24/2006
2-Butanone	ND	0.50		mg/Kg	1	10/24/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/24/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/24/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
Chloroethane	ND	0.10		mg/Kg	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B6-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 2:45:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-23	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/24/2006
Chloromethane	ND	0.050		mg/Kg	1	10/24/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/24/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/24/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/24/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/24/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/24/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/24/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/24/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/24/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/24/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/24/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/24/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/24/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/24/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/24/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/24/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/24/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/24/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/24/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
Styrene	ND	0.050		mg/Kg	1	10/24/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/24/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/24/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/24/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/24/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/24/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/24/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/24/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B6-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 2:45:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-23	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/24/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/24/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/24/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/24/2006
Surr: 1,2-Dichloroethane-d4	75.8	62-127		%REC	1	10/24/2006
Surr: 4-Bromofluorobenzene	95.9	75.2-127		%REC	1	10/24/2006
Surr: Dibromofluoromethane	74.5	68.1-120		%REC	1	10/24/2006
Surr: Toluene-d8	97.0	74-119		%REC	1	10/24/2006

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B6-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 4:05:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-24	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/25/2006 5:04:44 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 5:04:44 PM
Surr: DNOP	86.0	61.7-135		%REC	1	10/25/2006 5:04:44 PM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	11/1/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	12		mg/Kg	5	11/6/2006 2:03:42 PM
Barium	260	1.0		mg/Kg	10	11/6/2006 2:54:39 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 2:03:42 PM
Chromium	9.6	1.5		mg/Kg	5	11/6/2006 2:03:42 PM
Lead	5.8	1.2		mg/Kg	5	11/6/2006 2:03:42 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 11:24:12 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 2:03:42 PM
EPA METHOD 8260B: VOLATILES						Analyst: **LMM**
Benzene	ND	0.050		mg/Kg	1	10/24/2006
Toluene	ND	0.050		mg/Kg	1	10/24/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/24/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/24/2006
Naphthalene	ND	0.10		mg/Kg	1	10/24/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/24/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/24/2006
Acetone	ND	0.75		mg/Kg	1	10/24/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/24/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/24/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/24/2006
Bromoform	ND	0.050		mg/Kg	1	10/24/2006
Bromomethane	ND	0.10		mg/Kg	1	10/24/2006
2-Butanone	ND	0.50		mg/Kg	1	10/24/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/24/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/24/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
Chloroethane	ND	0.10		mg/Kg	1	10/24/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B6-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 4:05:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-24	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/24/2006
Chloromethane	ND	0.050		mg/Kg	1	10/24/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/24/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/24/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/24/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/24/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/24/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/24/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/24/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/24/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/24/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/24/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/24/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/24/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/24/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/24/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/24/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/24/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/24/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/24/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
Styrene	ND	0.050		mg/Kg	1	10/24/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/24/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/24/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/24/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/24/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/24/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/24/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/24/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/24/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B6-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 4:05:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-24	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/24/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/24/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/24/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/24/2006
Surr: 1,2-Dichloroethane-d4	75.4	62-127		%REC	1	10/24/2006
Surr: 4-Bromofluorobenzene	96.9	75.2-127		%REC	1	10/24/2006
Surr: Dibromofluoromethane	74.7	68.1-120		%REC	1	10/24/2006
Surr: Toluene-d8	94.3	74-119		%REC	1	10/24/2006

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	EB101806
Lab Order:	0610228	**Collection Date:**	10/18/2006 4:30:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-25	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/25/2006 12:21:37 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	10/25/2006 12:21:37 AM
Surr: DNOP	113	58-140		%REC	1	10/25/2006 12:21:37 AM
EPA METHOD 7470: MERCURY						Analyst: CMS
Mercury	ND	0.00020		mg/L	1	11/1/2006
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	10/24/2006 11:00:03 AM
Barium	ND	0.020		mg/L	1	10/24/2006 11:00:03 AM
Cadmium	ND	0.0020		mg/L	1	10/24/2006 11:00:03 AM
Chromium	ND	0.0060		mg/L	1	10/24/2006 11:00:03 AM
Lead	ND	0.0050		mg/L	1	10/24/2006 11:00:03 AM
Selenium	ND	0.050		mg/L	1	10/24/2006 11:00:03 AM
Silver	ND	0.0050		mg/L	1	10/24/2006 11:00:03 AM
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Benzene	ND	1.0		µg/L	1	10/20/2006
Toluene	ND	1.0		µg/L	1	10/20/2006
Ethylbenzene	ND	1.0		µg/L	1	10/20/2006
Methyl tert-butyl ether (MTBE)	ND	1.5		µg/L	1	10/20/2006
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	10/20/2006
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	10/20/2006
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/20/2006
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/20/2006
Naphthalene	ND	2.0		µg/L	1	10/20/2006
1-Methylnaphthalene	ND	4.0		µg/L	1	10/20/2006
2-Methylnaphthalene	ND	4.0		µg/L	1	10/20/2006
Acetone	ND	10		µg/L	1	10/20/2006
Bromobenzene	ND	1.0		µg/L	1	10/20/2006
Bromochloromethane	ND	1.0		µg/L	1	10/20/2006
Bromodichloromethane	ND	1.0		µg/L	1	10/20/2006
Bromoform	ND	1.0		µg/L	1	10/20/2006
Bromomethane	ND	2.0		µg/L	1	10/20/2006
2-Butanone	ND	10		µg/L	1	10/20/2006
Carbon disulfide	ND	10		µg/L	1	10/20/2006
Carbon Tetrachloride	ND	2.0		µg/L	1	10/20/2006
Chlorobenzene	ND	1.0		µg/L	1	10/20/2006
Chloroethane	ND	2.0		µg/L	1	10/20/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	EB101806
Lab Order:	0610228	**Collection Date:**	10/18/2006 4:30:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-25	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	1.0		µg/L	1	10/20/2006
Chloromethane	ND	1.0		µg/L	1	10/20/2006
2-Chlorotoluene	ND	1.0		µg/L	1	10/20/2006
4-Chlorotoluene	ND	1.0		µg/L	1	10/20/2006
cis-1,2-DCE	ND	1.0		µg/L	1	10/20/2006
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/20/2006
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/20/2006
Dibromochloromethane	ND	1.0		µg/L	1	10/20/2006
Dibromomethane	ND	2.0		µg/L	1	10/20/2006
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/20/2006
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/20/2006
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/20/2006
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/20/2006
1,1-Dichloroethane	ND	2.0		µg/L	1	10/20/2006
1,1-Dichloroethene	ND	1.0		µg/L	1	10/20/2006
1,2-Dichloropropane	ND	1.0		µg/L	1	10/20/2006
1,3-Dichloropropane	ND	1.0		µg/L	1	10/20/2006
2,2-Dichloropropane	ND	2.0		µg/L	1	10/20/2006
1,1-Dichloropropene	ND	1.0		µg/L	1	10/20/2006
Hexachlorobutadiene	ND	2.0		µg/L	1	10/20/2006
2-Hexanone	ND	10		µg/L	1	10/20/2006
Isopropylbenzene	ND	1.0		µg/L	1	10/20/2006
4-Isopropyltoluene	ND	1.0		µg/L	1	10/20/2006
4-Methyl-2-pentanone	ND	10		µg/L	1	10/20/2006
Methylene Chloride	ND	3.0		µg/L	1	10/20/2006
n-Butylbenzene	ND	1.0		µg/L	1	10/20/2006
n-Propylbenzene	ND	1.0		µg/L	1	10/20/2006
sec-Butylbenzene	ND	2.0		µg/L	1	10/20/2006
Styrene	ND	1.5		µg/L	1	10/20/2006
tert-Butylbenzene	ND	1.0		µg/L	1	10/20/2006
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/20/2006
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	10/20/2006
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/20/2006
trans-1,2-DCE	ND	1.0		µg/L	1	10/20/2006
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/20/2006
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/20/2006
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/20/2006
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/20/2006
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/20/2006
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/20/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	EB101806
Lab Order:	0610228	**Collection Date:**	10/18/2006 4:30:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-25	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	1.0		µg/L	1	10/20/2006
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/20/2006
Vinyl chloride	ND	1.0		µg/L	1	10/20/2006
Xylenes, Total	ND	3.0		µg/L	1	10/20/2006
Surr: 1,2-Dichloroethane-d4	87.9	69.9-130		%REC	1	10/20/2006
Surr: 4-Bromofluorobenzene	102	75-139		%REC	1	10/20/2006
Surr: Dibromofluoromethane	88.3	57.3-135		%REC	1	10/20/2006
Surr: Toluene-d8	105	81.9-122		%REC	1	10/20/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	EB101706
Lab Order:	0610228	**Collection Date:**	10/17/2006 5:20:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-26	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/25/2006 12:56:23 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	10/25/2006 12:56:23 AM
Surr: DNOP	112	58-140		%REC	1	10/25/2006 12:56:23 AM
EPA METHOD 7470: MERCURY						Analyst: CMS
Mercury	ND	0.00020		mg/L	1	11/1/2006
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	10/24/2006 11:03:04 AM
Barium	ND	0.020		mg/L	1	10/24/2006 11:03:04 AM
Cadmium	ND	0.0020		mg/L	1	10/24/2006 11:03:04 AM
Chromium	ND	0.0060		mg/L	1	10/24/2006 11:03:04 AM
Lead	ND	0.0050		mg/L	1	10/24/2006 11:03:04 AM
Selenium	ND	0.050		mg/L	1	10/24/2006 11:03:04 AM
Silver	ND	0.0050		mg/L	1	10/24/2006 11:03:04 AM
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Benzene	ND	1.0		µg/L	1	10/20/2006
Toluene	ND	1.0		µg/L	1	10/20/2006
Ethylbenzene	ND	1.0		µg/L	1	10/20/2006
Methyl tert-butyl ether (MTBE)	ND	1.5		µg/L	1	10/20/2006
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	10/20/2006
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	10/20/2006
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/20/2006
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/20/2006
Naphthalene	ND	2.0		µg/L	1	10/20/2006
1-Methylnaphthalene	ND	4.0		µg/L	1	10/20/2006
2-Methylnaphthalene	ND	4.0		µg/L	1	10/20/2006
Acetone	ND	10		µg/L	1	10/20/2006
Bromobenzene	ND	1.0		µg/L	1	10/20/2006
Bromochloromethane	ND	1.0		µg/L	1	10/20/2006
Bromodichloromethane	ND	1.0		µg/L	1	10/20/2006
Bromoform	ND	1.0		µg/L	1	10/20/2006
Bromomethane	ND	2.0		µg/L	1	10/20/2006
2-Butanone	ND	10		µg/L	1	10/20/2006
Carbon disulfide	ND	10		µg/L	1	10/20/2006
Carbon Tetrachloride	ND	2.0		µg/L	1	10/20/2006
Chlorobenzene	ND	1.0		µg/L	1	10/20/2006
Chloroethane	ND	2.0		µg/L	1	10/20/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	EB101706
Lab Order:	0610228	**Collection Date:**	10/17/2006 5:20:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-26	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	1.0		µg/L	1	10/20/2006
Chloromethane	ND	1.0		µg/L	1	10/20/2006
2-Chlorotoluene	ND	1.0		µg/L	1	10/20/2006
4-Chlorotoluene	ND	1.0		µg/L	1	10/20/2006
cis-1,2-DCE	ND	1.0		µg/L	1	10/20/2006
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/20/2006
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/20/2006
Dibromochloromethane	ND	1.0		µg/L	1	10/20/2006
Dibromomethane	ND	2.0		µg/L	1	10/20/2006
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/20/2006
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/20/2006
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/20/2006
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/20/2006
1,1-Dichloroethane	ND	2.0		µg/L	1	10/20/2006
1,1-Dichloroethene	ND	1.0		µg/L	1	10/20/2006
1,2-Dichloropropane	ND	1.0		µg/L	1	10/20/2006
1,3-Dichloropropane	ND	1.0		µg/L	1	10/20/2006
2,2-Dichloropropane	ND	2.0		µg/L	1	10/20/2006
1,1-Dichloropropene	ND	1.0		µg/L	1	10/20/2006
Hexachlorobutadiene	ND	2.0		µg/L	1	10/20/2006
2-Hexanone	ND	10		µg/L	1	10/20/2006
Isopropylbenzene	ND	1.0		µg/L	1	10/20/2006
4-Isopropyltoluene	ND	1.0		µg/L	1	10/20/2006
4-Methyl-2-pentanone	ND	10		µg/L	1	10/20/2006
Methylene Chloride	ND	3.0		µg/L	1	10/20/2006
n-Butylbenzene	ND	1.0		µg/L	1	10/20/2006
n-Propylbenzene	ND	1.0		µg/L	1	10/20/2006
sec-Butylbenzene	ND	2.0		µg/L	1	10/20/2006
Styrene	ND	1.5		µg/L	1	10/20/2006
tert-Butylbenzene	ND	1.0		µg/L	1	10/20/2006
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/20/2006
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	10/20/2006
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/20/2006
trans-1,2-DCE	ND	1.0		µg/L	1	10/20/2006
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/20/2006
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/20/2006
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/20/2006
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/20/2006
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/20/2006
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/20/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	EB101706
Lab Order:	0610228	**Collection Date:**	10/17/2006 5:20:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-26	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	1.0		µg/L	1	10/20/2006
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/20/2006
Vinyl chloride	ND	1.0		µg/L	1	10/20/2006
Xylenes, Total	ND	3.0		µg/L	1	10/20/2006
Surr: 1,2-Dichloroethane-d4	84.1	69.9-130		%REC	1	10/20/2006
Surr: 4-Bromofluorobenzene	110	75-139		%REC	1	10/20/2006
Surr: Dibromofluoromethane	84.9	57.3-135		%REC	1	10/20/2006
Surr: Toluene-d8	101	81.9-122		%REC	1	10/20/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

ENERGY LABORATORIES, INC. • P.O. Box 30916 • 1120 South 27th Street • Billings, MT 59107-0916
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ANALYTICAL SUMMARY REPORT

November 08, 2006

Anne Thorne
Hall Environmental-Albuquerque
4901 Hawkins NE
Albuquerque, NM 87109

Workorder No.: B06101716

Project Name: 0610228

Energy Laboratories Inc received the following 25 samples from Hall Environmental-Albuquerque on 10/24/2006 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B06101716-001	0610228-01C-B7-2 ft	10/17/06 15:45	10/24/06	Soil	Total Cyanide Cyanide Distillation
B06101716-002	0610228-02C-B7-5 ft	10/18/06 9:50	10/24/06	Soil	Same As Above
B06101716-003	0610228-03C-B8-2 ft	10/17/06 14:15	10/24/06	Soil	Same As Above
B06101716-004	0610228-04C-B8-5 ft	10/17/06 16:50	10/24/06	Soil	Same As Above
B06101716-005	0610228-05C-B9-2 ft	10/17/06 13:45	10/24/06	Soil	Same As Above
B06101716-006	0610228-06C-B9-5 ft	10/17/06 16:05	10/24/06	Soil	Same As Above
B06101716-007	0610228-07C-B10-2 ft	10/17/06 15:05	10/24/06	Soil	Same As Above
B06101716-008	0610228-08C-B10-5 ft	10/18/06 9:15	10/24/06	Soil	Same As Above
B06101716-009	0610228-09C-MS	10/18/06 0:00	10/24/06	Soil	Same As Above
B06101716-010	0610228-10C-MSD	10/18/06 0:00	10/24/06	Soil	Same As Above
B06101716-011	0610228-11C-BD101806	10/18/06 0:00	10/24/06	Soil	Same As Above
B06101716-012	0610228-13C-B1-2 ft	10/18/06 8:55	10/24/06	Soil	Same As Above
B06101716-013	0610228-14C-B1-5 ft	10/18/06 11:40	10/24/06	Soil	Same As Above
B06101716-014	0610228-15C-B2-2 ft	10/18/06 14:00	10/24/06	Soil	Same As Above
B06101716-015	0610228-16C-B2-5 ft	10/18/06 15:10	10/24/06	Soil	Same As Above
B06101716-016	0610228-17C-B3-2 ft	10/18/06 10:50	10/24/06	Soil	Same As Above
B06101716-017	0610228-18C-B3-5 ft	10/18/06 12:15	10/24/06	Soil	Same As Above
B06101716-018	0610228-19C-B4-2 ft	10/18/06 8:40	10/24/06	Soil	Same As Above
B06101716-019	0610228-20C-B4-5 ft	10/18/06 11:15	10/24/06	Soil	Same As Above
B06101716-020	0610228-21C-B5-2 ft	10/17/06 15:35	10/24/06	Soil	Same As Above
B06101716-021	0610228-22C-B5-5 ft	10/18/06 10:25	10/24/06	Soil	Same As Above
B06101716-022	0610228-23C-B6-2 ft	10/18/06 14:45	10/24/06	Soil	Same As Above
B06101716-023	0610228-24C-B6-5 ft	10/18/06 16:05	10/24/06	Soil	Same As Above
B06101716-024	0610228-25C-EB101806	10/18/06 16:30	10/24/06	Aqueous	Cyanide, Total Manual Distillation
B06101716-025	0610228-026C EB101706	10/17/06 17:20	10/24/06	Aqueous	Same As Above

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There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except if noted in report comments or the Case Narrative.

If you have any questions regarding these tests results, please call.

Report Approved By:

ENERGY LABORATORIES, INC. • P.O. Box 30916 • 1120 South 27th Street • Billings, MT 59107-0916
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LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental-Albuquerque	Report Date:	11/08/06
Project:	0610228	Collection Date:	10/17/06 15:45
Lab ID:	B06101716-001	DateReceived:	10/24/06
Client Sample ID:	0610228-01C-B7-2 ft	Matrix:	Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:05 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental-Albuquerque	Report Date:	11/08/06
Project:	0610228	Collection Date:	10/18/06 09:50
Lab ID:	B06101716-002	DateReceived:	10/24/06
Client Sample ID:	0610228-02C-B7-5 ft	Matrix:	Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:12 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental-Albuquerque	Report Date:	11/08/06
Project:	0610228	Collection Date:	10/17/06 14:15
Lab ID:	B06101716-003	DateReceived:	10/24/06
Client Sample ID:	0610228-03C-B8-2 ft	Matrix:	Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:14 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: 0610228
Lab ID: B06101716-004
Client Sample ID: 0610228-04C-BB-5 ft

Report Date: 11/08/06
Collection Date: 10/17/06 16:50
DateReceived: 10/24/06
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:16 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental-Albuquerque	Report Date:	11/08/06
Project:	0610228	Collection Date:	10/17/06 13:45
Lab ID:	B06101716-005	DateReceived:	10/24/06
Client Sample ID:	0610228-05C-B9-2 ft	Matrix:	Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:18 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental-Albuquerque	Report Date:	11/08/06
Project:	0610228	Collection Date:	10/17/06 16:05
Lab ID:	B06101716-006	DateReceived:	10/24/06
Client Sample ID:	0610228-06C-B9-5 ft	Matrix:	Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:19 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental-Albuquerque	Report Date:	11/08/06
Project:	0610228	Collection Date:	10/17/06 15:05
Lab ID:	B06101716-007	DateReceived:	10/24/06
Client Sample ID:	0610228-07C-B10-2 ft	Matrix:	Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:21 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: 0610228
Lab ID: B06101716-008
Client Sample ID: 0610228-08C-B10-5 ft

Report Date: 11/08/06
Collection Date: 10/18/06 09:15
DateReceived: 10/24/06
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:23 / kjp

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: 0610228
Lab ID: B06101716-009
Client Sample ID: 0610228-09C-MS

Report Date: 11/08/06
Collection Date: 10/18/06
DateReceived: 10/24/06
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:25 / kjp

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: 0610228
Lab ID: B06101716-010
Client Sample ID: 0610228-10C-MSD

Report Date: 11/08/06
Collection Date: 10/18/06
DateReceived: 10/24/06
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/26/06 15:42 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental-Albuquerque	Report Date:	11/08/06
Project:	0610228	Collection Date:	10/18/06
Lab ID:	B06101716-011	DateReceived:	10/24/06
Client Sample ID:	0610228-11C-BD101806	Matrix:	Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/26/06 15:43 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental-Albuquerque	Report Date:	11/08/06
Project:	0610228	Collection Date:	10/18/06 08:55
Lab ID:	B06101716-012	DateReceived:	10/24/06
Client Sample ID:	0610228-13C-B1-2 ft	Matrix:	Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/26/06 15:45 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental-Albuquerque	Report Date:	11/08/06
Project:	0610228	Collection Date:	10/18/06 11:40
Lab ID:	B06101716-013	DateReceived:	10/24/06
Client Sample ID:	0610228-14C-B1-5 ft	Matrix:	Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:38 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: 0610228
Lab ID: B06101716-014
Client Sample ID: 0610228-15C-B2-2 ft

Report Date: 11/08/06
Collection Date: 10/18/06 14:00
DateReceived: 10/24/06
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:40 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: 0610228
Lab ID: B06101716-015
Client Sample ID: 0610228-16C-B2-5 ft

Report Date: 11/08/06
Collection Date: 10/18/06 15:10
DateReceived: 10/24/06
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:41 / kjp

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: 0610228
Lab ID: B06101716-016
Client Sample ID: 0610228-17C-B3-2 ft

Report Date: 11/08/06
Collection Date: 10/18/06 10:50
DateReceived: 10/24/06
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:43 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: 0610228
Lab ID: B06101716-017
Client Sample ID: 0610228-18C-B3-5 ft

Report Date: 11/08/06
Collection Date: 10/18/06 12:15
DateReceived: 10/24/06
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:45 / kjp

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental-Albuquerque	Report Date:	11/08/06
Project:	0610228	Collection Date:	10/18/06 08:40
Lab ID:	B06101716-018	DateReceived:	10/24/06
Client Sample ID:	0610228-19C-B4-2 ft	Matrix:	Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:47 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: 0610228
Lab ID: B06101716-019
Client Sample ID: 0610228-20C-B4-5 ft

Report Date: 11/08/06
Collection Date: 10/18/06 11:15
DateReceived: 10/24/06
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 16:01 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: 0610228
Lab ID: B06101716-020
Client Sample ID: 0610228-21C-B5-2 ft

Report Date: 11/08/06
Collection Date: 10/17/06 15:35
DateReceived: 10/24/06
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 16:03 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental-Albuquerque	Report Date:	11/08/06
Project:	0610228	Collection Date:	10/18/06 10:25
Lab ID:	B06101716-021	DateReceived:	10/24/06
Client Sample ID:	0610228-22C-B5-5 ft	Matrix:	Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 16:10 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental-Albuquerque	Report Date:	11/08/06
Project:	0610228	Collection Date:	10/18/06 14:45
Lab ID:	B06101716-022	DateReceived:	10/24/06
Client Sample ID:	0610228-23C-B6-2 ft	Matrix:	Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 16:12 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: 0610228
Lab ID: B06101716-023
Client Sample ID: 0610228-24C-B6-5 ft

Report Date: 11/08/06
Collection Date: 10/18/06 16:05
DateReceived: 10/24/06
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 16:14 / kjp

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental-Albuquerque	Report Date:	11/08/06
Project:	0610228	Collection Date:	10/18/06 16:30
Lab ID:	B06101716-024	DateReceived:	10/24/06
Client Sample ID:	0610228-25C-EB101806	Matrix:	Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
INORGANICS							
Cyanide, Total Manual Distillation	ND	mg/L		0.005		E335.4	10/26/06 11:29 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: 0610228
Lab ID: B06101716-025
Client Sample ID: 0610228-026C EB101706

Report Date: 11/08/06
Collection Date: 10/17/06 17:20
DateReceived: 10/24/06
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
INORGANICS							
Cyanide, Total Manual Distillation	ND	mg/L		0.005		E335.4	10/26/06 11:31 / kjp

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: Hall Environmental-Albuquerque
Project: 0610228

Report Date: 11/02/06
Work Order: B06101716

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E335.4									Batch: A2006-10-26_4_CN__01
Sample ID: LFB-4	Laboratory Fortified Blank				Run: AUTOAN201-B_061026A				10/26/06 11:13
Cyanide, Total Manual Distillation	0.101	mg/L	0.0050	99	90	110			
Sample ID: MBLK-5	Method Blank				Run: AUTOAN201-B_061026A				10/26/06 11:14
Cyanide, Total Manual Distillation	0.002	mg/L	0.001						
Sample ID: B06101716-025AMS	Sample Matrix Spike				Run: AUTOAN201-B_061026A				10/26/06 11:33
Cyanide, Total Manual Distillation	0.108	mg/L	0.0050	108	90	110			
Sample ID: B06101716-025AMSD	Sample Matrix Spike Duplicate				Run: AUTOAN201-B_061026A				10/26/06 11:35
Cyanide, Total Manual Distillation	0.108	mg/L	0.0050	108	90	110	0.5	10	
Method: SW9012									Batch: 23907
Sample ID: B06101716-001AMS	Sample Matrix Spike				Run: AUTOAN201-B_061025A				10/25/06 15:07
Cyanide, Total	4.75	mg/kg	0.50	95	50	150			
Sample ID: B06101716-001AMSD	Sample Matrix Spike Duplicate				Run: AUTOAN201-B_061025A				10/25/06 15:09
Cyanide, Total	4.73	mg/kg	0.50	95	50	150	0.5	30	
Sample ID: B06101716-018AMS	Sample Matrix Spike				Run: AUTOAN201-B_061025A				10/25/06 15:49
Cyanide, Total	4.50	mg/kg	0.50	90	50	150			
Sample ID: B06101716-018AMSD	Sample Matrix Spike Duplicate				Run: AUTOAN201-B_061025A				10/25/06 15:57
Cyanide, Total	3.60	mg/kg	0.50	72	50	150	22	30	
Method: SW9012									Batch: 23932
Sample ID: B06101716-012AMS	Sample Matrix Spike				Run: AUTOAN201-B_061026B				10/26/06 15:47
Cyanide, Total	4.60	mg/kg	0.50	92	50	150			
Sample ID: B06101716-012AMSD	Sample Matrix Spike Duplicate				Run: AUTOAN201-B_061026B				10/26/06 15:49
Cyanide, Total	4.72	mg/kg	0.50	94	50	150	2.5	30	
Sample ID: MBLK-35	Method Blank				Run: AUTOAN201-B_061026B				10/26/06 16:33
Cyanide, Total	ND	mg/kg	0.1						
Sample ID: LCS-36	Laboratory Control Sample				Run: AUTOAN201-B_061026B				10/26/06 16:35
Cyanide, Total	8.05	mg/kg	0.50	107	90	110			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

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Energy Laboratories Inc

Sample Receipt Checklist

Client Name Hall Environmental-Albuquerque

Date and Time Received: 10/24/2006

Work Order Number B06101716

Received by klm

Login completed by: Krystal McDonald (Signature) 10/24/2006 (Date)

Reviewed by Denise Ruby (Initials) 10/25/2006 (Date)

Carrier name FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☑	No ☐	Not Present ☐
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☐	No ☑	14 °C
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Adjusted? _____ Checked by _____

Contact and Corrective Action Comments:
None

Hall Environmental Analysis Laboratory, In
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109-4372
TEL: *5053453975* FAX: *5053454107*

CHAIN-OF-CUSTODY RECORD

Subcontractor:

Energy Labs
2393 Salt Creek Highway
Casper, WY 82601

TEL: (888) 235-0515
FAX: (307) 234-1639
Acct #:

Project Name 0610228

23-Oct-06

Lab ID	Client Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests
0610228-01C	B7-2'	Soil	10/17/2006 3:45:00 PM	4OZGU	SEE BELOW B0610171641
0610228-02C	B7-5'	Soil	10/18/2006 9:50:00 AM	4OZGU	SEE BELOW 2
0610228-03C	B8-2'	Soil	10/17/2006 2:15:00 PM	4OZGU	SEE BELOW 3
0610228-04C	B8-5'	Soil	10/17/2006 4:50:00 PM	4OZGU	SEE BELOW 4
0610228-05C	B9-2'	Soil	10/17/2006 1:45:00 PM	4OZGU	SEE BELOW 5
0610228-06C	B9-5'	Soil	10/17/2006 4:05:00 PM	4OZGU	SEE BELOW 6
0610228-07C	B10-2'	Soil	10/17/2006 3:05:00 PM	4OZGU	SEE BELOW 7
0610228-08C	B10-5'	Soil	10/18/2006 9:15:00 AM	4OZGU	SEE BELOW 8

ANALYTICAL COMMENTS: **TOTAL CYANIDE**

Comments: Standard TAT. Please fax (505) 345-4107 results when completed, or email to lab@hallenvironmental.com. Thank you.

		Date/Time			Date/Time
Relinquished by:	[signature]	1630 10/23/06	Received by:		
Relinquished by:			Received by:	[signature]	10/24/06 09

14° Fed Ex Ars Overnight

ıIall Environmental Analysis Laboratory, In
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109-4372
TEL: *5053453975* FAX: *5053454107*

CHAIN-OF-CUSTODY RECORD

Subcontractor:

Energy Labs
2393 Salt Creek Highway
Casper, WY 82601

TEL: (888) 235-0515
FAX: (307) 234-1639
Acct #:

Project Name 0610228

23-Oct-06

Lab ID	Client Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests	
0610228-09C	MS	Soil	10/18/2006	4OZGU	SEE BELOW	BUL101714-9
0610228-10C	MSD	Soil	10/18/2006	4OZGU	SEE BELOW	10
0610228-11C	BD101806	Soil	10/18/2006	4OZGU	SEE BELOW	11
0610228-13C	B1-2'	Soil	10/18/2006 8:55:00 AM	4OZGU	SEE BELOW	12
0610228-14C	B1-5'	Soil	10/18/2006 11:40:00 AM	4OZGU	SEE BELOW	13
0610228-15C	B2-2'	Soil	10/18/2006 2:00:00 PM	4OZGU	SEE BELOW	14
0610228-16C	B2-5'	Soil	10/18/2006 3:10:00 PM	4OZGU	SEE BELOW	15
0610228-17C	B3-2'	Soil	10/18/2006 10:50:00 AM	4OZGU	SEE BELOW	16

ANALYTICAL COMMENTS: **TOTAL CYANIDE**

Comments: Standard TAT. Please fax (505) 345-4107 results when completed, or email to lab@hallenvironmental.com. Thank you.

		Date/Time			Date/Time
Relinquished by:	[signature]	10/23/06 1630	Received by:	[signature]	10/24/06 0900
Relinquished by:			Received by:		

Hall Environmental Analysis Laboratory, In
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Acct #:

Project Name 0610228

23-Oct-06

Lab ID	Client Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests
0610228-18C	B3-5'	Soil	10/18/2006 12:15:00 PM	4OZGU	SEE BELOW B061017 16-17
0610228-19C	B4-2'	Soil	10/18/2006 8:40:00 AM	4OZGU	SEE BELOW 18
0610228-20C	B4-5'	Soil	10/18/2006 11:15:00 AM	4OZGU	SEE BELOW 19
0610228-21C	B5-2'	Soil	10/17/2006 3:35:00 PM	4OZGU	SEE BELOW 20
0610228-22C	B5-5'	Soil	10/18/2006 10:25:00 AM	4OZGU	SEE BELOW ~~21~~
0610228-23C	B6-2'	Soil	10/18/2006 2:45:00 PM	4OZGU	SEE BELOW 22
0610228-24C	B6-5'	Soil	10/18/2006 4:05:00 PM	4OZGU	SEE BELOW 23
0610228-25C	EB101806	Aqueous	10/18/2006 4:30:00 PM	250HDPE-NAOH	SEE BELOW 24

ANALYTICAL COMMENTS: **TOTAL CYANIDE**

Comments: Standard TAT. Please fax (505) 345-4107 results when completed, or email to lab@hallenvironmental.com. Thank you.

		Date/Time		Date/Time
Relinquished by:		1650 10/23/06	Received by:	
Relinquished by:			Received by:	10/24/06 0900

Hall Environmental Analysis Laboratory, In
4901 Hawkins NE, Suite D
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CHAIN-OF-CUSTODY RECORD

Subcontractor:

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2393 Salt Creek Highway
Casper, WY 82601

TEL: (888) 235-0515
FAX: (307) 234-1639
Acct #:

Project Name 0610228

23-Oct-06

Lab ID	Client Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests
0610228-26C	EB101706	Aqueous	10/17/2006 5:20:00 PM	250HDPE-NAOH	SEE BELOW B0610171G-26 25

ANALYTICAL COMMENTS: **TOTAL CYANIDE**

Comments: Standard TAT. Please fax (505) 345-4107 results when completed, or email to lab@hallenvironmental.com. Thank you.

		Date/Time		Date/Time
Relinquished by:		10/23/06 1630	**Received by:**	
Relinquished by:			**Received by:**	10/24/06 0900

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area Sampling

Work Order: 0610228

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8015									
Sample ID: 0610228-08BMSD		*MSD*			Batch ID:	**11545**	Analysis Date:	10/25/2006 7:19:14 AM	
Diesel Range Organics (DRO)	57.02	mg/Kg	10	114	67.4	117	0.0666	17.4	
Sample ID: MB-11532		*MBLK*			Batch ID:	**11532**	Analysis Date:	10/20/2006 7:33:32 AM	
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: MB-11545		*MBLK*			Batch ID:	**11545**	Analysis Date:	10/25/2006 3:50:23 AM	
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-11532		*LCS*			Batch ID:	**11532**	Analysis Date:	10/20/2006 8:08:19 AM	
Diesel Range Organics (DRO)	36.76	mg/Kg	10	73.5	64.6	116			
Sample ID: LCS-11545		*LCS*			Batch ID:	**11545**	Analysis Date:	10/25/2006 5:00:02 AM	
Diesel Range Organics (DRO)	47.19	mg/Kg	10	94.4	64.6	116			
Sample ID: LCSD-11532		*LCSD*			Batch ID:	**11532**	Analysis Date:	10/20/2006 8:43:09 AM	
Diesel Range Organics (DRO)	42.42	mg/Kg	10	84.8	64.6	116	14.3	17.4	
Sample ID: LCSD-11545		*LCSD*			Batch ID:	**11545**	Analysis Date:	10/25/2006 5:34:48 AM	
Diesel Range Organics (DRO)	47.58	mg/Kg	10	95.2	64.6	116	0.827	17.4	
Sample ID: 0610228-08BMS		*MS*			Batch ID:	**11545**	Analysis Date:	10/25/2006 6:44:22 AM	
Diesel Range Organics (DRO)	57.06	mg/Kg	10	114	67.4	117			
Method: SW8015									
Sample ID: MB-11551		*MBLK*			Batch ID:	**11551**	Analysis Date:	10/24/2006 8:06:50 AM	
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-11551		*LCS*			Batch ID:	**11551**	Analysis Date:	10/24/2006 8:41:42 AM	
Diesel Range Organics (DRO)	6.261	mg/L	1.0	125	74	157			
Sample ID: LCSD-11551		*LCSD*			Batch ID:	**11551**	Analysis Date:	10/24/2006 9:16:44 AM	
Diesel Range Organics (DRO)	6.521	mg/L	1.0	130	74	157	4.07	23	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area Sampling

Work Order: 0610228

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8270C									
Sample ID: MB-11608		*MBLK*			Batch ID:	11608	Analysis Date:		11/1/2006
Acenaphthene	ND	mg/Kg	0.20						
Acenaphthylene	ND	mg/Kg	0.20						
Aniline	ND	mg/Kg	0.20						
Anthracene	ND	mg/Kg	0.20						
Azobenzene	ND	mg/Kg	0.20						
Benz(a)anthracene	ND	mg/Kg	0.25						
Benzo(a)pyrene	ND	mg/Kg	0.20						
Benzo(b)fluoranthene	ND	mg/Kg	0.20						
Benzo(g,h,i)perylene	ND	mg/Kg	0.30						
Benzo(k)fluoranthene	ND	mg/Kg	0.50						
Benzoic acid	ND	mg/Kg	0.50						
Benzyl alcohol	ND	mg/Kg	1.0						
Bis(2-chloroethoxy)methane	ND	mg/Kg	0.50						
Bis(2-chloroethyl)ether	ND	mg/Kg	0.25						
Bis(2-chloroisopropyl)ether	ND	mg/Kg	0.50						
Bis(2-ethylhexyl)phthalate	ND	mg/Kg	0.20						
4-Bromophenyl phenyl ether	ND	mg/Kg	0.25						
Butyl benzyl phthalate	ND	mg/Kg	0.20						
Carbazole	ND	mg/Kg	0.20						
4-Chloro-3-methylphenol	ND	mg/Kg	0.20						
4-Chloroaniline	ND	mg/Kg	0.20						
2-Chloronaphthalene	ND	mg/Kg	0.20						
2-Chlorophenol	ND	mg/Kg	0.20						
4-Chlorophenyl phenyl ether	ND	mg/Kg	0.20						
Chrysene	ND	mg/Kg	0.20						
Di-n-butyl phthalate	ND	mg/Kg	0.50						
Di-n-octyl phthalate	ND	mg/Kg	0.50						
Dibenz(a,h)anthracene	ND	mg/Kg	0.25						
Dibenzofuran	ND	mg/Kg	0.50						
1,2-Dichlorobenzene	ND	mg/Kg	0.20						
1,3-Dichlorobenzene	ND	mg/Kg	0.20						
1,4-Dichlorobenzene	ND	mg/Kg	0.20						
3,3'-Dichlorobenzidine	ND	mg/Kg	0.20						
Diethyl phthalate	ND	mg/Kg	0.20						
Dimethyl phthalate	ND	mg/Kg	0.20						
2,4-Dichlorophenol	ND	mg/Kg	0.20						
2,4-Dimethylphenol	ND	mg/Kg	0.20						
4,6-Dinitro-2-methylphenol	ND	mg/Kg	0.50						
2,4-Dinitrophenol	ND	mg/Kg	0.50						
2,4-Dinitrotoluene	ND	mg/Kg	0.20						
2,6-Dinitrotoluene	ND	mg/Kg	0.20						
Fluoranthene	ND	mg/Kg	0.20						
Fluorene	ND	mg/Kg	0.20						
Hexachlorobenzene	ND	mg/Kg	0.20						

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area Sampling

Work Order: 0610228

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8270C									
Sample ID: MB-11608		*MBLK*			Batch ID:	11608	Analysis Date:		11/1/2006
Hexachlorobutadiene	ND	mg/Kg	0.20						
Hexachlorocyclopentadiene	ND	mg/Kg	0.25						
Hexachloroethane	ND	mg/Kg	0.50						
Indeno(1,2,3-cd)pyrene	ND	mg/Kg	0.20						
Isophorone	ND	mg/Kg	0.20						
2-Methylnaphthalene	ND	mg/Kg	0.20						
2-Methylphenol	ND	mg/Kg	0.20						
3+4-Methylphenol	ND	mg/Kg	0.20						
N-Nitrosodi-n-propylamine	ND	mg/Kg	0.20						
N-Nitrosodiphenylamine	ND	mg/Kg	0.20						
Naphthalene	ND	mg/Kg	0.20						
2-Nitroaniline	ND	mg/Kg	0.50						
3-Nitroaniline	ND	mg/Kg	0.50						
4-Nitroaniline	ND	mg/Kg	0.25						
Nitrobenzene	ND	mg/Kg	0.20						
2-Nitrophenol	ND	mg/Kg	0.20						
4-Nitrophenol	ND	mg/Kg	0.20						
Pentachlorophenol	ND	mg/Kg	0.50						
Phenanthrene	ND	mg/Kg	0.20						
Phenol	ND	mg/Kg	0.20						
Pyrene	ND	mg/Kg	0.20						
Pyridine	ND	mg/Kg	0.50						
1,2,4-Trichlorobenzene	ND	mg/Kg	0.20						
2,4,5-Trichlorophenol	ND	mg/Kg	0.20						
2,4,6-Trichlorophenol	ND	mg/Kg	0.20						
Sample ID: LCS-11608		*LCS*			Batch ID:	11608	Analysis Date:		11/1/2006
Acenaphthene	1.894	mg/Kg	0.20	75.7	24	125			
4-Chloro-3-methylphenol	3.338	mg/Kg	0.20	66.8	14.6	154			
2-Chlorophenol	3.186	mg/Kg	0.20	63.7	13.3	149			
1,4-Dichlorobenzene	1.513	mg/Kg	0.20	60.5	23.6	118			
2,4-Dinitrotoluene	2.034	mg/Kg	0.20	81.4	28	136			
N-Nitrosodi-n-propylamine	1.538	mg/Kg	0.20	61.5	28	114			
4-Nitrophenol	2.665	mg/Kg	0.20	53.3	13.1	150			
Pentachlorophenol	2.810	mg/Kg	0.50	56.2	20.1	139			
Phenol	3.240	mg/Kg	0.20	64.8	17.3	141			
Pyrene	2.322	mg/Kg	0.20	92.9	29	131			
1,2,4-Trichlorobenzene	1.712	mg/Kg	0.20	68.5	17.9	126			
Sample ID: LCSD-11608		*LCSD*			Batch ID:	11608	Analysis Date:		11/1/2006
Acenaphthene	1.638	mg/Kg	0.20	65.5	24	125	14.5	25	
4-Chloro-3-methylphenol	2.924	mg/Kg	0.20	58.5	14.6	154	13.2	25	
2-Chlorophenol	2.571	mg/Kg	0.20	51.4	13.3	149	21.3	25	
1,4-Dichlorobenzene	1.241	mg/Kg	0.20	49.6	23.6	118	19.8	25	
2,4-Dinitrotoluene	1.908	mg/Kg	0.20	76.3	28	136	6.42	25	
N-Nitrosodi-n-propylamine	1.368	mg/Kg	0.20	54.7	28	114	11.7	25	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area Sampling

Work Order: 0610228

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8270C									
Sample ID: LCSD-11608		*LCSD*			Batch ID:	**11608**	Analysis Date:		11/1/2006
4-Nitrophenol	2.754	mg/Kg	0.20	55.1	13.1	150	3.27	25	
Pentachlorophenol	2.592	mg/Kg	0.50	51.8	20.1	139	8.11	25	
Phenol	2.702	mg/Kg	0.20	54.0	17.3	141	18.1	25	
Pyrene	2.350	mg/Kg	0.20	94.0	29	131	1.22	25	
1,2,4-Trichlorobenzene	1.398	mg/Kg	0.20	55.9	17.9	126	20.2	25	
Method: SW7471									
Sample ID: 0610228-15B		*MSD*			Batch ID:	**11630**	Analysis Date:		10/31/2006
Mercury	0.1517	mg/Kg	0.033	90.0	75	125	0	20	
Sample ID: 0610228-24B msd		*MSD*			Batch ID:	**11630**	Analysis Date:		11/1/2006
Mercury	0.1476	mg/Kg	0.033	89.2	75	125	0.126	20	
Sample ID: MB-11618		*MBLK*			Batch ID:	**11618**	Analysis Date:		10/31/2006
Mercury	ND	mg/Kg	0.033						
Sample ID: MB-11630		*MBLK*			Batch ID:	**11630**	Analysis Date:		11/1/2006
Mercury	ND	mg/Kg	0.033						
Sample ID: LCS-11618		*LCS*			Batch ID:	**11618**	Analysis Date:		10/31/2006
Mercury	0.1600	mg/Kg	0.033	96.0	80	120			
Sample ID: LCS-11630		*LCS*			Batch ID:	**11630**	Analysis Date:		11/1/2006
Mercury	0.1580	mg/Kg	0.033	94.8	80	120			
Sample ID: 0610228-15B		*MS*			Batch ID:	**11630**	Analysis Date:		10/31/2006
Mercury	0.1524	mg/Kg	0.033	90.4	75	125			
Sample ID: 0610228-24B ms		*MS*			Batch ID:	**11630**	Analysis Date:		11/1/2006
Mercury	0.1478	mg/Kg	0.033	86.8	75	125			
Method: SW7470									
Sample ID: MB-11634		*MBLK*			Batch ID:	**11634**	Analysis Date:		11/1/2006
Mercury	ND	mg/L	0.00020						
Sample ID: LCS-11634		*LCS*			Batch ID:	**11634**	Analysis Date:		11/1/2006
Mercury	0.004830	mg/L	0.00020	96.6	80	120			

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area Sampling

Work Order: 0610228

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW6010A									
Sample ID: 0610228-24B MSD		*MSD*			Batch ID:	**11656**	Analysis Date:	11/6/2006 2:10:58 PM	
Arsenic	24.34	mg/Kg	12	97.8	75	125	3.78	30	
Cadmium	23.44	mg/Kg	0.50	94.2	75	125	3.22	30	
Chromium	33.81	mg/Kg	1.5	97.3	75	125	0.416	30	
Lead	30.93	mg/Kg	1.2	101	75	125	4.42	30	
Silver	23.48	mg/Kg	1.2	94.3	75	125	2.15	30	
Sample ID: 0610228-11B MSD		*MSD*			Batch ID:	**11642**	Analysis Date:	11/6/2006 5:25:10 PM	
Arsenic	21.06	mg/Kg	12	84.4	75	125	21.7	30	
Cadmium	23.08	mg/Kg	0.50	92.5	75	125	3.47	30	
Chromium	31.90	mg/Kg	1.5	90.3	75	125	5.62	30	
Lead	31.88	mg/Kg	1.2	86.6	75	125	4.91	30	
Silver	22.93	mg/Kg	1.2	91.9	75	125	4.34	30	
Sample ID: 0610228-11B MSD		*MSD*			Batch ID:	**11642**	Analysis Date:	11/7/2006 10:05:10 AM	
Selenium	13.56	mg/Kg	12	54.4	75	125	200	30	SR
Sample ID: 0610228-24B MSD		*MSD*			Batch ID:	**11656**	Analysis Date:	11/7/2006 11:30:52 AM	
Selenium	ND	mg/Kg	12	37.8	75	125	0	30	S
Sample ID: MB-11656		*MBLK*			Batch ID:	**11656**	Analysis Date:	11/6/2006 11:20:13 AM	
Arsenic	ND	mg/Kg	2.5						
Barium	ND	mg/Kg	0.10						
Cadmium	ND	mg/Kg	0.10						
Chromium	ND	mg/Kg	0.30						
Lead	ND	mg/Kg	0.25						
Selenium	ND	mg/Kg	2.5						
Silver	ND	mg/Kg	0.25						
Sample ID: MBLK-11642		*MBLK*			Batch ID:	**11642**	Analysis Date:	11/6/2006 4:09:43 PM	
Arsenic	ND	mg/Kg	2.5						
Barium	ND	mg/Kg	0.10						
Cadmium	ND	mg/Kg	0.10						
Chromium	ND	mg/Kg	0.30						
Lead	ND	mg/Kg	0.25						
Silver	ND	mg/Kg	0.25						
Sample ID: MBLK-11642		*MBLK*			Batch ID:	**11642**	Analysis Date:	11/7/2006 9:12:50 AM	
Selenium	ND	mg/Kg	2.5						
Sample ID: MB-11656		*MBLK*			Batch ID:	**11656**	Analysis Date:	11/7/2006 10:42:14 AM	
Selenium	ND	mg/Kg	2.5						
Sample ID: LCS-11656		*LCS*			Batch ID:	**11656**	Analysis Date:	11/6/2006 11:23:19 AM	
Arsenic	24.36	mg/Kg	2.5	97.5	80	120			
Barium	22.98	mg/Kg	0.10	91.9	80	120			
Cadmium	23.44	mg/Kg	0.10	93.8	80	120			
Chromium	23.97	mg/Kg	0.30	95.9	80	120			
Lead	23.06	mg/Kg	0.25	92.2	80	120			
Selenium	20.47	mg/Kg	2.5	81.9	80	120			
Silver	23.18	mg/Kg	0.25	92.7	80	120			

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area Sampling

Work Order: 0610228

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW6010A									
Sample ID: LCS1-11642		*LCS*			Batch ID:	11642	Analysis Date:	11/6/2006 4:12:50 PM	
Arsenic	25.50	mg/Kg	2.5	102	80	120			
Barium	24.07	mg/Kg	0.10	96.3	80	120			
Cadmium	24.44	mg/Kg	0.10	97.5	80	120			
Chromium	24.52	mg/Kg	0.30	98.1	80	120			
Lead	25.19	mg/Kg	0.25	101	80	120			
Silver	24.22	mg/Kg	0.25	96.9	80	120			
Sample ID: LCS1-11642		*LCS*			Batch ID:	11642	Analysis Date:	11/7/2006 9:15:22 AM	
Selenium	27.65	mg/Kg	2.5	111	80	120			
Sample ID: LCS-11656		*LCS*			Batch ID:	11656	Analysis Date:	11/7/2006 10:44:43 AM	
Selenium	23.19	mg/Kg	2.5	92.8	80	120			
Sample ID: 0610228-24B MS		*MS*			Batch ID:	11656	Analysis Date:	11/6/2006 2:06:42 PM	
Arsenic	23.43	mg/Kg	12	93.6	75	125			
Cadmium	24.21	mg/Kg	0.50	96.7	75	125			
Chromium	33.95	mg/Kg	1.5	97.3	75	125			
Lead	32.32	mg/Kg	1.2	106	75	125			
Silver	23.99	mg/Kg	1.2	95.8	75	125			
Sample ID: 0610228-11B MS		*MS*			Batch ID:	11642	Analysis Date:	11/6/2006 5:20:52 PM	
Arsenic	26.18	mg/Kg	12	105	75	125			
Cadmium	23.89	mg/Kg	0.50	96.0	75	125			
Chromium	33.74	mg/Kg	1.5	98.0	75	125			
Lead	33.49	mg/Kg	1.2	93.3	75	125			
Silver	23.95	mg/Kg	1.2	96.3	75	125			
Sample ID: 0610228-11B MS		*MS*			Batch ID:	11642	Analysis Date:	11/7/2006 10:03:32 AM	
Selenium	ND	mg/Kg	12	0	75	125			S
Sample ID: 0610228-24B MS		*MS*			Batch ID:	11656	Analysis Date:	11/7/2006 11:26:40 AM	
Selenium	ND	mg/Kg	12	34.2	75	125			S

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area Sampling
Work Order: 0610228

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW6010A									
Sample ID: 0610228-26B MSD		*MSD*			Batch ID:	**11548**	Analysis Date:	10/24/2006 11:09:09 AM	
Arsenic	0.5064	mg/L	0.020	101	75	125	5.00	20	
Barium	0.4955	mg/L	0.020	98.5	75	125	0.463	20	
Cadmium	0.4920	mg/L	0.0020	98.4	75	125	1.11	20	
Chromium	0.5015	mg/L	0.0060	100	75	125	0.774	20	
Lead	0.4987	mg/L	0.0050	99.7	75	125	1.47	20	
Selenium	0.4319	mg/L	0.050	86.4	75	125	3.93	20	
Sample ID: MB-11548		*MBLK*			Batch ID:	**11548**	Analysis Date:	10/24/2006 10:15:22 AM	
Arsenic	ND	mg/L	0.020						
Barium	ND	mg/L	0.020						
Cadmium	ND	mg/L	0.0020						
Chromium	ND	mg/L	0.0060						
Lead	ND	mg/L	0.0050						
Selenium	ND	mg/L	0.050						
Sample ID: LCS-11548		*LCS*			Batch ID:	**11548**	Analysis Date:	10/24/2006 10:18:27 AM	
Arsenic	0.5298	mg/L	0.020	106	80	120			
Barium	0.4892	mg/L	0.020	97.8	80	120			
Cadmium	0.4925	mg/L	0.0020	98.5	80	120			
Chromium	0.4995	mg/L	0.0060	99.5	80	120			
Lead	0.5035	mg/L	0.0050	101	80	120			
Selenium	0.4234	mg/L	0.050	84.7	80	120			
Sample ID: 0610228-26B MS		*MS*			Batch ID:	**11548**	Analysis Date:	10/24/2006 11:06:06 AM	
Arsenic	0.5324	mg/L	0.020	106	75	125			
Barium	0.4933	mg/L	0.020	98.1	75	125			
Cadmium	0.4975	mg/L	0.0020	99.5	75	125			
Chromium	0.5054	mg/L	0.0060	101	75	125			
Lead	0.5061	mg/L	0.0050	101	75	125			
Selenium	0.4153	mg/L	0.050	83.1	75	125			

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area Sampling

Work Order: 0610228

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8260B									
Sample ID: 0610228-04a msd		*MSD*			Batch ID:	11543	Analysis Date:		10/23/2006
Benzene	1.007	mg/Kg	0.050	101	80.8	132	2.95	20	
Toluene	1.000	mg/Kg	0.050	100	72.1	126	2.26	20	
Chlorobenzene	1.068	mg/Kg	0.050	107	75.4	140	6.58	20	
1,1-Dichloroethene	1.066	mg/Kg	0.050	107	59	147	5.07	20	
Trichloroethene (TCE)	0.9812	mg/Kg	0.050	98.1	63.5	123	4.68	20	
Sample ID: 0610228-21a msd		*MSD*			Batch ID:	11544	Analysis Date:		10/24/2006
Benzene	1.019	mg/Kg	0.050	102	80.8	132	1.10	20	
Toluene	0.9758	mg/Kg	0.050	97.6	72.1	126	2.39	20	
Chlorobenzene	0.9927	mg/Kg	0.050	99.3	75.4	140	1.01	20	
1,1-Dichloroethene	1.006	mg/Kg	0.050	101	59	147	4.35	20	
Trichloroethene (TCE)	0.9555	mg/Kg	0.050	95.6	63.5	123	3.81	20	
Sample ID: MB-11543		*MBLK*			Batch ID:	11543	Analysis Date:		10/23/2006
Benzene	ND	mg/Kg	0.050						
Toluene	ND	mg/Kg	0.050						
Ethylbenzene	ND	mg/Kg	0.050						
Methyl tert-butyl ether (MTBE)	ND	mg/Kg	0.050						
1,2,4-Trimethylbenzene	ND	mg/Kg	0.050						
1,3,5-Trimethylbenzene	ND	mg/Kg	0.050						
1,2-Dichloroethane (EDC)	ND	mg/Kg	0.050						
1,2-Dibromoethane (EDB)	ND	mg/Kg	0.050						
Naphthalene	ND	mg/Kg	0.10						
1-Methylnaphthalene	ND	mg/Kg	0.20						
2-Methylnaphthalene	ND	mg/Kg	0.20						
Acetone	ND	mg/Kg	0.75						
Bromobenzene	ND	mg/Kg	0.050						
Bromochloromethane	ND	mg/Kg	0.050						
Bromodichloromethane	ND	mg/Kg	0.050						
Bromoform	ND	mg/Kg	0.050						
Bromomethane	ND	mg/Kg	0.10						
2-Butanone	ND	mg/Kg	0.50						
Carbon disulfide	ND	mg/Kg	0.50						
Carbon tetrachloride	ND	mg/Kg	0.10						
Chlorobenzene	ND	mg/Kg	0.050						
Chloroethane	ND	mg/Kg	0.10						
Chloroform	ND	mg/Kg	0.050						
Chloromethane	ND	mg/Kg	0.050						
2-Chlorotoluene	ND	mg/Kg	0.050						
4-Chlorotoluene	ND	mg/Kg	0.050						
cis-1,2-DCE	ND	mg/Kg	0.050						
cis-1,3-Dichloropropene	ND	mg/Kg	0.050						
1,2-Dibromo-3-chloropropane	ND	mg/Kg	0.10						
Dibromochloromethane	ND	mg/Kg	0.050						
Dibromomethane	ND	mg/Kg	0.10						
1,2-Dichlorobenzene	ND	mg/Kg	0.050						

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area Sampling

Work Order: 0610228

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8260B									
Sample ID: MB-11543		*MBLK*			Batch ID:	11543	Analysis Date:		10/23/2006
1,3-Dichlorobenzene	ND	mg/Kg	0.050						
1,4-Dichlorobenzene	ND	mg/Kg	0.050						
Dichlorodifluoromethane	ND	mg/Kg	0.050						
1,1-Dichloroethane	ND	mg/Kg	0.10						
1,1-Dichloroethene	ND	mg/Kg	0.050						
1,2-Dichloropropane	ND	mg/Kg	0.050						
1,3-Dichloropropane	ND	mg/Kg	0.050						
2,2-Dichloropropane	ND	mg/Kg	0.10						
1,1-Dichloropropene	ND	mg/Kg	0.050						
Hexachlorobutadiene	ND	mg/Kg	0.10						
2-Hexanone	ND	mg/Kg	0.50						
Isopropylbenzene	ND	mg/Kg	0.050						
4-Isopropyltoluene	ND	mg/Kg	0.050						
4-Methyl-2-pentanone	ND	mg/Kg	0.50						
Methylene chloride	ND	mg/Kg	0.15						
n-Butylbenzene	ND	mg/Kg	0.050						
n-Propylbenzene	ND	mg/Kg	0.050						
sec-Butylbenzene	ND	mg/Kg	0.050						
Styrene	ND	mg/Kg	0.050						
tert-Butylbenzene	ND	mg/Kg	0.050						
1,1,1,2-Tetrachloroethane	ND	mg/Kg	0.050						
1,1,2,2-Tetrachloroethane	ND	mg/Kg	0.050						
Tetrachloroethene (PCE)	ND	mg/Kg	0.050						
trans-1,2-DCE	ND	mg/Kg	0.050						
trans-1,3-Dichloropropene	ND	mg/Kg	0.050						
1,2,3-Trichlorobenzene	ND	mg/Kg	0.10						
1,2,4-Trichlorobenzene	ND	mg/Kg	0.050						
1,1,1-Trichloroethane	ND	mg/Kg	0.050						
1,1,2-Trichloroethane	ND	mg/Kg	0.050						
Trichloroethene (TCE)	ND	mg/Kg	0.050						
Trichlorofluoromethane	ND	mg/Kg	0.050						
1,2,3-Trichloropropane	ND	mg/Kg	0.10						
Vinyl chloride	ND	mg/Kg	0.050						
Xylenes, Total	ND	mg/Kg	0.10						
Sample ID: MB-11544		*MBLK*			Batch ID:	11544	Analysis Date:		10/24/2006
Benzene	ND	mg/Kg	0.050						
Toluene	ND	mg/Kg	0.050						
Ethylbenzene	ND	mg/Kg	0.050						
Methyl tert-butyl ether (MTBE)	ND	mg/Kg	0.050						
1,2,4-Trimethylbenzene	ND	mg/Kg	0.050						
1,3,5-Trimethylbenzene	ND	mg/Kg	0.050						
1,2-Dichloroethane (EDC)	ND	mg/Kg	0.050						
1,2-Dibromoethane (EDB)	ND	mg/Kg	0.050						
Naphthalene	ND	mg/Kg	0.10						

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area Sampling

Work Order: 0610228

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8260B									
Sample ID: MB-11544		*MBLK*			Batch ID:	11544	Analysis Date:		10/24/2006
1-Methylnaphthalene	ND	mg/Kg	0.20						
2-Methylnaphthalene	ND	mg/Kg	0.20						
Acetone	ND	mg/Kg	0.75						
Bromobenzene	ND	mg/Kg	0.050						
Bromochloromethane	ND	mg/Kg	0.050						
Bromodichloromethane	ND	mg/Kg	0.050						
Bromoform	ND	mg/Kg	0.050						
Bromomethane	ND	mg/Kg	0.10						
2-Butanone	ND	mg/Kg	0.50						
Carbon disulfide	ND	mg/Kg	0.50						
Carbon tetrachloride	ND	mg/Kg	0.10						
Chlorobenzene	ND	mg/Kg	0.050						
Chloroethane	ND	mg/Kg	0.10						
Chloroform	ND	mg/Kg	0.050						
Chloromethane	ND	mg/Kg	0.050						
2-Chlorotoluene	ND	mg/Kg	0.050						
4-Chlorotoluene	ND	mg/Kg	0.050						
cis-1,2-DCE	ND	mg/Kg	0.050						
cis-1,3-Dichloropropene	ND	mg/Kg	0.050						
1,2-Dibromo-3-chloropropane	ND	mg/Kg	0.10						
Dibromochloromethane	ND	mg/Kg	0.050						
Dibromomethane	ND	mg/Kg	0.10						
1,2-Dichlorobenzene	ND	mg/Kg	0.050						
1,3-Dichlorobenzene	ND	mg/Kg	0.050						
1,4-Dichlorobenzene	ND	mg/Kg	0.050						
Dichlorodifluoromethane	ND	mg/Kg	0.050						
1,1-Dichloroethane	ND	mg/Kg	0.10						
1,1-Dichloroethene	ND	mg/Kg	0.050						
1,2-Dichloropropane	ND	mg/Kg	0.050						
1,3-Dichloropropane	ND	mg/Kg	0.050						
2,2-Dichloropropane	ND	mg/Kg	0.10						
1,1-Dichloropropene	ND	mg/Kg	0.050						
Hexachlorobutadiene	ND	mg/Kg	0.10						
2-Hexanone	ND	mg/Kg	0.50						
Isopropylbenzene	ND	mg/Kg	0.050						
4-Isopropyltoluene	ND	mg/Kg	0.050						
4-Methyl-2-pentanone	ND	mg/Kg	0.50						
Methylene chloride	ND	mg/Kg	0.15						
n-Butylbenzene	ND	mg/Kg	0.050						
n-Propylbenzene	ND	mg/Kg	0.050						
sec-Butylbenzene	ND	mg/Kg	0.050						
Styrene	ND	mg/Kg	0.050						
tert-Butylbenzene	ND	mg/Kg	0.050						
1,1,1,2-Tetrachloroethane	ND	mg/Kg	0.050						

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area Sampling
Work Order: 0610228

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8260B									
Sample ID: MB-11544		*MBLK*			Batch ID:	11544	Analysis Date:		10/24/2006
1,1,2,2-Tetrachloroethane	ND	mg/Kg	0.050						
Tetrachloroethene (PCE)	ND	mg/Kg	0.050						
trans-1,2-DCE	ND	mg/Kg	0.050						
trans-1,3-Dichloropropene	ND	mg/Kg	0.050						
1,2,3-Trichlorobenzene	ND	mg/Kg	0.10						
1,2,4-Trichlorobenzene	ND	mg/Kg	0.050						
1,1,1-Trichloroethane	ND	mg/Kg	0.050						
1,1,2-Trichloroethane	ND	mg/Kg	0.050						
Trichloroethene (TCE)	ND	mg/Kg	0.050						
Trichlorofluoromethane	ND	mg/Kg	0.050						
1,2,3-Trichloropropane	ND	mg/Kg	0.10						
Vinyl chloride	ND	mg/Kg	0.050						
Xylenes, Total	ND	mg/Kg	0.10						
Sample ID: LCS-11543		*LCS*			Batch ID:	11543	Analysis Date:		10/23/2006
Benzene	0.9974	mg/Kg	0.050	99.7	80.8	132			
Toluene	0.9484	mg/Kg	0.050	94.8	72.1	126			
Chlorobenzene	1.024	mg/Kg	0.050	102	75.4	140			
1,1-Dichloroethene	1.119	mg/Kg	0.050	112	59	147			
Trichloroethene (TCE)	0.9363	mg/Kg	0.050	93.6	63.5	123			
Sample ID: LCS-11544		*LCS*			Batch ID:	11544	Analysis Date:		10/24/2006
Benzene	0.9940	mg/Kg	0.050	99.4	80.8	132			
Toluene	0.9972	mg/Kg	0.050	99.7	72.1	126			
Chlorobenzene	0.9679	mg/Kg	0.050	96.8	75.4	140			
1,1-Dichloroethene	0.9513	mg/Kg	0.050	95.1	59	147			
Trichloroethene (TCE)	0.9522	mg/Kg	0.050	95.2	63.5	123			
Sample ID: 0610228-04a ms		*MS*			Batch ID:	11543	Analysis Date:		10/23/2006
Benzene	0.9775	mg/Kg	0.050	97.8	80.8	132			
Toluene	0.9778	mg/Kg	0.050	97.8	72.1	126			
Chlorobenzene	0.9996	mg/Kg	0.050	100	75.4	140			
1,1-Dichloroethene	1.013	mg/Kg	0.050	101	59	147			
Trichloroethene (TCE)	0.9363	mg/Kg	0.050	93.6	63.5	123			
Sample ID: 0610228-21a ms		*MS*			Batch ID:	11544	Analysis Date:		10/24/2006
Benzene	1.008	mg/Kg	0.050	101	80.8	132			
Toluene	0.9994	mg/Kg	0.050	99.9	72.1	126			
Chlorobenzene	1.003	mg/Kg	0.050	100	75.4	140			
1,1-Dichloroethene	0.9632	mg/Kg	0.050	96.3	59	147			
Trichloroethene (TCE)	0.9198	mg/Kg	0.050	92.0	63.5	123			

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area Sampling

Work Order: 0610228

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8260B									
Sample ID: b6		*MBLK*			Batch ID:	R21125	Analysis Date:		10/20/2006
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.5						
1,2,4-Trimethylbenzene	ND	µg/L	1.0						
1,3,5-Trimethylbenzene	ND	µg/L	1.0						
1,2-Dichloroethane (EDC)	ND	µg/L	1.0						
1,2-Dibromoethane (EDB)	ND	µg/L	1.0						
Naphthalene	ND	µg/L	2.0						
1-Methylnaphthalene	ND	µg/L	4.0						
2-Methylnaphthalene	ND	µg/L	4.0						
Acetone	ND	µg/L	10						
Bromobenzene	ND	µg/L	1.0						
Bromochloromethane	ND	µg/L	1.0						
Bromodichloromethane	ND	µg/L	1.0						
Bromoform	ND	µg/L	1.0						
Bromomethane	ND	µg/L	2.0						
2-Butanone	ND	µg/L	10						
Carbon disulfide	ND	µg/L	10						
Carbon Tetrachloride	ND	µg/L	2.0						
Chlorobenzene	ND	µg/L	1.0						
Chloroethane	ND	µg/L	2.0						
Chloroform	ND	µg/L	1.0						
Chloromethane	ND	µg/L	1.0						
2-Chlorotoluene	ND	µg/L	1.0						
4-Chlorotoluene	ND	µg/L	1.0						
cis-1,2-DCE	ND	µg/L	1.0						
cis-1,3-Dichloropropene	ND	µg/L	1.0						
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0						
Dibromochloromethane	ND	µg/L	1.0						
Dibromomethane	ND	µg/L	2.0						
1,2-Dichlorobenzene	ND	µg/L	1.0						
1,3-Dichlorobenzene	ND	µg/L	1.0						
1,4-Dichlorobenzene	ND	µg/L	1.0						
Dichlorodifluoromethane	ND	µg/L	1.0						
1,1-Dichloroethane	ND	µg/L	2.0						
1,1-Dichloroethene	ND	µg/L	1.0						
1,2-Dichloropropane	ND	µg/L	1.0						
1,3-Dichloropropane	ND	µg/L	1.0						
2,2-Dichloropropane	ND	µg/L	2.0						
1,1-Dichloropropene	ND	µg/L	1.0						
Hexachlorobutadiene	ND	µg/L	2.0						
2-Hexanone	ND	µg/L	10						
Isopropylbenzene	ND	µg/L	1.0						

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area Sampling

Work Order: 0610228

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8260B									
Sample ID: b6		*MBLK*			Batch ID:	**R21125**	Analysis Date:		10/20/2006
4-Isopropyltoluene	ND	µg/L	1.0						
4-Methyl-2-pentanone	ND	µg/L	10						
Methylene Chloride	ND	µg/L	3.0						
n-Butylbenzene	ND	µg/L	1.0						
n-Propylbenzene	ND	µg/L	1.0						
sec-Butylbenzene	ND	µg/L	2.0						
Styrene	ND	µg/L	1.5						
tert-Butylbenzene	ND	µg/L	1.0						
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0						
1,1,2,2-Tetrachloroethane	ND	µg/L	1.0						
Tetrachloroethene (PCE)	ND	µg/L	1.0						
trans-1,2-DCE	ND	µg/L	1.0						
trans-1,3-Dichloropropene	ND	µg/L	1.0						
1,2,3-Trichlorobenzene	ND	µg/L	1.0						
1,2,4-Trichlorobenzene	ND	µg/L	1.0						
1,1,1-Trichloroethane	ND	µg/L	1.0						
1,1,2-Trichloroethane	ND	µg/L	1.0						
Trichloroethene (TCE)	ND	µg/L	1.0						
Trichlorofluoromethane	ND	µg/L	1.0						
1,2,3-Trichloropropane	ND	µg/L	2.0						
Vinyl chloride	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	3.0						
Sample ID: 100ng lcs-b		*LCS*			Batch ID:	**R21125**	Analysis Date:		10/20/2006
Benzene	17.97	µg/L	1.0	89.8	74.9	113			
Toluene	20.28	µg/L	1.0	101	80.4	111			
Chlorobenzene	19.55	µg/L	1.0	97.7	83.2	120			
1,1-Dichloroethene	16.75	µg/L	1.0	83.8	72	127			
Trichloroethene (TCE)	18.31	µg/L	1.0	91.6	58.2	131			

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name GIANTREFIN

Date and Time Received: 10/20/2006

Work Order Number 0610228

Received by AT

Checklist completed by [signature] 10/20/06
Signature Date

Matrix Carrier name Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☑	No ☐	N/A ☐	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐	

Container/Temp Blank temperature? 1° *4° C ± 2 Acceptable*
If given sufficient time to cool.

COMMENTS:

Client contacted Date contacted: Person contacted

Contacted by: Regarding

Comments: for Sm B3-5' & 1050 10/15/06 should be B3-2' AT 10/20/06

Corrective Action

183

CHAIN-OF-CUSTODY RECORD

QA / QC Package: Std ☒ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: Giant Refining - Ciniza
Address: I-40 Exit 39, Jamestown NM 87347
Phone #: 505-722-3833
Fax #: 505-722-0210

Project Name: Fan out area sampling
Project #: —
Project Manager: Regina Allen
Sampler: Grant Price
Sample Temperature: 1°

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: ~~HNO_3~~ (none)	Preservative: HCl	HEAL No. 0610228	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA) or 8015 DRO	7471 Mercury	335.2 Cyanide	200.7 RCRA 8 or TCLP metals		Air Bubbles or Headspace (Y or N)
10/17/06	1545	Soil	B7-2ft	3/4oz		X none		-1											X	X	X	X	X		
10/18/06	0950	Soil	B7-5ft	3/4oz		X none		-2											X	X	X	X	X		
10/17/06	1415	Soil	B8-2ft	3/4oz		X none		-3											X	X	X	X	X		
10/17/06	1650	Soil	B8-5ft	3/4oz		X none		-4											X	X	X	X	X		
10/17/06	1345	Soil	B9-2ft	3/4oz		X none		-5											X	X	X	X	X		
10/17/06	1605	Soil	B9-5ft	3/4oz		X none		-6											X	X	X	X	X		
10/17/06	1505	Soil	B10-2ft	3/4oz		X none		-7											X	X	X	X	X		
10/18/06	0915	Soil	B10-5ft	3/4oz		X none		-8											X	X	X	X	X		
10/18/06	—	Soil	MS	3/4oz		X none		-9											X	X	X	X	X		
10/18/06	—	Soil	MSD	3/4oz		X none		-10											X	X	X	X	X		
10/18/06	—	Soil	BD 101806	3/4oz		X none		-11											X	X	X	X	X		
—	—	H_2O	Trip Blank	2/40 mL			X	-12			~~X~~ NOAT								X		~~X~~	~~X~~	~~X~~ NO		AT

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
10/18/06	1830	Regina Allen	10/19/06 1536
10/19/06	1536	Relinquished By: (Signature) AT 10/20/06	Received By: (Signature) ~~1530~~ AT

Remarks: Relinquished to Steve Morris for transport to Laboratory. by Regina Allen
Each container has a custody seal signed by Grant Price 10/18/06

Per RA analyze for DRO - if exceeds 500ppm analyze for 8270

CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☒ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: Giant Refining - Ciniza
Address: I-40 Exit 39, Jamestown N.M 87347
Phone #: 505-722-3833
Fax #: 505-722-0210

Project Name: Fan out area sampling
Project #: ——
Project Manager: Regina Allen
Sampler: Grant Price
Sample Temperature:

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HNO_3	Preservative: none	HEAL No. 0610228	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA) (DRO)	7471 Mercury	335.2 Cyanide	200.7 or 6010C RCRA metals		Air Bubbles or Headspace (Y or N)
10/18/06	0955	Soil	B1-2 ft	3/4oz			X	-13											X	X	X	X	X		
10/18/06	1140	Soil	B1-5ft	3/4oz			X	-14											X	X	X	X	X		
10/18/06	1400	Soil	B2-2ft	3/4oz			X	-15											X	X	X	X	X		
10/18/06	1510	Soil	B2-5ft	3/4oz			X	-16											X	X	X	X	X		
10/18/06	1050	Soil	B3-2ft	3/4oz			X	-17											X	X	X	X	X		
10/18/06	1215	Soil	B3-5ft	3/4oz			X	-18											X	X	X	X	X		
10/18/06	0840	Soil	B4-2ft	3/4oz			X	-19											X	X	X	X	X		
10/18/06	1115	Soil	B4-5ft	3/4oz			X	-20											X	X	X	X	X		
10/17/06	1535	Soil	B5-2ft	3/4oz			X	-21											X	X	X	X	X		
10/18/06	1025	Soil	B5-5ft	3/4oz			X	-22											X	X	X	X	X		
10/18/06	1445	Soil	B6-2ft	3/4oz			X	-23											X	X	X	X	X		
10/18/06	1605	Soil	B6-5ft	3/4oz			X	-24											X	X	X	X	X		

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
10/18/06	1830	Regina Allen	[signature] 10/18/06
10/19/06	1536	[signature]	[signature] 1536 ~~1830~~

Remarks: Relinquished by Regina Allen to Steve Morris for transport to laboratory. Each container has a custody seal signed by Grant Price 10/18/06

CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☒ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: Giant Refining - Ciniza
Address: I-40 Exit 39
Bloomfield, NM 87347
Phone #: 505-722-3833
Fax #: 505-722-0210

Project Name: Fan out area Sampling
Project #: —
Project Manager: Regina Allen
Sampler: Grant Price
Sample Temperature:

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HNO_3	Preservative: NaOH	HEAL No. (lab use only)	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)	RCRA 8 Metals	7470 Mercury	335.2 Cyanide		Air Bubbles or Headspace (Y or N)
10/18/06	1630	H_2O	EB101806	4 VOA, 1 250, 1 500		X	X	0610228-25			X								X		X	X	X		
10/17/06	1730	H_2O	EB101706	4 VOA, 1 250, 1 500		X	X	0610228-26			X								X		X	X	X		

Date	Time	Relinquished By: (Signature)	Received By: (Signature)
10/18/06	1830	Regina Allen	[signature]
10/19/06	1536	[signature]	10/19/06 1536

Remarks: VOAs Pres. w/ HCL
250 w/ NaOH
500 w/ HNO_3
Each container has a custody seal signed by Grant Price 10/18/06
Relinquished by Regina Allen to Steve Morris for transport to laboratory

Tier II Data Validation Report

Client: Giant Refining Co. Ciniza	Laboratory: Hall Environmental Analysis Laboratory, Inc. and Energy Laboratories, Inc. (Cyanide results)
Project Name: Fan Out Area	Sample Matrix: Soil
Project Number: 072-006-001	Sample Start Date: October 17, 2006
Date Validated: November 22, 2006	Sample End Date: October 18, 2006
Samples Analyzed: B7-2', B7-5', B8-2', B8-5', B9-2', B9-5', B10-2', B10-5', B10-5' MS, B10-5' MSD, BD101806, Trip Blank(0610228-12), B1-2', B1-5', B2-2', B2-5', B3-2', B3-5', B4-2', B4-5', B5-2', B5-5', B6-2', B6-5', EB101806, and EB101706	
Parameters: VOCs, SVOCs, Metals, Cyanides, and DRO	
Laboratory Project ID: 0610228	
Data Validator: Lee Grater, Environmental Chemist	

Precision, Accuracy, Method Compliance, Completeness Assessment

Precision Acceptable

Comments: Precision is the measure of variability of sample measurements. Field precision is determined by a comparison of field duplicate sample results. Laboratory precision is determined by examining the laboratory duplicate results. Evaluation of both the field and laboratory duplicates for precision was accomplished using the relative percent difference (RPD). The RPD is defined as the difference between the primary and duplicate samples divided by the mean and expressed as a percentage. Sample B3-2' (0610228-17) was collected as the parent for sample BD101806 (0610228-11). All field duplicate and MS/MSD RPD values were within control limits, with one exception. One MS/MSD RPD value for selenium was reported to be above the control limits. All associated results will be qualified 'J/UJ' due to possible poor repeatability.

Accuracy Acceptable

Comments: Accuracy is a measure of sampling and analysis bias. Field accuracy is determined by collecting field, trip and equipment blanks to monitor for possible ambient or cross contamination during sampling. One trip, and two equipment blanks were collected. There were no detections reported in any of the associated blanks.

Laboratory accuracy is measured by evaluating laboratory control sample (LCS) and MS/MSD recoveries. LCS and MS/MSD recoveries were compared to published or laboratory control limits. All laboratory control and MS/MSD recoveries were within control limits, with a few exceptions. Two MS/MSD recoveries for selenium were reported to be outside of the control limits. All associated results will be qualified 'J/UJ' due to a possible low bias.

Method Compliance Acceptable

Comments: Method compliance was determined by reviewing the holding times, detection limits, surrogate recoveries, method blanks, and laboratory control samples against method specific requirements. The analyte cyanide was detected in one method blank. No qualification is necessary since the associated method blank was only associated with the equipment blanks and since all associated samples were non-detect. All other criteria for method compliance were acceptable. The laboratory met extraction and analytical hold times for all requested analyses.

Completeness Acceptable

Comments: Completeness is the overall ration of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody and laboratory analytical methods. Completeness also includes a review of the analytical reports and QC summary report. All data were presented in a clear and complete manner. A total of 43 data points were assigned "J" or "UJ" data qualifiers as a result of this data validation review. No data points were qualified or rejected; therefore, this data sets is 100% complete

Validation Criteria Checklist	
Data validation flags used in this review: The data flags "J" and "UJ" were used to denote that the reported values are estimated, or that the method reporting limit is estimated in this sample matrix.	
1. Did the laboratory identify any non-conformances related to the analytical data?	Yes
Comments: The laboratory noted that the cyanide samples were received by Energy Laboratories at 14°C. The surrogate in the DRO analysis for sample B9-2' (610228-05) failed to recover because the sample was diluted due to high concentrations of target compounds present in the sample.	
2. Were sample chain-of-custody forms complete?	Yes
Comments: The sample recorded on the chain-of-custody document as sample B3-5', collected on 10/18/06, at 1050 hrs, should have been labeled B3-2', (0610228-17), which was collected on 10/20/06. The chain-of-custody forms were complete from the field to the laboratory in all other respects.	
3. Were detection limits in accordance with the QAPP, permit, or method?	Yes
Comments: All detection limits were acceptable; however, some dilutions were required in order to determine concentrations for target constituents. Dilutions were reviewed and were acceptable for this data set.	
4. Were the requested analytical methods in compliance with the QAPP, permit, or COC?	Yes
Comments: All reported analytical methods were in compliance with those noted on the chain-of-custody.	
5. Were samples received in good condition?	No
Comments: All samples were received in good condition at temperatures of 1 degree Celsius. The laboratory noted that the cyanide samples were received by Energy Laboratories at 14°C. As a result of this occurrence, all cyanide results will be assigned "UJ" or "J" data qualifiers, denoting the samples were compromised in shipment, and that the reported results are estimated values.	
6. Were sample holding times met?	Yes
Comments: All samples were analyzed within the acceptable holding times.	
7. Were correct concentration units reported?	Yes
Comments: All sample results were reported in units of mg/kg. These units are acceptable when reporting concentrations for the associated matrix (soil).	
8. Do the laboratory reports include all constituents requested to be reported for a specific analytical method?	Yes
Comments: The laboratory appeared to have reported all constituents as requested by the client.	
9. Were the reporting requirements for flagged data met?	Yes
Comments: No data were flagged by the laboratory; however, the laboratory did note any dilutions and re-analyses that were performed on the associated samples.	
10. Is there indication that the continuous calibration verification was within acceptable limits?	Yes
Comments: There were no continuous calibration results noted in the data sets associated with the water samples; however, it is assumed that all results were acceptable based on other QC data.	
11. Were the instrument calibrations within method control limits?	Yes
Comments: There were no instrument calibration results noted in the data sets associated with the water samples; however, it is assumed that all results were acceptable based on other QC data.	
12. Were method blank samples analyzed on a 5% basis?	Yes
Comments: Method blank samples were analyzed on a 5% basis for all analyses and all associated batches.	
13. Were method blank detections reported for this data set?	Yes
Comments: The analyte cyanide (0.002 mg/L) was detected in the method blank associated with sample A2006-10_26_4_CN-01. No qualification is necessary since this method blank is only associated with equipment blanks and since all associated samples were non-detect.	

Validation Criteria Checklist	
14. Were matrix spike samples prepared on a 5% basis?	No
Comments: For the DRO and MRO analysis, a MS/MSD pair was prepared from sample 0610228-08. For the analysis of cyanide, two MS/MSD pairs were prepared from samples from other clients sample sets. For the Method 8260B analysis, two MS/MSD pairs were prepared from samples 0610228-04, and -21. For the Method 8270C analysis, no MS samples were analyzed. The Method 8270C analysis will be accepted on the basis of the LCS and MB results. For the Method 7471 analysis, two MS/MSD pairs were prepared from samples 0610228-15, and -24. For the Method 6010 analysis, three MS/MSD pairs were prepared from samples 0610228-11, -24, and -26.	
15. Were matrix spike recoveries within acceptable limits?	No
Comments: For samples 0610228-11B and 24B, the MS (0% and 34.2%, respectively)/MSD (54.4% and 37.8%, respectively) recoveries for selenium were reported to be outside of the control limits of 75-125%. In addition, for sample 11B, the RPD value for selenium (200%; acceptable limit 30%) was reported to be above the acceptable limit of 30%. All associated results will be qualified 'J/UJ' due to possible poor repeatability and a possible low bias.	
16. Were laboratory control samples analyzed on a 5% basis?	Yes
Comments: Laboratory control samples were analyzed on a 5% basis for all analyses.	
17. Were laboratory control recoveries within acceptable limits?	Yes
Comments: All laboratory control recoveries were within control limits.	
18. Were surrogate recoveries within control limits?	No
Comments: In sample B9-2', the surrogate DNOP (0%; acceptable range 61.7-135%) was reported to be outside of the control limits. This is acceptable per the method. In sample B9-2', the surrogates 4-terphenyl-d14 (27.6%; acceptable range 34.6-151%) and phenol-d5 (36.6%; acceptable range 37.6-118%) were recovered outside of the control limits. No qualification is necessary since all other surrogate recoveries were acceptable.	
19. Were equipment blanks and field blanks collected on a 10% basis?	Yes
Comments: One trip, and two equipment blanks were collected during this sampling event.	
20. Were detections found in trip blanks, equipment blanks, or field blanks?	No
Comments: There were no detections in the trip, equipment, or field blanks.	
21. Were field duplicates collected on a 10% basis?	Yes
Comments: One field duplicate was collected in this sampling event. BD101806 is a duplicate of B3-2' (0610228-11).	
22. Were field duplicate RPD values less than 30%?	Yes
Comments: All field duplicate RPD values were less than the acceptable value of 30% (Table 2).	
23. General Comments: All data were presented in a clear and complete manner. Because the cyanide samples were received by Energy Laboratories, Inc., at a temperature of 14°C, all cyanide results will be "J" or "UJ" flagged as estimated values. Due to the consistent low spike recoveries for selenium in MS/MSD samples prepared from this sample set, it is apparent that there is a low bias in the selenium results due to sample matrix interferences, and all selenium results will be "UJ" or "J" flagged as estimated values in this sample matrix. No data points were rejected; therefore these data sets are 100% complete.	

TABLE 1. DATA QUALIFICATION, GIANT REFINING COMPANY, CINIZA
HALL ENVIRONMENTAL LABORATORY DATA SET 0610228

Analyte	Sample ID	Laboratory Assigned ID	Laboratory Result	Flag	Reason
Cyanide	B7-2’	0610228-01	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B7-5’	0610228-02	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B8-2’	0610228-03	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B8-5’	0610228-04	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B9-2’	0610228-05	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B9-5’	0610228-06	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B10-2’	0610228-07	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B10-5’	0610228-08	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	BD101806	0610228-11	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B1-2’	0610228-13	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B1-5’	0610228-14	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B2-2’	0610228-15	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B2-5’	0610228-16	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B3-2’	0610228-17	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B3-5’	0610228-18	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B4-2’	0610228-19	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B4-5’	0610228-20	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B5-2’	0610228-21	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B5-5’	0610228-22	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B6-2’	0610228-23	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B6-5’	0610228-24	ND	UJ	Samples were received by laboratory at 14°C
Selenium	B7-2’	0610228-01	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B7-5’	0610228-02	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B8-2’	0610228-03	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B8-5’	0610228-04	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B9-2’	0610228-05	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B9-5’	0610228-06	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B10-2’	0610228-07	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B10-5’	0610228-08	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	BD101806	0610228-11	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B1-2’	0610228-13	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B1-5’	0610228-14	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B2-2’	0610228-15	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B2-5’	0610228-16	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B3-2’	0610228-17	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B3-5’	0610228-18	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B4-2’	0610228-19	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B4-5’	0610228-20	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B5-2’	0610228-21	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B5-5’	0610228-22	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B6-2’	0610228-23	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B6-5’	0610228-24	ND	UJ	MS/MSD spike failed to recover – low bias.

J – Indicates estimated detection value.
UJ – Indicates estimated reporting limit in this sample matrix.

TABLE 2. FIELD DUPLICATE SUMMARY, GIANT REFINING COMPANY, CINIZA
HALL ENVIRONMENTAL LABORATORY DATA SET 0610228

Sample ID: Parent sample B3-2' (0610228-17) Duplicate sample: BD101806			
Analyte	**Laboratory Result (mg/L)**	**Duplicate Result (mg/L)**	**Relative Percent Difference (RPD)**
Barium	260	290	10.9
Chromium	9.0	9.4	4.35
Lead	11.0	10.0	9.5
Field duplicate RPD control limits should not exceed 30% as established by USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, February 1988. No qualification is necessary since all RPD values were less than 30%.			

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Wednesday, May 23, 2007

Steve Morris
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-3833
FAX (505) 722-0210

RE: Additional Fan out area samples

Order No.: 0705313

Dear Steve Morris:

Hall Environmental Analysis Laboratory, Inc. received 12 sample(s) on 5/21/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc.

Date: *23-May-07*

CLIENT: Giant Refining Co
Project: Additional Fan out area samples
Lab Order: 0705313

Lab ID: 0705313-01 **Collection Date:** 5/21/2007
Client Sample ID: BD 5212007 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	1300	100		mg/Kg	10	5/22/2007 1:55:15 PM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	5/22/2007 1:55:15 PM
Surr: DNOP	88.8	61.7-135		%REC	10	5/22/2007 1:55:15 PM

Lab ID: 0705313-02 **Collection Date:** 5/21/2007 12:30:00 PM
Client Sample ID: B-8 NW **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	610	100		mg/Kg	10	5/22/2007 2:29:36 PM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	5/22/2007 2:29:36 PM
Surr: DNOP	104	61.7-135		%REC	10	5/22/2007 2:29:36 PM

Lab ID: 0705313-03 **Collection Date:** 5/21/2007 12:37:00 PM
Client Sample ID: B-8 NE **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	1300	100		mg/Kg	10	5/22/2007 3:04:17 PM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	5/22/2007 3:04:17 PM
Surr: DNOP	101	61.7-135		%REC	10	5/22/2007 3:04:17 PM

Lab ID: 0705313-04 **Collection Date:** 5/21/2007 12:42:00 PM
Client Sample ID: B-8 SW **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	88	10		mg/Kg	1	5/23/2007 8:02:24 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/23/2007 8:02:24 AM
Surr: DNOP	98.2	61.7-135		%REC	1	5/23/2007 8:02:24 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *23-May-07*

CLIENT: Giant Refining Co
Project: Additional Fan out area samples
Lab Order: 0705313

Lab ID: 0705313-05
Client Sample ID: B-8 SE
Collection Date: 5/21/2007 12:47:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	650	100		mg/Kg	10	5/22/2007 4:48:05 PM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	5/22/2007 4:48:05 PM
Surr: DNOP	106	61.7-135		%REC	10	5/22/2007 4:48:05 PM

Lab ID: 0705313-06
Client Sample ID: B-8 Center
Collection Date: 5/21/2007 12:52:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	790	100		mg/Kg	10	5/22/2007 1:20:34 PM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	5/22/2007 1:20:34 PM
Surr: DNOP	106	61.7-135		%REC	10	5/22/2007 1:20:34 PM

Lab ID: 0705313-09
Client Sample ID: B-9 NW
Collection Date: 5/21/2007 1:09:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	130	10		mg/Kg	1	5/22/2007 11:37:16 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/22/2007 11:37:16 AM
Surr: DNOP	103	61.7-135		%REC	1	5/22/2007 11:37:16 AM

Lab ID: 0705313-10
Client Sample ID: B-9 NE
Collection Date: 5/21/2007 1:18:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	200	10		mg/Kg	1	5/22/2007 12:11:41 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/22/2007 12:11:41 PM
Surr: DNOP	89.0	61.7-135		%REC	1	5/22/2007 12:11:41 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *23-May-07*

CLIENT: Giant Refining Co
Project: Additional Fan out area samples
Lab Order: 0705313

Lab ID: 0705313-11
Client Sample ID: B-9 SW
Collection Date: 5/21/2007 1:23:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	210	10		mg/Kg	1	5/22/2007 12:46:11 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/22/2007 12:46:11 PM
Surr: DNOP	87.1	61.7-135		%REC	1	5/22/2007 12:46:11 PM

Lab ID: 0705313-12
Client Sample ID: B-9 SE
Collection Date: 5/21/2007 1:30:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	210	100		mg/Kg	10	5/22/2007 5:22:48 PM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	5/22/2007 5:22:48 PM
Surr: DNOP	105	61.7-135		%REC	10	5/22/2007 5:22:48 PM

Lab ID: 0705313-13
Client Sample ID: EB
Collection Date: 5/21/2007 1:40:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	5/22/2007 8:16:12 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	5/22/2007 8:16:12 PM
Surr: DNOP	116	58-140		%REC	1	5/22/2007 8:16:12 PM

Lab ID: 0705313-14
Client Sample ID: B9 Center
Collection Date: 5/21/2007 1:37:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	2600	100		mg/Kg	10	5/22/2007 5:57:28 PM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	5/22/2007 5:57:28 PM
Surr: DNOP	93.7	61.7-135		%REC	10	5/22/2007 5:57:28 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Additional Fan out area samples
Work Order: 0705313

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8015									
Sample ID: MB-13006		*MBLK*			Batch ID:	**13006**	Analysis Date:	5/22/2007 9:54:10 AM	
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-13006		*LCS*			Batch ID:	**13006**	Analysis Date:	5/22/2007 10:28:31 AM	
Diesel Range Organics (DRO)	39.23	mg/Kg	10	78.5	64.6	116			
Sample ID: LCSD-13006		*LCSD*			Batch ID:	**13006**	Analysis Date:	5/22/2007 11:02:51 AM	
Diesel Range Organics (DRO)	43.64	mg/Kg	10	87.3	64.6	116	10.6	17.4	
Method: SW8015									
Sample ID: MB-13003		*MBLK*			Batch ID:	**13003**	Analysis Date:	5/22/2007 6:32:11 PM	
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-13003		*LCS*			Batch ID:	**13003**	Analysis Date:	5/22/2007 7:06:50 PM	
Diesel Range Organics (DRO)	4.973	mg/L	1.0	99.5	74	157			
Sample ID: LCSD-13003		*LCSD*			Batch ID:	**13003**	Analysis Date:	5/22/2007 7:41:33 PM	
Diesel Range Organics (DRO)	5.046	mg/L	1.0	101	74	157	1.47	23	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name GIANTREFIN

Date and Time Received: 5/22/2007

Work Order Number 0705313

Received by NJM

Checklist completed by _____ Signature _____ Date 5/22/07

Matrix: Carrier name Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	2°	*4° C ± 2 Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

CHAIN-OF-CUSTODY RECORD

QA / QC Package: Std ☒ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: Giant Refining Company - Ciniza
Address: Route 3 Box 7, Gallup, NM 87301
Phone #: 505-722-3833
Fax #: 505-722-0210

Project Name: Additional Fan out area samples
Project #:
Project Manager: Steve Morris (Giant) 387631-3090 Regina Allen (Tri hydro)
Sampler: Regina Allen / Grant Price
Sample Temperature: 20

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative HgCl$_2$	Preservative HNO$_3$	Preservative None	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
5/21/07	—	soil	BD 5212007	1			X	0705313-1			X														
5/21/07	1230	soil	B-8 NW	1			X	-2			X														
5/21/07	1237	soil	B-8 NE	1			X	-3			X														
5/21/07	1242	soil	B-8 SW	1			X	-4			X														
5/21/07	1247	soil	B-8 SE	1			X	-5			X														
5/21/07	1252	soil	B-8 Center	1			X	-6			X														
5/21/07	1256	soil	MS - B8 Center	1			X	-6			X														
5/21/07	1300	soil	MSD - B8 Center	1			X	-6			X														
5/21/07	1309	soil	B9-NW	1			X	-9			X														
5/21/07	1318	soil	B9-NE	1			X	-10			X														
5/21/07	1323	soil	B9-SW	1			X	-11			X														
5/21/07	1330	soil	B9-SE	1			X	-12			X														

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	
5/21/07	5:00			5/21/07 5pm
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	

Remarks: 24 hour DRO on all but BD, MS, MSD, and EB

CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☐ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

2 of 2

Client: Giant Refining Company - Ciniza

Address: Route 3 Box 7
Gallup, NM 87301

Phone #: 505-722-3833

Fax #: 505-722-0210

Project Name: Additional Fan out Area Samples

Project #:

Project Manager: Steve Morris (Giant)
307 631 3090 Regina Allen / Trihydro

Sampler: Regina Allen / Grant Price

Sample Temperature: 20

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HNO_3	Preservative: HCl	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
5/21/07	1340	Water	EB	3			X	0705213-13			X														
5/21/07	1337	Soil	B9-center	1			None	-14			X														

Date	Time	Relinquished By: (Signature)	Received By: (Signature)
5/21/07	5:00	[signature]	[signature] 5/21/07 5:00pm
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)

Remarks: 24 hour DRO on all but BD, MS, MSD, and EB

Tier II Data Validation Report Summary

Client: Western Refining Company, Gallup	Laboratory: Hall Environmental Analysis Laboratory, Inc.
Project Name: May 2007 Sampling Event	Sample Matrix: Soil
Project Number: 697-017-002	Sample Start Date: May 21, 2007
Date Validated: June 18, 2009	Sample End Date: May 21, 2007
Parameters Included: Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by Environmental Protection Agency (EPA) Method 8015B	
Laboratory Project IDs: 0705313	
Data Validator's Name: Jessica Swanson, Environmental Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services group on the analytical data report package generated by Hall Environmental Analysis Laboratory, Inc. evaluating samples from the Western Refining Company site located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values of samples from field duplicate pairs. Laboratory accuracy was established by reviewing the demonstrated percent recoveries of laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) to verify that none of the data were biased. Additionally, field accuracy was established by collecting an equipment blank to monitor for possible ambient or cross contamination during sampling. Method compliance was established by reviewing holding times, detection limits, surrogate recoveries, method blanks, and the LCS and LCSD percent recoveries against method specific requirements. Completeness was evaluated by determining the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody, laboratory analytical methods, and any other necessary documents associated with this analytical data set.

Data were evaluated in general accordance with validation criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-08-01, June 2008 with additional reference to USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999. Review of duplicates is conducted in accordance with USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.

Tier II Data Validation Report Summary

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
BD 5212007	0705313-01
B-8 NW	0705313-02
B-8 NE	0705313-03
B-8 SW	0705313-04
B-8 SE	0705313-05
B-8 Center	0705313-06
B-9 NW	0705313-09
B-9 NE	0705313-10
B-9 SW	0705313-11
B-9 SE	0705313-12
EB	0705313-13
B9 Center	0705313-14

Tier II Data Validation Report

The samples were analyzed for client-specified analytes. Chain-of-custody (COC) completeness is included in Section #3. The laboratory data were reviewed to evaluate compliance with the required methods and the quality of the reported data. A leading check mark (✓) indicates that the referenced data were deemed acceptable. A preceding crossed circle (⊗) signifies problems with the referenced data that may have warranted attaching qualifiers to the data.

- ✓ Data Completeness
- ✓ COC Documentation
- ✓ Holding Times and Preservation
- ✓ Laboratory Blanks
- ✓ System Monitoring Compounds (i.e. Surrogates)
- ✓ Laboratory Control Samples/Laboratory Control Sample Duplicates (LCS/LCSD)
- ✓ Field Duplicates
- ✓ Equipment Blank

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Section #2.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data which are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R, the data may be used for site evaluation, with the reasons for qualification being given consideration when interpreting sample concentrations. Data points which are assigned an R qualifier should not be used for any site evaluation purposes. Data were not qualified as a result of this validation.

Data Completeness

The analyses appeared to be performed as requested on the chain-of-custody records. The associated samples were received by the laboratory and appeared to be analyzed properly. No data points were rejected. The data completeness measure for this data package is 100%.

VALIDATION CRITERIA CHECKLIST	
1. Did the laboratory identify any non-conformances related to the analytical data? Comments: The laboratory did not identify any non-conformances related to this data set.	No
2. Were data qualification flags used by the laboratory? If yes, define. Comments: The laboratory did not use data qualification flags with this data set.	No
3. Were sample chain-of-custody forms complete? Comments: The COC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.	Yes
4. Were detection limits in accordance with the QAPP, permit, or method, or indicated as acceptable by the Tier I validator? Comments: Detection limits were reviewed and appeared to be acceptable. Dilutions up to 10 times were applied to some of the samples in this data set. The final usability with respect to dilutions will be determined by the project team.	Yes
5. Were the requested analytical methods in compliance with the QAPP, permit, or COC? Comments: The requested analytical methods were in compliance with what was requested on the COC.	Yes
6. Were samples received in good condition within method specified requirements? Comments: Samples were received intact and in good condition. Cooler temperatures were within the 4°C +/- 2°C acceptable range at 2.0°C, as noted in the Sample Receipt Checklist. The shipping cooler was marked as being received in good condition by the laboratory on the Sample Receipt Checklist.	Yes
7. Were samples analyzed within method specified or technical holding times? Comments: Samples were analyzed within the acceptable hold time.	Yes
8. Were reported units appropriate for the associated sample matrix/matrices and method(s) of analyses? Comments: Analyte concentrations were reported in units of mg/kg. The reported units are acceptable for the soil matrix.	Yes
9. Do the laboratory reports include all constituents requested to be reported as indicated by the Tier I validator? Comments: As indicated on the Tier I data validation, laboratory reported constituents were in accordance with those requested.	Yes
10. Was there indication from the laboratory that the initial or continued calibration verification results were within acceptable limits? Comments: Initial and continuing calibration data were not included as part of this data set; however, these data are assumed to be acceptable as the laboratory did not note that any calibration verification results were outside acceptable limits.	N/A
11. Was the total number of method blank samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method? Comments: Method blanks were prepared on a greater than 5% basis.	Yes
12. Were method blank detections reported for this data set? Comments: Method blank detections were not reported for this data set.	No
13. Was the total number of matrix spike samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method? Comments: Matrix spike samples were not prepared for this data set.	No
14. Were matrix spike recoveries within laboratory-specified limits? Comments: Matrix spike samples were not prepared for this data set.	N/A

VALIDATION CRITERIA CHECKLIST	
15. Was the total number of laboratory control samples analyzed equal to at least 5% of the total number of samples, or analyzed as required by the method? Comments: Laboratory control samples were reported on a greater than 5% basis.	Yes
16. Were laboratory control recoveries within laboratory-specified limits? Comments: Laboratory control recoveries were within laboratory-specified limits.	Yes
17. Were surrogate recoveries within laboratory control limits? Comments: Surrogate recoveries were within laboratory control limits.	Yes
18. Was the number of equipment, trip, or field blanks collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator? Comments: One equipment blank (EB) was submitted with this data set which is at least 10% the total number of samples.	Yes
19. Were detections found in trip blanks, equipment blanks, or field blanks? Comments: There were no detections in the equipment blank.	No
20. Were the field duplicates collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator? Comments: One field duplicate, BD 5212007 was collected as a duplicate of sample B-8 Center, which is at least 10% the total number of samples.	Yes
21. Were field duplicate RPD values less than the upper RPD limit (soil [50%], water [30%], or air/vapor [25%]), as specified by the laboratory or method? Comments: Field duplicate RPD values were less than the upper RPD limit of 50% for soil samples as shown in the Field Duplicate Summary table at the end of this report.	Yes
22. Were laboratory duplicate RPD values within laboratory-specified limits? Comments: Laboratory duplicates were not prepared for this data set.	N/A

FIELD DUPLICATE SUMMARY

Client Sample ID: B-8 Center Field Duplicate Sample ID: BD5212007			
Analyte	**Laboratory Result (mg/kg)**	**Duplicate Result (mg/kg)**	**Relative Percent Difference (RPD)**
DRO	790	1300	48.8%
Field duplicate RPD control limits should not exceed 30% for water, 50% for soil, or 25% for air or vapor as established by USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.			

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Wednesday, December 30, 2009

Steve Morris
Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-3258
FAX (505) 722-0210

RE: Additional Fan Out Area Samples

Order No.: 0705361

Dear Steve Morris:

Hall Environmental Analysis Laboratory, Inc. received 8 sample(s) on 5/23/2007 for the analyses presented in the following report.

This report is an addendum to the report dated May 29, 2007. This is an updated report.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

ACCREDITED IN ACCORDANCE WITH nelac

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc. **Date:** *30-Dec-09*

CLIENT: Western Refining Southwest, Gallup
Project: Additional Fan Out Area Samples
Lab Order: 0705361

CASE NARRATIVE

Analytical Comments for METHOD 8015DRO_S, SAMPLE 0705361-04A: DNOP not recovered due to dilution

Hall Environmental Analysis Laboratory, Inc.

Date: *30-Dec-09*

CLIENT: Western Refining Southwest, Gallup
Project: Additional Fan Out Area Samples

Lab Order: 0705361

Lab ID: 0705361-01 **Collection Date:** 5/23/2007 11:25:00 AM
Client Sample ID: B8 extra 2' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	140	10		mg/Kg	1	5/24/2007 12:22:21 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/24/2007 12:22:21 PM
Surr: DNOP	98.0	61.7-135		%REC	1	5/24/2007 12:22:21 PM

Lab ID: 0705361-02 **Collection Date:** 5/23/2007 11:42:00 AM
Client Sample ID: B8 new NE 3' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	130	10		mg/Kg	1	5/25/2007 12:24:00 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/25/2007 12:24:00 AM
Surr: DNOP	102	61.7-135		%REC	1	5/25/2007 12:24:00 AM

Lab ID: 0705361-03 **Collection Date:** 5/23/2007 11:53:00 AM
Client Sample ID: B8 new NW 3' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	130	10		mg/Kg	1	5/25/2007 12:58:14 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/25/2007 12:58:14 AM
Surr: DNOP	90.0	61.7-135		%REC	1	5/25/2007 12:58:14 AM

Lab ID: 0705361-04 **Collection Date:** 5/23/2007 12:00:00 PM
Client Sample ID: B8 new SE 3' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	5800	500		mg/Kg	50	5/25/2007 8:56:05 AM
Motor Oil Range Organics (MRO)	ND	2500		mg/Kg	50	5/25/2007 8:56:05 AM
Surr: DNOP	0	61.7-135	S	%REC	50	5/25/2007 8:56:05 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *30-Dec-09*

CLIENT: Western Refining Southwest, Gallup
Project: Additional Fan Out Area Samples

Lab Order: 0705361

Lab ID: 0705361-05 **Collection Date:** 5/23/2007 12:25:00 PM
Client Sample ID: B8 new NE 5' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	11	10		mg/Kg	1	5/25/2007 1:32:34 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/25/2007 1:32:34 AM
Surr: DNOP	90.3	61.7-135		%REC	1	5/25/2007 1:32:34 AM

Lab ID: 0705361-06 **Collection Date:** 5/23/2007 12:55:00 PM
Client Sample ID: B8 new NW 5' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	310	10		mg/Kg	1	5/25/2007 2:06:41 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/25/2007 2:06:41 AM
Surr: DNOP	94.9	61.7-135		%REC	1	5/25/2007 2:06:41 AM

Lab ID: 0705361-07 **Collection Date:** 5/23/2007 1:15:00 PM
Client Sample ID: B8 new SE 5' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	5000	100		mg/Kg	10	5/25/2007 12:56:28 PM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	5/25/2007 12:56:28 PM
Surr: DNOP	103	61.7-135		%REC	10	5/25/2007 12:56:28 PM

Lab ID: 0705361-08 **Collection Date:** 5/23/2007 1:30:00 PM
Client Sample ID: B9 new Center 5' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	150	10		mg/Kg	1	5/25/2007 3:14:52 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/25/2007 3:14:52 AM
Surr: DNOP	100	61.7-135		%REC	1	5/25/2007 3:14:52 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: Additional Fan Out Area Samples **Work Order:** 0705361

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics									
Sample ID: MB-13024		*MBLK*			Batch ID:	**13024**	Analysis Date:	5/24/2007 8:23:16 AM	
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: MB-13027		*MBLK*			Batch ID:	**13027**	Analysis Date:	5/24/2007 3:47:36 PM	
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-13024		*LCS*			Batch ID:	**13024**	Analysis Date:	5/24/2007 8:57:23 AM	
Diesel Range Organics (DRO)	40.59	mg/Kg	10	81.2	64.6	116			
Sample ID: LCS-13027		*LCS*			Batch ID:	**13027**	Analysis Date:	5/24/2007 4:21:58 PM	
Diesel Range Organics (DRO)	39.37	mg/Kg	10	78.7	64.6	116			
Sample ID: LCSD-13024		*LCSD*			Batch ID:	**13024**	Analysis Date:	5/24/2007 9:31:32 AM	
Diesel Range Organics (DRO)	43.16	mg/Kg	10	86.3	64.6	116	6.12	17.4	
Sample ID: LCSD-13027		*LCSD*			Batch ID:	**13027**	Analysis Date:	5/24/2007 4:56:24 PM	
Diesel Range Organics (DRO)	42.55	mg/Kg	10	85.1	64.6	116	7.76	17.4	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

1 of 1

CHAIN-OF-CUSTODY RECORD

QA / QC Package: Std ☒ Level 4 ☐ Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: Giant Refining Company - Ciniza

Address: Route 3 Box 7
Gallup, NM 87301

Phone #:

Fax #:

Project Name: Additional Fan out area Samples

Project #: Steve Morris (Giant) Regina Allen (Trihydro) 307 63[redacted]3090

Project Manager:

Sampler: Regina Allen / Grant Price

Sample Temperature: 4°

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HNO_3	Preservative: none	HEAL No. 0705361	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
5/23/07	1125	soil	B8 extra 2'	1			X	1			X														
5/23/07	1142	soil	B8 new NE 3'	1			X	2			X														
5/23/07	1153	soil	B8 new NW 3'	1			X	3			X														
5/23/07	1200	soil	B8 new ~~SW~~ SE 3'	1			X	4			X														
5/23/07	1225	soil	B8 new NE 5'	1			X	5			X														
5/23/07	1255	soil	B8 new NW 5'	1			X	6			X														
5/23/07	1315	soil	B8 new SE 5'	1			X	7			X														
5/23/07	1330	soil	B9 new Center 5'	1			X	8			X														

Date	Time	Relinquished By: (Signature)	Received By: (Signature)
5/23/07	4:34	Regina Allen	[signature]
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature) 5/23/07 1634

Remarks: Please run Diesel only
Please Rush - 24 hr. "B8-extra 2'"
Others 72 hr turnaround.

Tier II Data Validation Report Summary

Client: Western Refining Company, Gallup	Laboratory: Hall Environmental Analysis Laboratory, Inc.
Project Name: May 2007 Sampling Event	Sample Matrix: Soil
Project Number: 697-017-002	Sample Start Date: May 23, 2007
Date Validated: June 18, 2009	Sample End Date: May 23, 2007
Parameters Included: Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by Environmental Protection Agency (EPA) Method 8015B	
Laboratory Project IDs: 0705361	
Data Validator's Name: Jessica Swanson, Environmental Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services group on the analytical data report package generated by Hall Environmental Analysis Laboratory, Inc. evaluating samples from the Western Refining Company site located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Laboratory accuracy and precision was established by reviewing the demonstrated percent recoveries of laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) to verify that none of the data were biased. Method compliance was established by reviewing holding times, detection limits, surrogate recoveries, method blanks, and the LCS and LCSD percent recoveries against method specific requirements. Completeness was evaluated by determining the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody, laboratory analytical methods, and any other necessary documents associated with this analytical data set.

Data were evaluated in general accordance with validation criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-08-01, June 2008 with additional reference to USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
B8 extra 2'	0705361-01
B8 new NE 3'	0705361-02
B8 new NW 3'	0705361-03
B8 new SW 3'	0705361-04
B8 new NE 5'	0705361-05
B8 new NW 5'	0705361-06
B8 new SE 5'	0705361-07
B9 new Center 5'	0705361-08

Tier II Data Validation Report

The samples were analyzed for client-specified analytes. Chain-of-custody (COC) completeness is included in Section #3. The laboratory data were reviewed to evaluate compliance with the required methods and the quality of the reported data. A leading check mark (✓) indicates that the referenced data were deemed acceptable. A preceding crossed circle (⊗) signifies problems with the referenced data that may have warranted attaching qualifiers to the data.

- ✓ Data Completeness
- ✓ COC Documentation
- ✓ Holding Times and Preservation
- ✓ Laboratory Blanks
- ✓ System Monitoring Compounds (i.e. Surrogates)
- ✓ Laboratory Control Samples/Laboratory Control Sample Duplicates (LCS/LCSD)

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Section #2.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data which are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R, the data may be used for site evaluation, with the reasons for qualification being given consideration when interpreting sample concentrations. Data points which are assigned an R qualifier should not be used for any site evaluation purposes. Data were not qualified as a result of this validation.

Data Completeness

The analyses appeared to be performed as requested on the chain-of-custody records. The associated samples were received by the laboratory and appeared to be analyzed properly. No data points were rejected. The data completeness measure for this data package is 100%.

VALIDATION CRITERIA CHECKLIST	
1. Did the laboratory identify any non-conformances related to the analytical data?	Yes
Comments: The laboratory noted in the case narrative the following non-conformance. **Method 8015B DRO Analysis:** The surrogate DNOP, associated with sample B8 new SW 3', was not recovered due to dilution.	
2. Were data qualification flags used by the laboratory? If yes, define.	Yes
Comments: The laboratory used the following data qualification flag with this data set. S – Spike recovery outside accepted recovery limits.	
3. Were sample chain-of-custody forms complete?	Yes
Comments: The COC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.	
4. Were detection limits in accordance with the QAPP, permit, or method, or indicated as acceptable by the Tier I validator?	Yes
Comments: Detection limits were reviewed and appeared to be acceptable. Dilutions from 10 to 50 times were applied by the laboratory to samples B8 new SW 3' and B8 new SE 5' for the analysis of DRO. The final usability of the data with respect to dilutions will be determined by the project team.	
5. Were the requested analytical methods in compliance with the QAPP, permit, or COC?	Yes
Comments: The requested analytical methods were in compliance with what was requested on the COC.	
6. Were samples received in good condition within method specified requirements?	Yes
Comments: Samples were received intact and in good condition. Cooler temperatures were within the 4°C +/- 2°C acceptable range at 4.0°C, as noted in the Sample Receipt Checklist. The shipping cooler was marked as being received in good condition by the laboratory on the Sample Receipt Checklist.	
7. Were samples analyzed within method specified or technical holding times?	Yes
Comments: Samples were analyzed within the acceptable hold time.	
8. Were reported units appropriate for the associated sample matrix/matrices and method(s) of analyses?	Yes
Comments: Analyte concentrations were reported in units of mg/kg. The reported units are acceptable for the soil matrix.	
9. Do the laboratory reports include all constituents requested to be reported as indicated by the Tier I validator?	Yes
Comments: As indicated on the Tier I data validation, laboratory reported constituents were in accordance with those requested.	
10. Was there indication from the laboratory that the initial or continued calibration verification results were within acceptable limits?	N/A
Comments: Initial and continuing calibration data were not included as part of this data set; however, these data are assumed to be acceptable as the laboratory did not note that any calibration verification results were outside acceptable limits.	
11. Was the total number of method blank samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Method blanks were prepared on a greater than 5% basis.	
12. Were method blank detections reported for this data set?	No
Comments: Method blank detections were not reported for this data set.	

VALIDATION CRITERIA CHECKLIST	
13. Was the total number of matrix spike samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method? Comments: Matrix spike samples were not prepared for this data set.	No
14. Were matrix spike recoveries within laboratory-specified limits? Comments: Matrix spike samples were not prepared for this data set.	N/A
15. Was the total number of laboratory control samples analyzed equal to at least 5% of the total number of samples, or analyzed as required by the method? Comments: Laboratory control samples were reported on a greater than 5% basis.	Yes
16. Were laboratory control recoveries within laboratory-specified limits? Comments: Laboratory control recoveries were within laboratory-specified limits.	Yes
17. Were surrogate recoveries within laboratory control limits? Comments: Surrogate recoveries were within laboratory control limits. **Method 8015B DRO Analysis:** The surrogate di-n-octyl phthalate (DNOP), associated with sample B8 new SW 3', was not recovered due to dilution. This is acceptable and requires no further action.	Yes
18. Was the number of equipment, trip, or field blanks collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator? Comments: There were no blank samples submitted with this data set.	No
19. Were detections found in trip blanks, equipment blanks, or field blanks? Comments: There were no blank samples submitted with this data set.	N/A
20. Were the field duplicates collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator? Comments: Field duplicates were not collected with this data set.	No
21. Were field duplicate RPD values less than the upper RPD limit (soil [50%], water [30%], or air/vapor [25%]), as specified by the laboratory or method? Comments: Field duplicates were not collected with this data set.	N/A
22. Were laboratory duplicate RPD values within laboratory-specified limits? Comments: Laboratory duplicates were not prepared for this data set.	N/A

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Friday, June 08, 2007

Steve Morris
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-3833
FAX (505) 722-0210

RE: Additional Fan Out Area Samples

Order No.: 0706077

Dear Steve Morris:

Hall Environmental Analysis Laboratory, Inc. received 4 sample(s) on 6/5/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc.

Date: *08-Jun-07*

CLIENT: Giant Refining Co
Project: Additional Fan Out Area Samples
Lab Order: 0706077

Lab ID: 0706077-01 **Collection Date:** 5/23/2007 5:30:00 PM
Client Sample ID: B8 NEW SE-S1 3' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	9300	100		mg/Kg	10	6/8/2007 12:42:34 AM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	6/8/2007 12:42:34 AM
Surr: DNOP	92.5	61.7-135		%REC	10	6/8/2007 12:42:34 AM

Lab ID: 0706077-02 **Collection Date:** 5/23/2007 5:42:00 AM
Client Sample ID: B8 NEW SE-S1 5' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	1300	100		mg/Kg	10	6/8/2007 7:30:02 AM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	6/8/2007 7:30:02 AM
Surr: DNOP	90.1	61.7-135		%REC	10	6/8/2007 7:30:02 AM

Lab ID: 0706077-03 **Collection Date:** 5/23/2007 6:05:00 PM
Client Sample ID: B8 NEW SE-S2 3' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	1300	100		mg/Kg	10	6/8/2007 1:16:40 AM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	6/8/2007 1:16:40 AM
Surr: DNOP	91.3	61.7-135		%REC	10	6/8/2007 1:16:40 AM

Lab ID: 0706077-04 **Collection Date:** 5/23/2007 6:28:00 PM
Client Sample ID: B8 NEW SE-S2 5' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/7/2007 9:16:30 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/7/2007 9:16:30 PM
Surr: DNOP	96.8	61.7-135		%REC	1	6/7/2007 9:16:30 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Additional Fan Out Area Samples **Work Order:** 0706077

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8015									
Sample ID: MB-13118		*MBLK*			Batch ID:	13118	Analysis Date:	6/7/2007 6:14:36 PM	
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-13118		*LCS*			Batch ID:	13118	Analysis Date:	6/7/2007 6:49:17 PM	
Diesel Range Organics (DRO)	42.35	mg/Kg	10	84.7	64.6	116			
Sample ID: LCSD-13118		*LCSD*			Batch ID:	13118	Analysis Date:	6/7/2007 7:23:57 PM	
Diesel Range Organics (DRO)	42.06	mg/Kg	10	84.1	64.6	116	0.687	17.4	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name GIANTREFIN

Date and Time Received: 6/5/2007

Work Order Number 0706077

Received by AT

Checklist completed by Signature Date 6/5/07

Matrix Carrier name Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☑	No ☐	N/A ☐	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace? No VOA vials submitted	☑	Yes ☐	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	11°	*4° C ± 2 Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted Date contacted: Person contacted

Contacted by: Regarding

Comments:

Corrective Action

CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☐ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: Giant Refining Company - Ciniza

Address: Route 3 Box 7
Gallup, NM 87301

Phone #: (505) 722-3833

Fax #: (505) 722-0210

Project Name: Additional Fan Out Area Samples

Project #:

Project Manager: Steve Morris (Giant)
Regina Allen (Trihydro)

Sampler: Regina Allen / Grant Price

Sample Temperature: 11°

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HNO_3	Preservative: None	HEAL No. 0706077	BTEX + MTBE + TMB's (8021)	~~BTEX + MTBE + TPH (Gasoline Only)~~ SCM	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
5/23/07	5:30 PM	Soil	B8new SE-S13'	1-4oz			X	-1			X														
5/23/07	5:42 PM	Soil	B8new SE-S15'	1-4oz			X	-2			X														

Date	Time	Relinquished By: (Signature)	Received By: (Signature)
5/24/07	12:15	[signature]	[signature] 5/24/07
6/5/07	1325	[signature]	[signature] 6/5/07 1325

Remarks: 72 hr

CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☐ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: Giant Refining Company - Ciniza
Address: Route 3 Box 7
Gallup, NM 87301
Phone #: (505) 722-3833
Fax #: (505) 722-0210

Project Name: Additional Far out Area Samples
Project #:
Project Manager: Steve Morris (Giant) Regina Allen (Trihydro)
Sampler: Regina Allen / Grant Price
Sample Temperature: //

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HNO_3	Preservative: None	HEAL No. 0706077	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
5/23/07	6:05 PM	Soil	B8 new SE-52 3'	1-4oz			X	-3			X														
5/23/07	6:28 PM	Soil	B8 new SE-52 5'	1-4oz			X	-4			X														

Date	Time	Relinquished By: (Signature)	Received By: (Signature)
5/24/07	12:15	[signature]	[signature] 5/24/07
6/5/07	1325	[signature]	[signature] 6/5/07 1325

Remarks: 72 hr.

Tier II Data Validation Report Summary

Client: Western Refining Company, Gallup	Laboratory: Hall Environmental Analysis Laboratory, Inc.
Project Name: May 2007 Sampling Event	Sample Matrix: Soil
Project Number: 697-017-002	Sample Start Date: May 23, 2007
Date Validated: June 18, 2009	Sample End Date: May 23, 2007
Parameters Included: Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by Environmental Protection Agency (EPA) Method 8015B	
Laboratory Project IDs: 0706077	
Data Validator's Name: Jessica Swanson, Environmental Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services group on the analytical data report package generated by Hall Environmental Analysis Laboratory, Inc. evaluating samples from the Western Refining Company site located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Laboratory accuracy and precision was established by reviewing the demonstrated percent recoveries of laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) to verify that none of the data were biased. Method compliance was established by reviewing holding times, detection limits, surrogate recoveries, method blanks, and the LCS and LCSD percent recoveries against method specific requirements. Completeness was evaluated by determining the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody, laboratory analytical methods, and any other necessary documents associated with this analytical data set.

Data were evaluated in general accordance with validation criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-08-01, June 2008 with additional reference to USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
B8 NEW SE-S1 3'	0706077-01
B8 NEW SE-S1 5'	0706077-02
B8 NEW SE-S2 3'	0706077-03
B8 NEW SE-S2 5'	0706077-04

Tier II Data Validation Report

The samples were analyzed for client-specified analytes. Chain-of-custody (COC) completeness is included in Section #3. The laboratory data were reviewed to evaluate compliance with the required methods and the quality of the reported data. A leading check mark (✓) indicates that the referenced data were deemed acceptable. A preceding crossed circle (⊗) signifies problems with the referenced data that may have warranted attaching qualifiers to the data.

- ⊗ Data Completeness
- ✓ COC Documentation
- ⊗ Holding Times and Preservation
- ✓ Laboratory Blanks
- ✓ System Monitoring Compounds (i.e. Surrogates)
- ✓ Laboratory Control Samples/Laboratory Control Sample Duplicates (LCS/LCSD)

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Section #2.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data which are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R, the data may be used for site evaluation, with the reasons for qualification being given consideration when interpreting sample concentrations. Data points which are assigned an R qualifier should not be used for any site evaluation purposes. Data were qualified as a result of this validation for analysis past holding time and high sample temperatures.

Data qualifiers used during this validation included:

J – Estimated concentration

R - Rejected, Data not usable

Data Completeness

The analyses appeared to be performed as requested on the chain-of-custody records. The associated samples were received by the laboratory and appeared to be analyzed properly. There were five data points rejected. The data completeness measure for this data package is 37.5%.

VALIDATION CRITERIA CHECKLIST	
1. Did the laboratory identify any non-conformances related to the analytical data?	No
Comments: The laboratory did not identify any non-conformances related to this data set.	
2. Were data qualification flags used by the laboratory? If yes, define.	No
Comments: The laboratory did not use data qualification flags with this data set.	
3. Were sample chain-of-custody forms complete?	Yes
Comments: The COC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.	
4. Were detection limits in accordance with the QAPP, permit, or method, or indicated as acceptable by the Tier I validator?	Yes
Comments: Detection limits were reviewed and appeared to be acceptable. Dilutions up to 10 times were applied to some of the samples in this data set. The final usability of the data with respect to dilutions will be determined by the project team.	
5. Were the requested analytical methods in compliance with the QAPP, permit, or COC?	Yes
Comments: The requested analytical methods were in compliance with what was requested on the COC.	
6. Were samples received in good condition within method specified requirements?	No
Comments: Samples were received intact and in good condition. Cooler temperatures were above the 4°C +/- 2°C acceptable range at 11.0°C, as noted in the Sample Receipt Checklist. The shipping cooler was marked as being received in good condition by the laboratory on the Sample Receipt Checklist. **Since the samples were analyzed past the recommended holding time of 14 days for soil samples and the receipt temperature was above the recommended maximum temperature of 6°C, samples were qualified as J for detections and non-detections were rejected. The National Functional Guidelines recommends the rejection of non-detections in samples with temperatures above 6°C analyzed past 7 days.**	
7. Were samples analyzed within method specified or technical holding times?	No
Comments: Samples were analyzed past the recommended hold time as noted in question 6. Data were qualified as J or R.	
8. Were reported units appropriate for the associated sample matrix/matrices and method(s) of analyses?	Yes
Comments: Analyte concentrations were reported in units of mg/kg. The reported units are acceptable for the soil matrix.	
9. Do the laboratory reports include all constituents requested to be reported as indicated by the Tier I validator?	Yes
Comments: As indicated on the Tier I data validation, laboratory reported constituents were in accordance with those requested.	
10. Was there indication from the laboratory that the initial or continued calibration verification results were within acceptable limits?	N/A
Comments: Initial and continuing calibration data were not included as part of this data set; however, these data are assumed to be acceptable as the laboratory did not note that any calibration verification results were outside acceptable limits.	
11. Was the total number of method blank samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Method blanks were prepared on a greater than 5% basis.	
12. Were method blank detections reported for this data set?	No
Comments: Method blank detections were not reported for this data set.	

VALIDATION CRITERIA CHECKLIST	
13. Was the total number of matrix spike samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method? Comments: Matrix spike samples were not prepared for this data set.	No
14. Were matrix spike recoveries within laboratory-specified limits? Comments: Matrix spike samples were not prepared for this data set.	N/A
15. Was the total number of laboratory control samples analyzed equal to at least 5% of the total number of samples, or analyzed as required by the method? Comments: Laboratory control samples were reported on a greater than 5% basis.	Yes
16. Were laboratory control recoveries within laboratory-specified limits? Comments: Laboratory control recoveries were within laboratory-specified limits.	Yes
17. Were surrogate recoveries within laboratory control limits? Comments: Surrogate recoveries were within laboratory control limits.	Yes
18. Was the number of equipment, trip, or field blanks collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator? Comments: There were no blank samples submitted with this data set.	No
19. Were detections found in trip blanks, equipment blanks, or field blanks? Comments: There were no blank samples submitted with this data set.	N/A
20. Were the field duplicates collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator? Comments: There were no field duplicates collected with this data set.	Yes
21. Were field duplicate RPD values less than the upper RPD limit (soil [50%], water [30%], or air/vapor [25%]), as specified by the laboratory or method? Comments: There were no field duplicates collected with this data set.	N/A
22. Were laboratory duplicate RPD values within laboratory-specified limits? Comments: Laboratory duplicates were not prepared for this data set.	N/A

DATA QUALIFICATION SUMMARY

Analyte	Client Sample ID	Laboratory Assigned ID	Laboratory Result (mg/kg)	Reviewer Qualifier	Reason for Qualification
DRO	B8 NEW SE-S1 3'	0706077-01	9300	J	Sample was analyzed outside of the acceptable holding time. Sample preservation for temperature exceeded 6 degrees Celsius indicating possible volatilization.
DRO	B8 NEW SE-S1 5'	0706077-02	1300	J	Sample was analyzed outside of the acceptable holding time. Sample preservation for temperature exceeded 6 degrees Celsius indicating possible volatilization.
DRO	B8 NEW SE-S2 3'	0706077-03	1300	J	Sample was analyzed outside of the acceptable holding time. Sample preservation for temperature exceeded 6 degrees Celsius indicating possible volatilization.
DRO	B8 NEW SE-S2 5'	0706077-04	ND (10)	R	Sample was analyzed outside of the acceptable holding time. Sample preservation for temperature exceeded 6 degrees Celsius indicating possible volatilization.
MRO	B8 NEW SE-S1 3'	0706077-01	ND (500)	R	Sample was analyzed outside of the acceptable holding time. Sample preservation for temperature exceeded 6 degrees Celsius indicating possible volatilization.
MRO	B8 NEW SE-S1 5'	0706077-02	ND (500)	R	Sample was analyzed outside of the acceptable holding time. Sample preservation for temperature exceeded 6 degrees Celsius indicating possible volatilization.
MRO	B8 NEW SE-S2 3'	0706077-03	ND (500)	R	Sample was analyzed outside of the acceptable holding time. Sample preservation for temperature exceeded 6 degrees Celsius indicating possible volatilization.
MRO	B8 NEW SE-S2 5'	0706077-04	ND (50)	R	Sample was analyzed outside of the acceptable holding time. Sample preservation for temperature exceeded 6 degrees Celsius indicating possible volatilization.

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Wednesday, August 29, 2007

Steve Morris
Giant Refining Company
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-3833
FAX (505) 722-0210

RE: Fan Out Area

Order No.: 0708284

Dear Steve Morris:

Hall Environmental Analysis Laboratory, Inc. received 15 sample(s) on 8/21/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc.

Date: *29-Aug-07*

CLIENT: Giant Refining Company
Project: Fan Out Area

Lab Order: 0708284

Lab ID: 0708284-01 **Collection Date:** 8/20/2007 2:50:00 PM
Client Sample ID: B8_8_20_A_7' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	5500	100		mg/Kg	10	8/21/2007 9:42:58 PM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	8/21/2007 9:42:58 PM
Surr: DNOP	84.0	61.7-135		%REC	10	8/21/2007 9:42:58 PM

Lab ID: 0708284-02 **Collection Date:** 8/20/2007 11:15:00 AM
Client Sample ID: B8_8_20_B_7' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	2600	100		mg/Kg	10	8/22/2007 1:51:07 AM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	8/22/2007 1:51:07 AM
Surr: DNOP	80.1	61.7-135		%REC	10	8/22/2007 1:51:07 AM

Lab ID: 0708284-03 **Collection Date:** 8/20/2007 1:35:00 PM
Client Sample ID: B8_8_20_C_3' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	3400	100		mg/Kg	10	8/22/2007 2:26:23 AM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	8/22/2007 2:26:23 AM
Surr: DNOP	83.6	61.7-135		%REC	10	8/22/2007 2:26:23 AM

Lab ID: 0708284-04 **Collection Date:** 8/20/2007 1:50:00 PM
Client Sample ID: B8_8_20_C_5' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	660	10		mg/Kg	1	8/22/2007 12:05:16 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/22/2007 12:05:16 AM
Surr: DNOP	99.7	61.7-135		%REC	1	8/22/2007 12:05:16 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *29-Aug-07*

CLIENT: Giant Refining Company
Project: Fan Out Area

Lab Order: 0708284

Lab ID: 0708284-05 **Collection Date:** 8/20/2007 12:15:00 PM
Client Sample ID: B8_8_20_D_3' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	77	10		mg/Kg	1	8/22/2007 12:40:32 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/22/2007 12:40:32 AM
Surr: DNOP	70.4	61.7-135		%REC	1	8/22/2007 12:40:32 AM

Lab ID: 0708284-06 **Collection Date:** 8/20/2007 12:30:00 PM
Client Sample ID: B8_8_20_D_5' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	150	10		mg/Kg	1	8/22/2007 1:15:52 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/22/2007 1:15:52 AM
Surr: DNOP	116	61.7-135		%REC	1	8/22/2007 1:15:52 AM

Lab ID: 0708284-07 **Collection Date:** 8/20/2007 4:00:00 PM
Client Sample ID: B8_8_20_E_3' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	2200	200		mg/Kg	20	8/22/2007 3:36:25 AM
Motor Oil Range Organics (MRO)	ND	1000		mg/Kg	20	8/22/2007 3:36:25 AM
Surr: DNOP	76.2	61.7-135		%REC	20	8/22/2007 3:36:25 AM

Lab ID: 0708284-08 **Collection Date:** 8/20/2007 5:00:00 PM
Client Sample ID: B8_8_20_F_3' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	3500	200		mg/Kg	20	8/22/2007 4:11:27 AM
Motor Oil Range Organics (MRO)	ND	1000		mg/Kg	20	8/22/2007 4:11:27 AM
Surr: DNOP	84.4	61.7-135		%REC	20	8/22/2007 4:11:27 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *29-Aug-07*

CLIENT: Giant Refining Company
Project: Fan Out Area

Lab Order: 0708284

Lab ID: 0708284-09 **Collection Date:** 8/20/2007 5:40:00 PM
Client Sample ID: B8_8_20_G_3' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	440	10		mg/Kg	1	8/21/2007 10:18:56 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/21/2007 10:18:56 PM
Surr: DNOP	88.6	61.7-135		%REC	1	8/21/2007 10:18:56 PM

Lab ID: 0708284-10 **Collection Date:** 8/21/2007 11:40:00 AM
Client Sample ID: B8_8_21_H_3' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	3100	200		mg/Kg	20	8/22/2007 4:46:26 AM
Motor Oil Range Organics (MRO)	ND	1000		mg/Kg	20	8/22/2007 4:46:26 AM
Surr: DNOP	67.8	61.7-135		%REC	20	8/22/2007 4:46:26 AM

Lab ID: 0708284-11 **Collection Date:** 8/21/2007 11:15:00 AM
Client Sample ID: B8_8_21_I_3' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	8600	200		mg/Kg	20	8/22/2007 5:21:23 AM
Motor Oil Range Organics (MRO)	ND	1000		mg/Kg	20	8/22/2007 5:21:23 AM
Surr: DNOP	93.2	61.7-135		%REC	20	8/22/2007 5:21:23 AM

Lab ID: 0708284-12 **Collection Date:** 8/20/2007
Client Sample ID: BD082007 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	4800	200		mg/Kg	20	8/22/2007 5:56:09 AM
Motor Oil Range Organics (MRO)	ND	1000		mg/Kg	20	8/22/2007 5:56:09 AM
Surr: DNOP	65.4	61.7-135		%REC	20	8/22/2007 5:56:09 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *29-Aug-07*

CLIENT: Giant Refining Company
Project: Fan Out Area
Lab Order: 0708284

Lab ID: 0708284-13
Collection Date: 8/20/2007 7:30:00 PM
Client Sample ID: Equipment Blank
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/28/2007 5:38:10 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/28/2007 5:38:10 PM
Surr: DNOP	165	58-140	S	%REC	1	8/28/2007 5:38:10 PM

Lab ID: 0708284-14
Collection Date: 8/20/2007 2:45:00 PM
Client Sample ID: B8_NE_8_20_5'
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	2200	100		mg/Kg	10	8/22/2007 6:30:52 AM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	8/22/2007 6:30:52 AM
Surr: DNOP	83.0	61.7-135		%REC	10	8/22/2007 6:30:52 AM

Lab ID: 0708284-15
Collection Date: 8/21/2007 9:50:00 AM
Client Sample ID: Equipment Blank
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/28/2007 6:13:59 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/28/2007 6:13:59 PM
Surr: DNOP	173	58-140	S	%REC	1	8/28/2007 6:13:59 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Giant Refining Company
Project: Fan Out Area

Work Order: 0708284

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8015									
Sample ID: 0708284-09AMSD		*MSD*			Batch ID:	**13663**	Analysis Date:	8/21/2007 11:30:01 PM	
Diesel Range Organics (DRO)	433.1	mg/Kg	10	-6.42	67.4	117	3.06	17.4	S
Sample ID: MB-13663		*MBLK*			Batch ID:	**13663**	Analysis Date:	8/21/2007 7:19:54 PM	
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-13663		*LCS*			Batch ID:	**13663**	Analysis Date:	8/21/2007 7:55:43 PM	
Diesel Range Organics (DRO)	43.65	mg/Kg	10	87.3	64.6	116			
Sample ID: LCSD-13663		*LCSD*			Batch ID:	**13663**	Analysis Date:	8/21/2007 9:07:08 PM	
Diesel Range Organics (DRO)	46.76	mg/Kg	10	93.5	64.6	116	6.87	17.4	
Sample ID: 0708284-09AMS		*MS*			Batch ID:	**13663**	Analysis Date:	8/22/2007 7:05:36 AM	
Diesel Range Organics (DRO)	446.6	mg/Kg	10	20.5	67.4	117			S
Method: SW8015									
Sample ID: MB-13694		*MBLK*			Batch ID:	**13694**	Analysis Date:	8/28/2007 3:13:26 PM	
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-13694		*LCS*			Batch ID:	**13694**	Analysis Date:	8/28/2007 3:49:35 PM	
Diesel Range Organics (DRO)	6.735	mg/L	1.0	135	74	157			
Sample ID: LCSD-13694		*LCSD*			Batch ID:	**13694**	Analysis Date:	8/28/2007 4:25:47 PM	
Diesel Range Organics (DRO)	7.021	mg/L	1.0	140	74	157	4.15	23	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name GIANTREFIN

Date and Time Received: 8/21/2007

Work Order Number 0708284

Received by TLS

Checklist completed by 8/21/07
Signature Date

Matrix Carrier name Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☑	No ☐	N/A ☐	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	

Container/Temp Blank temperature? *4° C ± 2 Acceptable*
If given sufficient time to cool.

COMMENTS:

Client contacted Date contacted: Person contacted

Contacted by: Regarding

Comments:

Corrective Action

CHAIN-OF-CUSTODY RECORD

QA / QC Package: Std ☑ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: ~~Western~~ Giant Refining ~~Ginza Refinery~~ AT
Address: Route 3 Box 7
Gallup, NM 87301
Phone #: 505 722 3833
Fax #: 505 722 0210

Project Name: Fan Out Area
Project #:
Project Manager: Steve Morris
Sampler: G. Price / R. Allen
Sample Temperature: 13°

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative None	HEAL No. 0708284	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
8/20/07	1450	Soil	B8_8_20_A_7'	1/4oz			X	-1			X														
8/20	1115		B8_8_20_B_7'					-2																	
8/20	~~1215~~ 1335		B8_8_20_C_3'					-3																	
8/20	1350		B8_8_20_C_5'					-4																	
8/20	1215		B8_8_20_D_3'					-5																	
8/20	1230		B8_8_20_D_5'					-6																	
8/20	1600		B8_8_20_E_3'					-7																	
8/20	1700		B8_8_20_F_3'					-8																	
8/20	1710		B8_8_20_G_3'					-9																	
8/21	1140		B8_8_21_H_3'					-10																	
8/21	1115		B8_8_21_I_3'					-11																	
8/20			B0082007					-12																	

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
8/21	1300	[signature]	[signature]
8/21/07	1537	[signature]	[signature] 8/21/07 1537

Remarks: 24 hour rush except BD

CHAIN-OF-CUSTODY RECORD

QA / QC Package: Std ☑ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: ~~Western~~ Giant Refining ~~Ciniza Refinery~~ Inc
Address: Route 3 Box 7
Gallup, NM 87301
Phone #: 505 722 3833
Fax #: 505 722 0210

Project Name: Far Out Area
Project #:
Project Manager: Steve Morris
Sampler: G. Price / R. Allen
Sample Temperature: 13°

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HNO_3	Preservative: HCL	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
8/20/07	1740	Soil	MS_G3	1/4oz	NONE			-9			X														
8/20/07	1740	Soil	MSD_G3	1/4oz	NONE			-9			X														
8/20/07	1930	Water	Equipment Blank	3/VOA			✓	-13			X														
8/20/07	1445	Soil	B8-NE_8.20.5'	1/4oz	NONE			-14			X														
8/21/07	9:50	Water	Equipment Blank	3/VOA			✓	-15			X														

Date	Time	Relinquished By: (Signature)	Received By: (Signature)
8/21	1300	[signature]	[signature]
8/21/07	1535	[signature]	[signature] 8/21/07 1535

Remarks: 24 hour rush except EBs/MS/MSDs

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Tuesday, September 04, 2007

Steve Morris
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-3833
FAX (505) 722-0210

RE: Fan Out Area

Order No.: 0708324

Dear Steve Morris:

Hall Environmental Analysis Laboratory, Inc. received 14 sample(s) on 8/24/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001

ACCREDITED IN ACCORDANCE WITH nelac

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc.

Date: *04-Sep-07*

CLIENT: Giant Refining Co
Project: Fan Out Area

Lab Order: 0708324

Lab ID: 0708324-01 **Collection Date:** 8/21/2007 9:30:00 AM
Client Sample ID: B8_8_21_J_5 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/30/2007 3:53:21 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/30/2007 3:53:21 AM
Surr: DNOP	93.0	61.7-135		%REC	1	8/30/2007 3:53:21 AM

Lab ID: 0708324-02 **Collection Date:** 8/21/2007 11:45:00 AM
Client Sample ID: B8_8_21_H_5 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/30/2007 5:03:19 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/30/2007 5:03:19 AM
Surr: DNOP	93.0	61.7-135		%REC	1	8/30/2007 5:03:19 AM

Lab ID: 0708324-03 **Collection Date:** 8/21/2007 12:12:00 PM
Client Sample ID: B8_8_21_L_5 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	71	10		mg/Kg	1	8/30/2007 5:38:22 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/30/2007 5:38:22 AM
Surr: DNOP	90.0	61.7-135		%REC	1	8/30/2007 5:38:22 AM

Lab ID: 0708324-04 **Collection Date:** 8/21/2007 11:25:00 AM
Client Sample ID: B8_8_21_I_5 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/30/2007 6:13:13 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/30/2007 6:13:13 AM
Surr: DNOP	89.5	61.7-135		%REC	1	8/30/2007 6:13:13 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *04-Sep-07*

CLIENT: Giant Refining Co
Project: Fan Out Area

Lab Order: 0708324

Lab ID: 0708324-05 **Collection Date:** 8/21/2007 9:20:00 AM
Client Sample ID: B8_8_21_J_3 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	250	10		mg/Kg	1	8/30/2007 6:48:10 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/30/2007 6:48:10 AM
Surr: DNOP	108	61.7-135		%REC	1	8/30/2007 6:48:10 AM

Lab ID: 0708324-06 **Collection Date:** 8/20/2007 3:20:00 PM
Client Sample ID: B8_8_20_A_9 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	19000	200		mg/Kg	20	8/30/2007 4:49:05 PM
Motor Oil Range Organics (MRO)	ND	1000		mg/Kg	20	8/30/2007 4:49:05 PM
Surr: DNOP	92.4	61.7-135		%REC	20	8/30/2007 4:49:05 PM

Lab ID: 0708324-07 **Collection Date:** 8/21/2007 12:05:00 PM
Client Sample ID: B8_8_21_L_3 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	42	10		mg/Kg	1	8/30/2007 7:57:49 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/30/2007 7:57:49 AM
Surr: DNOP	122	61.7-135		%REC	1	8/30/2007 7:57:49 AM

Lab ID: 0708324-08 **Collection Date:** 8/20/2007 4:15:00 PM
Client Sample ID: B8_8_20_E_5 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/30/2007 8:32:52 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/30/2007 8:32:52 AM
Surr: DNOP	76.1	61.7-135		%REC	1	8/30/2007 8:32:52 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *04-Sep-07*

CLIENT: Giant Refining Co
Project: Fan Out Area

Lab Order: 0708324

Lab ID: 0708324-09 **Collection Date:** 8/20/2007 5:25:00 PM
Client Sample ID: B8_8_20_F_5 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/30/2007 9:07:58 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/30/2007 9:07:58 AM
Surr: DNOP	89.8	61.7-135		%REC	1	8/30/2007 9:07:58 AM

Lab ID: 0708324-10 **Collection Date:** 8/20/2007 6:40:00 PM
Client Sample ID: B8_8_20_M_5 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/30/2007 9:42:59 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/30/2007 9:42:59 AM
Surr: DNOP	98.0	61.7-135		%REC	1	8/30/2007 9:42:59 AM

Lab ID: 0708324-11 **Collection Date:** 8/20/2007 7:00:00 PM
Client Sample ID: B8_8_20_K_3 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	4700	100		mg/Kg	10	8/30/2007 10:17:56 AM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	8/30/2007 10:17:56 AM
Surr: DNOP	98.5	61.7-135		%REC	10	8/30/2007 10:17:56 AM

Lab ID: 0708324-12 **Collection Date:** 8/20/2007 11:50:00 AM
Client Sample ID: B8_8_20_B_9 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/30/2007 11:28:12 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/30/2007 11:28:12 AM
Surr: DNOP	81.7	61.7-135		%REC	1	8/30/2007 11:28:12 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *04-Sep-07*

CLIENT: Giant Refining Co
Project: Fan Out Area

Lab Order: 0708324

Lab ID: 0708324-13 **Collection Date:** 8/20/2007 6:20:00 PM
Client Sample ID: B8_8_20_M_3 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	4000	100		mg/Kg	10	8/30/2007 12:03:48 PM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	8/30/2007 12:03:48 PM
Surr: DNOP	81.1	61.7-135		%REC	10	8/30/2007 12:03:48 PM

Lab ID: 0708324-14 **Collection Date:** 8/20/2007 7:20:00 PM
Client Sample ID: B8_8_20_K_5 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/30/2007 12:39:03 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/30/2007 12:39:03 PM
Surr: DNOP	85.7	61.7-135		%REC	1	8/30/2007 12:39:03 PM

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area

Work Order: 0708324

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8015									
Sample ID: 0708324-13AMSD		*MSD*			Batch ID:	**13705**	Analysis Date:	8/31/2007 6:53:24 PM	
Diesel Range Organics (DRO)	2413	mg/Kg	100	-3230	67.4	117	78.6	17.4	SR
Sample ID: MB-13705		*MBLK*			Batch ID:	**13705**	Analysis Date:	8/28/2007 1:25:04 PM	
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: MB-13704		*MBLK*			Batch ID:	**13704**	Analysis Date:	8/28/2007 8:01:13 PM	
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-13705		*LCS*			Batch ID:	**13705**	Analysis Date:	8/28/2007 2:00:57 PM	
Diesel Range Organics (DRO)	43.37	mg/Kg	10	86.7	64.6	116			
Sample ID: LCS-13704		*LCS*			Batch ID:	**13704**	Analysis Date:	8/28/2007 8:36:31 PM	
Diesel Range Organics (DRO)	42.15	mg/Kg	10	84.3	64.6	116			
Sample ID: LCSD-13705		*LCSD*			Batch ID:	**13705**	Analysis Date:	8/28/2007 2:37:14 PM	
Diesel Range Organics (DRO)	48.14	mg/Kg	10	96.3	64.6	116	10.4	17.4	
Sample ID: LCSD-13704		*LCSD*			Batch ID:	**13704**	Analysis Date:	8/28/2007 9:11:45 PM	
Diesel Range Organics (DRO)	43.95	mg/Kg	10	87.9	64.6	116	4.18	17.4	
Sample ID: 0708324-13AMS		*MS*			Batch ID:	**13705**	Analysis Date:	8/31/2007 6:17:50 PM	
Diesel Range Organics (DRO)	5535	mg/Kg	100	3020	67.4	117			S

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name GIANTREFIN

Date and Time Received: 8/24/2007

Work Order Number 0708324

Received by AT

Checklist completed by Signature Date 8/24/07

Matrix Carrier name Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☑	No ☐	N/A ☐	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace? No VOA vials submitted	☑	Yes ☐	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	

Container/Temp Blank temperature? 18° *4° C ± 2 Acceptable* If given sufficient time to cool.

COMMENTS:

Client contacted Date contacted: Person contacted

Contacted by: Regarding

Comments: Per SM BB-8-26-H-5 is correct Sample ID AT 8/24/07

per Regina Allen Requested Sample ID Changed to BB_8-21-H-5 AT 8/27/07

Corrective Action

1 of 2

CHAIN-OF-CUSTODY RECORD

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

QA / QC Package: Std ☒ Level 4 ☐ Other:

Client: Giant Refining Ariza Refinery
Address: Route 3 Box 7 Gallup, NM 87301
Phone #: 505-722-3833
Fax #: 505-722-0210

Project Name: Fan Out Area
Project #:
Project Manager: Steve Morris
Sampler: R. Allen / G. Price
Sample Temperature: 18°

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	HNO_3	None	HEAL No. 0708324	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
8/21/07	930	Soil	B8-8-21-J-5	1/4oz			X	-1			X														
8/21/07	1145	Soil	B8-8-21-H-5	1/4oz			X	-2			X														
8/21/07	1212	Soil	B8-8-21-L-5	1/4oz			X	-3			X														
8/21/07	1125	Soil	B8-8-21-I-5	1/4oz			X	-4			X														
8/21/07	920	Soil	B8-8-21-J-3	1/4oz			X	-5			X														
8/20/07	1520	Soil	B8-8-20-A-9	1/4oz			X	-6			X														
8/21/07	1205	Soil	B8-8-21-L-3	1/4oz			X	-7			X														
8/20/07	1615	Soil	B8-8-20-E-5	1/4oz			X	-8			X														
8/20/07	1725	Soil	B8-8-20-F-5	1/4oz			X	-9			X														
8/20/07	1840	Soil	B8-8-20-M-5	1/4oz			X	-10			X														
8/20/07	1900	Soil	B8-8-20-K-3	1/4oz			X	-11			X														
8/20/07	1150	Soil	B8-8-20-B-9	1/4oz			X	-12			X														

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
8/21/07	1300	Regina Allen	8/23/07
8/21/07	1537		1213

Remarks: Std turnaround time *

CHAIN-OF-CUSTODY RECORD

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

2 of 2

Client: Giant Refining Ciniza Refinery
Address: Route 3 Box 7 Gallup, NM 87301
Phone #: 505-722-3833
Fax #: 505-722-0210

QA / QC Package: Std ☒ Level 4 ☐ Other:
Project Name: Fan out Area
Project #:
Project Manager: Steve Morris
Sampler: R. Allen / G. Price
Sample Temperature: 18°C

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	HNO_3	None	HEAL No. 0708324	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH (Method 8015B (Gas/Diesel))	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
8/20/07	1820	Soil	BS-8-20-M-3	1/4oz			X	-13			X														
8/20/07	1920	Soil	BS-8-20-K-5	1/4oz			X	-14			X														

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	
8/21	1800	Regina Allen	[signature]	8/23/07
8/21/07	1537			1213

Remarks: Standard turnaround time

Tier 2 Data Validation Report

Client: Giant Refining	Laboratory: Hall Environmental
Project Name: Ciniza Additional Soil Sampling and Excavation	Sample Matrix: Soil
Project Number: 072-013-001	Sample Start Date: See Samples Analyzed
Date Validated: November 10, 2007	Sample End Date: See Samples Analyzed

Samples Analyzed:
Data Set 0708324: B8_8_21_J_5, B8_8_21_H_5, B8_8_21_L_5, B8_8_21_I_5, B8_8_21_J_3, B8_8_20_A_9, B8_8_21_L_3, B8_8_20_E_5, B8_8_20_F_5, B8_8_20_M_5, B8_8_20_K_3, B8_8_20_B_9, B8_8_20_M_3, and B8_8_20_K_5 (Collected on August 20 and 21, 2007)
Data Set 0708284: B8_8_20_A_7, B8_8_20_B_7, B8_8_20_C_3, B8_8_20_C_5, B8_8_20_D_3, B8_8_20_D_5, B8_8_20_E_3, B8_8_20_F_3, B8_8_20_G_3, B8_8_21_H_3, B8_8_21_I_3, BD082007, Equipment Blank, B8_NE_8_20_5, Equipment Blank (Collected on August 20 and 21, 2007)

Parameters: Diesel Range Organics

Laboratory Project ID: 0708324 and 0708284

Data Validator: Nella Kashani, Environmental Chemist

Precision, Accuracy, Method Compliance, Completeness Assessment

Precision Acceptable

Comments: Precision is the measure of variability of sample measurements. Field precision is determined by a comparison of field duplicate sample results. Laboratory precision is determined by examining the laboratory duplicate results. Evaluation of both the field and laboratory duplicates for precision was accomplished using the relative percent difference (RPD). The RPD is defined as the difference between the primary and duplicate samples divided by the mean and expressed as a percentage. One field duplicate was collected in data set 0708284. Sample BD082007 was collected as a duplicate of sample B8_8_20_E_3. The RPD value was reported to be above the acceptable limit. All associated results will be qualified 'J' since a high RPD value may indicate poor repeatability. In addition, the MS/MSD RPD value in data set 0708324 was reported to be above the acceptable RPD limit. As a result, all data will be qualified 'J/UJ' due to possible poor repeatability.

Accuracy Acceptable

Comments: Accuracy is a measure of sampling and analysis bias. Field accuracy is determined by collecting field, trip and equipment blanks to monitor for possible ambient or cross contamination during sampling. A total of two equipment blanks were reported in data set 0708284. There were no detections reported in the equipment blanks.

Laboratory accuracy is measured by evaluating laboratory control sample (LCS) and MS/MSD recoveries. LCS and MS/MSD recoveries were compared to published or laboratory control limits. All LCS recoveries were acceptable. However, several MS/MSD recoveries were reported to be outside of the control limits. All data were qualified as a result of out of range MS/MSD's.

Method Compliance Acceptable

Comments: Method compliance was determined by reviewing the holding times, detection limits, surrogate recoveries, method blanks, and laboratory control samples against method specific requirements. The sample temperatures were reported to be above the acceptable limit of 6 degrees Celsius in both data sets. This occurrence does not seem to negatively affect the quality of the data since the samples were delivered shortly after they were sampled and since they were analyzed within hold time. In addition, some surrogate recoveries were reported to be outside of the control limits. No results were qualified as a result of out range surrogate recoveries since they were associated with equipment blanks only. All other criteria for method compliance were acceptable.

Completeness Acceptable

Comments: Completeness is the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody and laboratory analytical methods. Completeness also includes a review of the analytical reports and QC summary report. No data were rejected; therefore, this data set is 100% complete.

Validation Criteria Checklist	
Data validation flags used in this review: J-estimated value and UJ-estimated value; non-detect	
1. Did the laboratory identify any non-conformances related to the analytical data?	Yes
Comments: In data set 0708324, the laboratory noted that sample B8_8_26_H_5 was labeled incorrectly and per the project manager's request the ID was changed to B8_8_21_H_5.	
2. Were sample chain-of-custody forms complete?	No
Comments: All chain-of-custody forms were complete from the field to the laboratory, with one exception. In data set 0708324, the laboratory noted that sample B8_8_26_H_5 was labeled incorrectly and per the project manager's request the ID was changed to B8_8_21_H_5.	
3. Were detection limits in accordance with the QAPP, permit, or method?	Yes
Comments: Detection limits were acceptable. Some dilutions were required; however, they were necessary due to high concentrations of target analytes.	
4. Were the requested analytical methods in compliance with the QAPP, permit, or COC?	Yes
Comments: All reported analytical methods were in compliance with those requested on the chain-of-custody form.	
5. Were samples received in good condition?	No
Comments: Sample temperatures were reported to be high in both data sets (0708324: 18 degrees Celsius and 0708284: 13 degrees Celsius). This occurrence does not seem to negatively affect the quality of the data since the samples were delivered shortly after they were sampled and were not yet cooled, and since they were analyzed within hold time.	
6. Were sample holding times met?	Yes
Comments: All samples were extracted and analyzed within the acceptable hold time.	
7. Were correct concentration units reported?	Yes
Comments: Results were reported in units of mg/kg, which is acceptable based on the soil matrix.	
8. Do the laboratory reports include all constituents requested to be reported for a specific analytical method?	Yes
Comments: Reported constituents were in accordance with those requested on the chain-of-custody form.	
9. Were the reporting requirements for flagged data met?	Yes
Comments: No data were qualified by the laboratory; however, the laboratory did qualify quality control data due to out of range recovery results.	
10. Is there indication that the continuous calibration verification was within acceptable limits?	Yes
Comments: Calibration data were not included as part of this data review; however, all data seem to be acceptable based on other QC data.	
11. Were the instrument calibrations within method control limits?	Yes
Comments: Calibration data were not included as part of this data review; however, all data seem to be acceptable based on other QC data.	
12. Were method blank samples analyzed on a 5% basis?	Yes
Comments: Method blanks were reported on a greater than 5% basis.	
13. Were method blank detections reported for this data set?	No
Comments: There were no detections reported in the method blanks.	
14. Were matrix spike samples prepared on a 5% basis?	Yes
Comments: In data set 0708324, the MS/MSD pair was prepared from sample B8_8_20_M_3 of this data set. In data set 0708284, the MS/MSD pair was prepared from sample B8_8_20_G_3 of this data set.	

Validation Criteria Checklist	
15. Were matrix spike recoveries within acceptable limits?	No
Comments: In data set 0708324, the MS/MSD recoveries for DRO (3020% and -3230%; acceptable range 67.4-117%) were reported to be outside of the control limits. In addition, the RPD value (78.6%; acceptable range 0-17.4%) was reported to be above the acceptable RPD limit. As a result, all data will be qualified 'J/UJ' due possible biased results and possible poor repeatability. In data set 0708284, the MS/MSD recoveries for DRO (-6.42% and 20.5%; acceptable range 67.4-117%) were reported to be outside of the control limits. As a result, all results will be qualified 'J/UJ' due to a possible low bias.	
16. Were laboratory control samples analyzed on a 5% basis?	Yes
Comments: Laboratory control samples were analyzed on a 5% basis.	
17. Were laboratory control recoveries within acceptable limits?	Yes
Comments: All laboratory control recoveries were acceptable.	
18. Were surrogate recoveries within control limits?	No
Comments: In data set 0708284, the surrogate recoveries for both equipment blanks (165% and 173%; acceptable range 58-140%) were reported to be outside of the control limits. No qualification is necessary since there were no detections reported in either equipment blank.	
19. Were equipment blanks and field blanks collected on a 10% basis?	Yes
Comments: A total of two equipment blanks were collected in data set 0708284.	
20. Were detections found in trip blanks, equipment blanks, or field blanks?	No
Comments: There were no detections reported in the equipment blanks.	
21. Were field duplicates collected on a 10% basis?	Yes
Comments: Sample BD082007 was collected as a duplicate of sample B8_8_20_E_3.	
22. Were field duplicate RPD values less than 30%?	No
Comments: The RPD value was reported to be above the acceptable limit. All associated results will be qualified 'J' since a high RPD value may indicate poor repeatability.	
23. General Comments: Data were presented in a clear and complete manner. No data were rejected; therefore, this data set is 100% complete.	

TABLE 1. DATA QUALIFICATION, CINIZA ADDITIONAL SOIL SAMPLING AND EXCAVATION GIANT REFINING, CINIZA, NEW MEXICO

Analyte	Sample ID	Laboratory Assigned ID	Laboratory Result (mg/kg)	Flag	Reason
DRO	All Samples	All Samples (0708284)	Detect/Non-Detect	J (Detect)/UJ (Non-Detect)	Out of Range MS/MSD Results
DRO	All Samples	All Samples (0708324)	Detect/Non-Detect	J (Detect)/UJ (Non-Detect)	Out of Range MS/MSD Results
DRO	B8_8_20_E_3	0708284-07	2200	J	High RPD Value
DRO	BD082007	0708284-12	4800	J	High RPD Value

J – Indicates estimated detection.
UJ – Indicates estimated detection below the reporting limit.

TABLE 2. FIELD DUPLICATE SUMMARY, CINIZA ADDITIONAL SOIL SAMPLING AND EXCAVATION GIANT REFINING, CINIZA, NEW MEXICO

Sample ID: B8_8_20_E_3/Field Duplicate ID: BD082007			
Analyte	**Laboratory Result (mg/kg)**	**Duplicate Result (mg/kg)**	**Relative Percent Difference (RPD)**
Diesel Range Organics	2200	4800	**74.3%**

Field duplicate RPD control limits should not exceed 30% as established by USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, February 1988.

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Thursday, December 20, 2007

Steve Morris
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-3833
FAX (505) 722-0210

RE: Fan Out Area December 07

Order No.: 0712257

Dear Steve Morris:

Hall Environmental Analysis Laboratory, Inc. received 18 sample(s) on 12/18/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc.

Date: *20-Dec-07*

CLIENT: Giant Refining Co
Project: Fan Out Area December 07
Lab Order: 0712257

Lab ID: 0712257-01 **Collection Date:** 12/17/2007 11:30:00 AM
Client Sample ID: B8_12_17_B_8 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/20/2007 4:05:04 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/20/2007 4:05:04 AM
Surr: DNOP	85.3	61.7-135		%REC	1	12/20/2007 4:05:04 AM

Lab ID: 0712257-02 **Collection Date:** 12/17/2007 11:45:00 AM
Client Sample ID: B8_12_17_B_13 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/20/2007 4:40:04 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/20/2007 4:40:04 AM
Surr: DNOP	74.4	61.7-135		%REC	1	12/20/2007 4:40:04 AM

Lab ID: 0712257-03 **Collection Date:** 12/17/2007 11:55:00 AM
Client Sample ID: B8_12_17_B_18 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/20/2007 5:15:04 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/20/2007 5:15:04 AM
Surr: DNOP	76.7	61.7-135		%REC	1	12/20/2007 5:15:04 AM

Lab ID: 0712257-04 **Collection Date:** 12/17/2007 12:05:00 PM
Client Sample ID: B8_12_17_B_23 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/20/2007 5:50:07 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/20/2007 5:50:07 AM
Surr: DNOP	82.9	61.7-135		%REC	1	12/20/2007 5:50:07 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *20-Dec-07*

CLIENT: Giant Refining Co
Project: Fan Out Area December 07
Lab Order: 0712257

Lab ID: 0712257-05 **Collection Date:** 12/17/2007 12:50:00 PM
Client Sample ID: B8_12_17_M1_3 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/20/2007 6:25:08 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/20/2007 6:25:08 AM
Surr: DNOP	112	61.7-135		%REC	1	12/20/2007 6:25:08 AM

Lab ID: 0712257-06 **Collection Date:** 12/17/2007 1:00:00 PM
Client Sample ID: B8_12_17_M1_8 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/20/2007 6:59:47 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/20/2007 6:59:47 AM
Surr: DNOP	66.5	61.7-135		%REC	1	12/20/2007 6:59:47 AM

Lab ID: 0712257-07 **Collection Date:** 12/17/2007 1:10:00 PM
Client Sample ID: B8_12_17_M1_13 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/20/2007 7:34:46 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/20/2007 7:34:46 AM
Surr: DNOP	86.9	61.7-135		%REC	1	12/20/2007 7:34:46 AM

Lab ID: 0712257-08 **Collection Date:** 12/17/2007 1:55:00 PM
Client Sample ID: B8_12_17_I1_3 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/19/2007 4:26:45 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/19/2007 4:26:45 PM
Surr: DNOP	107	61.7-135		%REC	1	12/19/2007 4:26:45 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *20-Dec-07*

CLIENT: Giant Refining Co
Project: Fan Out Area December 07
Lab Order: 0712257

Lab ID: 0712257-09 **Collection Date:** 12/17/2007 2:05:00 PM
Client Sample ID: B8_12_17_I1_8 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/19/2007 4:56:53 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/19/2007 4:56:53 PM
Surr: DNOP	102	61.7-135		%REC	1	12/19/2007 4:56:53 PM

Lab ID: 0712257-10 **Collection Date:** 12/17/2007 2:15:00 PM
Client Sample ID: B8_12_17_I1_13 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/19/2007 5:27:16 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/19/2007 5:27:16 PM
Surr: DNOP	95.9	61.7-135		%REC	1	12/19/2007 5:27:16 PM

Lab ID: 0712257-11 **Collection Date:** 12/17/2007
Client Sample ID: BD_12_17_07 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/19/2007 5:57:40 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/19/2007 5:57:40 PM
Surr: DNOP	75.1	61.7-135		%REC	1	12/19/2007 5:57:40 PM

Lab ID: 0712257-12 **Collection Date:** 12/17/2007 3:05:00 PM
Client Sample ID: B8_12_17_G1_3 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/20/2007 2:20:52 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/20/2007 2:20:52 AM
Surr: DNOP	70.2	61.7-135		%REC	1	12/20/2007 2:20:52 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *20-Dec-07*

CLIENT: Giant Refining Co
Project: Fan Out Area December 07
Lab Order: 0712257

Lab ID: 0712257-15 **Collection Date:** 12/17/2007 2:25:00 PM
Client Sample ID: EB_12_17_07 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	12/20/2007 1:34:23 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	12/20/2007 1:34:23 PM
Surr: DNOP	95.8	58-140		%REC	1	12/20/2007 1:34:23 PM

Lab ID: 0712257-16 **Collection Date:** 12/17/2007 3:20:00 PM
Client Sample ID: B8_12_17_G1_8 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/19/2007 6:28:04 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/19/2007 6:28:04 PM
Surr: DNOP	90.6	61.7-135		%REC	1	12/19/2007 6:28:04 PM

Lab ID: 0712257-17 **Collection Date:** 12/17/2007 3:35:00 PM
Client Sample ID: B8_12_17_G1_13 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/20/2007 9:04:49 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/20/2007 9:04:49 AM
Surr: DNOP	86.0	61.7-135		%REC	1	12/20/2007 9:04:49 AM

Lab ID: 0712257-18 **Collection Date:** 12/17/2007 3:50:00 PM
Client Sample ID: B8_12_17_K1_3 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/19/2007 7:28:50 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/19/2007 7:28:50 PM
Surr: DNOP	83.1	61.7-135		%REC	1	12/19/2007 7:28:50 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *20-Dec-07*

CLIENT: Giant Refining Co
Project: Fan Out Area December 07
Lab Order: 0712257

Lab ID: 0712257-19
Collection Date: 12/17/2007 4:00:00 PM
Client Sample ID: B8_12_17_K1_8
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/20/2007 8:34:18 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/20/2007 8:34:18 AM
Surr: DNOP	73.7	61.7-135		%REC	1	12/20/2007 8:34:18 AM

Lab ID: 0712257-20
Collection Date: 12/17/2007 4:15:00 PM
Client Sample ID: B8_12_17_K1_13
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/19/2007 9:59:00 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/19/2007 9:59:00 PM
Surr: DNOP	81.3	61.7-135		%REC	1	12/19/2007 9:59:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area December 07 **Work Order:** 0712257

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics									
Sample ID: 0712257-12AMSD		*MSD*			Batch ID:	**14687**	Analysis Date:	12/20/2007 3:30:02 AM	
Diesel Range Organics (DRO)	41.00	mg/Kg	10	82.0	67.4	117	4.08	17.4	
Sample ID: 0712257-19AMSD		*MSD*			Batch ID:	**14696**	Analysis Date:	12/19/2007 8:58:34 PM	
Diesel Range Organics (DRO)	36.18	mg/Kg	10	72.4	67.4	117	25.6	17.4	R
Motor Oil Range Organics (MRO)	ND	mg/Kg	50				0	0	
Sample ID: MB-14687		*MBLK*			Batch ID:	**14687**	Analysis Date:	12/19/2007 11:13:35 AM	
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: MB-14696		*MBLK*			Batch ID:	**14696**	Analysis Date:	12/19/2007 3:24:36 PM	
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-14687		*LCS*			Batch ID:	**14687**	Analysis Date:	12/19/2007 11:48:30 AM	
Diesel Range Organics (DRO)	38.94	mg/Kg	10	77.9	64.6	116			
Sample ID: LCS-14696		*LCS*			Batch ID:	**14696**	Analysis Date:	12/19/2007 3:59:02 PM	
Diesel Range Organics (DRO)	33.23	mg/Kg	10	66.5	64.6	116			
Sample ID: LCSD-14687		*LCSD*			Batch ID:	**14687**	Analysis Date:	12/19/2007 12:23:29 PM	
Diesel Range Organics (DRO)	36.85	mg/Kg	10	73.7	64.6	116	5.52	17.4	
Sample ID: LCSD-14696		*LCSD*			Batch ID:	**14696**	Analysis Date:	12/19/2007 4:33:25 PM	
Diesel Range Organics (DRO)	37.81	mg/Kg	10	75.6	64.6	116	12.9	17.4	
Sample ID: 0712257-12AMS		*MS*			Batch ID:	**14687**	Analysis Date:	12/20/2007 2:55:20 AM	
Diesel Range Organics (DRO)	39.36	mg/Kg	10	78.7	67.4	117			
Sample ID: 0712257-19AMS		*MS*			Batch ID:	**14696**	Analysis Date:	12/19/2007 8:29:01 PM	
Diesel Range Organics (DRO)	46.78	mg/Kg	10	93.6	67.4	117			
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Method: EPA Method 8015B: Diesel Range									
Sample ID: MB-14706		*MBLK*			Batch ID:	**14706**	Analysis Date:	12/20/2007 11:39:30 AM	
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-14706		*LCS*			Batch ID:	**14706**	Analysis Date:	12/20/2007 12:08:31 PM	
Diesel Range Organics (DRO)	4.622	mg/L	1.0	92.4	74	157			
Sample ID: LCSD-14706		*LCSD*			Batch ID:	**14706**	Analysis Date:	12/20/2007 12:34:04 PM	
Diesel Range Organics (DRO)	5.296	mg/L	1.0	106	74	157	13.6	23	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name GIANTREFIN

Date Received: 12/18/2007

Work Order Number 0712257

Received by: TLS

Sample ID labels checked by AT
Initials

Checklist completed by: Samuel Shomin 12/18/07
Signature Date

Matrix

Carrier name FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☑	No ☐	N/A ☐	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☐	No ☑		
Water - VOA vials have zero headspace?	No VOA vials submitted ☑	Yes ☐	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	

Container/Temp Blank temperature? 3° *<6° C Acceptable*
If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

CHAIN-OF-CUSTODY RECORD

QA/QC Package: Std ☒ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: Giant Refining Company Gallup Refinery
Address: Route 3 Box 7 Gallup, NM 87301
Phone #: 505-722-3833
Fax #: 505-722-0210

Project Name: Fanout Area December 07
Project #:
Project Manager: Steve Morris (Giant) Grant Price (Trihydro) (307-399-0890)
Sampler: Grant Price
Sample Temperature: 3°

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HNO_3	Preservative: None	HEAL No. 0712257	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel) DRO	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
12/17/07	1130	Soil	B8-12-17-B-8	1/4oz			X	1			X														
12/17/07	1145	Soil	B8-12-17-B-13	1/4oz			X	2			X														
12/17/07	1155	Soil	B8-12-17-B-18	1/4oz			X	3			X														
12/17/07	1205	Soil	B8-12-17-B-23	1/4oz			X	4			X														
12/17/07	1250	Soil	B8-12-17-ML-3	1/4oz			X	5			X														
12/17/07	1300	Soil	B8-12-17-ML-8	1/4oz			X	6			X														
12/17/07	1310	Soil	B8-12-17-ML-13	1/4oz			X	7			X														
12/17/07	1355	Soil	B8-12-17-IL-3	1/4oz			X	8			X														
12/17/07	1405	Soil	B8-12-17-IL-8	1/4oz			X	9			X														
12/17/07	1415	Soil	B8-12-17-IL-13	1/4oz			X	10			X														
12/17/07	—	Soil	BD-12-17-07	1/4oz			X	11			X														
12/17/07	1505	Soil	B8-12-17-GL-3 MS	1/4oz			X	12			X														

Date	Time	Relinquished By: (Signature)	Received By: (Signature)
12/17/07	1620	[signature]	Fed Ex
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature) 12/18/07 Jamie Thomas 1430

Remarks: 24 hr turnaround on all soil samples.

CHAIN-OF-CUSTODY RECORD

QA / QC Package: Std ☒ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: Giant Refining Company Gallup Refinery
Address: Route 3 Box 7 Gallup, NM 87301
Phone #: 505-722-3833
Fax #: 505-722-0210

Project Name: Fan out Area December 07
Project #:
Project Manager: Steve Morris (Giant) Grant Price (Trihydro) (307-399-0890)
Sampler: Grant Price
Sample Temperature: 3°

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HNO_3	Preservative: NONE	HEAL No. 0712257	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel) DRO	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
12/17/07	1505	Soil	B8-12-17-G1-3	1/4oz			X	12			X														
12/17/07	1505	Soil	B8-12-17-G1-3 MSD	1/4oz			X	12			X														
12/17/07	1425	Water	EB-12-17-07	3/40mL			X	15			X														
12/17/07	1520	Soil	B8-12-17-G1-8	1/4oz			X	16			X														
12/17/07	1535	Soil	B8-12-17-G1-13	1/4oz			X	17			X														
12/17/07	1550	Soil	B8-12-17-K1-3	1/4oz			X	18			X														
12/17/07	1600	Soil	B8-12-17-K1-8	1/4oz			X	19			X														
12/17/07	1615	Soil	B8-12-17-K1-13	1/4oz			X	20			X														

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
12/17/07	1620	[signature]	Fed Ex
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature) 12/18/07 1430 [signature]

Remarks: 24 hr turnaround on all soil samples.

Tier II Data Validation Report Summary

Client: Western Refining Company, Gallup	Laboratory: Hall Environmental Analysis Laboratory, Inc.
Project Name: December 2007 Sampling Event	Sample Matrix: Soil
Project Number: 697-017-002	Sample Start Date: December 17, 2007
Date Validated: June 18, 2009	Sample End Date: December 17, 2007
Parameters Included: Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by Environmental Protection Agency (EPA) Method 8015B	
Laboratory Project IDs: 0712257	
Data Validator's Name: Jessica Swanson, Environmental Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services group on the analytical data report package generated by Hall Environmental Analysis Laboratory, Inc. evaluating samples from the Western Refining Company site located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values of samples from field duplicate pairs. Laboratory accuracy was established by reviewing the demonstrated percent recoveries of matrix spike (MS) and matrix spike duplicate (MSD) samples, and of laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) to verify that none of the data were biased. Additionally, field accuracy was established by collecting an equipment blank to monitor for possible ambient or cross contamination during sampling. Method compliance was established by reviewing holding times, detection limits, surrogate recoveries, method blanks, and the LCS and LCSD percent recoveries against method specific requirements. Completeness was evaluated by determining the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody, laboratory analytical methods, and any other necessary documents associated with this analytical data set.

Data were evaluated in general accordance with validation criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-08-01, June 2008 with additional reference to USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999. Review of duplicates is conducted in accordance with USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.

Tier II Data Validation Report Summary

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
B8_12_17_B_8	0712257-01
B8_12_17_B_13	0712257-02
B8_12_17_B_18	0712257-03
B8_12_17_B_23	0712257-04
B8_12_17_M1_3	0712257-05
B8_12_17_M1_8	0712257-06
B8_12_17_M1_13	0712257-07
B8_12_17_I1_3	0712257-08
B8_12_17_I1_8	0712257-09
B8_12_17_I1_13	0712257-10
BD_12_17_07	0712257-11
B8_12_17_G1_3	0712257-12
EB_12_17_07	0712257-15
B8_12_17_G1_8	0712257-16
B8_12_17_G1_13	0712257-17
B8_12_17_K1_3	0712257-18
B8_12_17_K1_8	0712257-19
B8_12_17_K1_13	0712257-20

Tier II Data Validation Report

The samples were analyzed for client-specified analytes. Chain-of-custody (COC) completeness is included in Section #3. The laboratory data were reviewed to evaluate compliance with the required methods and the quality of the reported data. A leading check mark (✓) indicates that the referenced data were deemed acceptable. A preceding crossed circle (⊗) signifies problems with the referenced data that may have warranted attaching qualifiers to the data.

- ✓ Data Completeness
- ✓ COC Documentation
- ✓ Holding Times and Preservation
- ✓ Laboratory Blanks
- ✓ System Monitoring Compounds (i.e. Surrogates)
- ✓ Laboratory Control Samples/Laboratory Control Sample Duplicates (LCS/LCSD)
- ⊗ Matrix Spike/Matrix Spike Duplicates (MS/MSD)
- ✓ Field Duplicates
- ✓ Equipment Blank

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Section #2.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data which are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R, the data may be used for site evaluation, with the reasons for qualification being given consideration when interpreting sample concentrations. Data points which are assigned an R qualifier should not be used for any site evaluation purposes. Data were qualified as a result of this validation for a high MS/MSD RPD value.

Data qualifiers used during this validation included:

UJ – Estimated reporting limit

Data Completeness

The analyses appeared to be performed as requested on the chain-of-custody records. The associated samples were received by the laboratory and appeared to be analyzed properly. No data points were rejected. The data completeness measure for this data package is 100%.

VALIDATION CRITERIA CHECKLIST	
1. Did the laboratory identify any non-conformances related to the analytical data?	No
Comments: The laboratory did not identify any non-conformances related to this data set.	
2. Were data qualification flags used by the laboratory? If yes, define.	Yes
Comments: The laboratory used the following data qualification flag with this data set. R – RPD outside accepted recovery limits.	
3. Were sample chain-of-custody forms complete?	Yes
Comments: The COC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.	
4. Were detection limits in accordance with the QAPP, permit, or method, or indicated as acceptable by the Tier I validator?	Yes
Comments: Detection limits were reviewed and appeared to be acceptable. Dilutions were not applied to the samples.	
5. Were the requested analytical methods in compliance with the QAPP, permit, or COC?	Yes
Comments: The requested analytical methods were in compliance with what was requested on the COC.	
6. Were samples received in good condition within method specified requirements?	Yes
Comments: Samples were received intact and in good condition. Cooler temperatures were within the 4°C +/- 2°C acceptable range at 3.0°C, as noted in the Sample Receipt Checklist. Custody seals were present and intact on both the sample bottles and the shipping container.	
7. Were samples analyzed within method specified or technical holding times?	Yes
Comments: Samples were analyzed within the acceptable hold time. The laboratory checked on the Sample Receipt Checklist that samples were not received within holding time. Holding times were evaluated and found to be acceptable. No further action was required.	
8. Were reported units appropriate for the associated sample matrix/matrices and method(s) of analyses?	Yes
Comments: Analyte concentrations were reported in units of mg/kg. The reported units are acceptable for the soil matrix. The equipment blanks were reported in mg/L which is acceptable for the water matrix.	
9. Do the laboratory reports include all constituents requested to be reported as indicated by the Tier I validator?	Yes
Comments: As indicated on the Tier I data validation, laboratory reported constituents were in accordance with those requested.	
10. Was there indication from the laboratory that the initial or continued calibration verification results were within acceptable limits?	N/A
Comments: Initial and continuing calibration data were not included as part of this data set; however, these data are assumed to be acceptable as the laboratory did not note that any calibration verification results were outside acceptable limits.	
11. Was the total number of method blank samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Method blanks were prepared on a greater than 5% basis.	
12. Were method blank detections reported for this data set?	No
Comments: Method blank detections were not reported for this data set.	

VALIDATION CRITERIA CHECKLIST	
13. Was the total number of matrix spike samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	No
Comments: Matrix spike samples were prepared on a greater than 5% basis with the exceptions of DRO batch 14706. The LCS/LCSD data was used to validate this batch. The MS/MSD sample pair for DRO batch 14687 was prepared from sample B8_12_17_G1_3 and the MS/MSD sample pair for DRO batch 14696 was prepared from sample B8_12_17_K1_8.	
14. Were matrix spike recoveries within laboratory-specified limits?	No
Comments: The MS and MSD recoveries for target analytes were within laboratory-specified limits with the following exception. **The MS/MSD RPD value for DRO in batch 14696 was above the acceptable limit of 17.4% at 25.6%. As a result of possible poor repeatability, the analytes DRO and MRO were qualified as UJ in the associated samples for non-detects.**	
15. Was the total number of laboratory control samples analyzed equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Laboratory control samples were reported on a greater than 5% basis.	
16. Were laboratory control recoveries within laboratory-specified limits?	Yes
Comments: Laboratory control recoveries were within laboratory-specified limits.	
17. Were surrogate recoveries within laboratory control limits?	Yes
Comments: Surrogate recoveries were within laboratory control limits.	
18. Was the number of equipment, trip, or field blanks collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	No
Comments: One equipment blank (EB_12_17_07) was submitted with this data set which is less than 10% the total number of samples.	
19. Were detections found in trip blanks, equipment blanks, or field blanks?	No
Comments: There were no detections in the equipment blank.	
20. Were the field duplicates collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	No
Comments: One field duplicate, BD_12_17_07 was collected as a duplicate of sample B8_12_17_I1_3, which is less than 10% the total number of samples.	
21. Were field duplicate RPD values less than the upper RPD limit (soil [50%], water [30%], or air/vapor [25%]), as specified by the laboratory or method?	N/A
Comments: Field duplicate RPD values could not be calculated since both the parent and duplicate samples were non-detected for target analytes.	
22. Were laboratory duplicate RPD values within laboratory-specified limits?	N/A
Comments: Laboratory duplicates were not prepared for this data set.	

DATA QUALIFICATION SUMMARY

Analyte	Client Sample ID	Laboratory Assigned ID	Laboratory Result (mg/kg)	Reviewer Qualifier	Reason for Qualification
DRO	B8_12_17_I1_3	0712257-08	ND (10)	UJ	The RPD for the MS/MSD or LCS/LCSD was greater than the acceptable difference indicating poor repeatability.
MRO	B8_12_17_I1_3	0712257-08	ND (50)	UJ	The RPD for the MS/MSD or LCS/LCSD was greater than the acceptable difference indicating poor repeatability.
DRO	B8_12_17_I1_8	0712257-09	ND (10)	UJ	The RPD for the MS/MSD or LCS/LCSD was greater than the acceptable difference indicating poor repeatability.
MRO	B8_12_17_I1_8	0712257-09	ND (50)	UJ	The RPD for the MS/MSD or LCS/LCSD was greater than the acceptable difference indicating poor repeatability.
DRO	B8_12_17_I1_13	0712257-10	ND (10)	UJ	The RPD for the MS/MSD or LCS/LCSD was greater than the acceptable difference indicating poor repeatability.
MRO	B8_12_17_I1_13	0712257-10	ND (50)	UJ	The RPD for the MS/MSD or LCS/LCSD was greater than the acceptable difference indicating poor repeatability.
DRO	BD_12_17_07	0712257-11	ND (10)	UJ	The RPD for the MS/MSD or LCS/LCSD was greater than the acceptable difference indicating poor repeatability.
MRO	BD_12_17_07	0712257-11	ND (50)	UJ	The RPD for the MS/MSD or LCS/LCSD was greater than the acceptable difference indicating poor repeatability.
DRO	B8_12_17_G1_8	0712257-16	ND (10)	UJ	The RPD for the MS/MSD or LCS/LCSD was greater than the acceptable difference indicating poor repeatability.
MRO	B8_12_17_G1_8	0712257-16	ND (50)	UJ	The RPD for the MS/MSD or LCS/LCSD was greater than the acceptable difference indicating poor repeatability.
DRO	B8_12_17_K1_3	0712257-18	ND (10)	UJ	The RPD for the MS/MSD or LCS/LCSD was greater than the acceptable difference indicating poor repeatability.
MRO	B8_12_17_K1_3	0712257-18	ND (50)	UJ	The RPD for the MS/MSD or LCS/LCSD was greater than the acceptable difference indicating poor repeatability.
DRO	B8_12_17_K1_13	0712257-20	ND (10)	UJ	The RPD for the MS/MSD or LCS/LCSD was greater than the acceptable difference indicating poor repeatability.
MRO	B8_12_17_K1_13	0712257-20	ND (50)	UJ	The RPD for the MS/MSD or LCS/LCSD was greater than the acceptable difference indicating poor repeatability.

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Friday, March 27, 2009

Gaurav Rajen
Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-0227
FAX (505) 722-0210

RE: Excavation Fan Out Area

Order No.: 0903342

Dear Gaurav Rajen:

Hall Environmental Analysis Laboratory, Inc. received 14 sample(s) on 3/20/2009 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

ACCREDITED IN ACCORDANCE WITH nelac

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc. **Date:** *27-Mar-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area
Lab Order: 0903342

CASE NARRATIVE

Analytical Comments for METHOD 8015DRO_S, SAMPLE 0903342-01A: DNOP not recovered due to dilution Analytical Comments for METHOD 8015DRO_S, SAMPLE 0903342-05A: DNOP not recovered due to dilution

Hall Environmental Analysis Laboratory, Inc.

Date: *27-Mar-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area

Lab Order: 0903342

Lab ID: 0903342-01 **Collection Date:** 3/17/2009 2:50:00 PM
Client Sample ID: CS-2 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	11000	200		mg/Kg	20	3/26/2009
Motor Oil Range Organics (MRO)	ND	1000		mg/Kg	20	3/26/2009
Surr: DNOP	0	61.7-135	S	%REC	20	3/26/2009

Lab ID: 0903342-02 **Collection Date:** 3/17/2009 4:10:00 PM
Client Sample ID: C-1 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	320	10		mg/Kg	1	3/26/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/26/2009
Surr: DNOP	90.7	61.7-135		%REC	1	3/26/2009

Lab ID: 0903342-04 **Collection Date:** 3/18/2009 1:55:00 PM
Client Sample ID: CS-3 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	320	10		mg/Kg	1	3/26/2009
Motor Oil Range Organics (MRO)	72	50		mg/Kg	1	3/26/2009
Surr: DNOP	93.3	61.7-135		%REC	1	3/26/2009

Lab ID: 0903342-05 **Collection Date:** 3/18/2009 2:05:00 PM
Client Sample ID: CS-4 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	6000	200		mg/Kg	20	3/26/2009
Motor Oil Range Organics (MRO)	ND	1000		mg/Kg	20	3/26/2009
Surr: DNOP	0	61.7-135	S	%REC	20	3/26/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

2

Hall Environmental Analysis Laboratory, Inc.

Date: *27-Mar-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area

Lab Order: 0903342

Lab ID: 0903342-06 **Collection Date:** 3/18/2009 5:05:00 PM
Client Sample ID: CS-6 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/26/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/26/2009
Surr: DNOP	70.2	61.7-135		%REC	1	3/26/2009

Lab ID: 0903342-07 **Collection Date:** 3/18/2009 5:07:00 PM
Client Sample ID: CS-9 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/26/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/26/2009
Surr: DNOP	88.6	61.7-135		%REC	1	3/26/2009

Lab ID: 0903342-08 **Collection Date:** 3/18/2009 1:08:00 PM
Client Sample ID: EB2-031809 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	3/24/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	3/24/2009
Surr: DNOP	111	58-140		%REC	1	3/24/2009

Lab ID: 0903342-09 **Collection Date:** 3/18/2009 4:20:00 PM
Client Sample ID: EB1-031809-3 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	3/24/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	3/24/2009
Surr: DNOP	112	58-140		%REC	1	3/24/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *27-Mar-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area

Lab Order: 0903342

Lab ID: 0903342-10 **Collection Date:** 3/18/2009 4:25:00 PM
Client Sample ID: EB2-031809-3 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	3/24/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	3/24/2009
Surr: DNOP	114	58-140		%REC	1	3/24/2009

Lab ID: 0903342-11 **Collection Date:** 3/18/2009 2:10:00 PM
Client Sample ID: EB1-031809-2 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	3/24/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	3/24/2009
Surr: DNOP	117	58-140		%REC	1	3/24/2009

Lab ID: 0903342-12 **Collection Date:** 3/17/2009 2:35:00 PM
Client Sample ID: EB2-031709 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	3/24/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	3/24/2009
Surr: DNOP	110	58-140		%REC	1	3/24/2009

Lab ID: 0903342-13 **Collection Date:** 3/18/2009 2:15:00 PM
Client Sample ID: EB2-031809-2 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	3/24/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	3/24/2009
Surr: DNOP	107	58-140		%REC	1	3/24/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *27-Mar-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area

Lab Order: 0903342

Lab ID: 0903342-14
Client Sample ID: EB1-031709

Collection Date: 3/17/2009 2:30:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	3/24/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	3/24/2009
Surr: DNOP	108	58-140		%REC	1	3/24/2009

Lab ID: 0903342-15
Client Sample ID: EB1-031809

Collection Date: 3/18/2009 1:03:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	3/24/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	3/24/2009
Surr: DNOP	107	58-140		%REC	1	3/24/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area **Work Order:** 0903342

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics									
Sample ID: MB-18623		*MBLK*			Batch ID:	**18623**	Analysis Date:		3/24/2009
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-18623		*LCS*			Batch ID:	**18623**	Analysis Date:		3/24/2009
Diesel Range Organics (DRO)	47.57	mg/Kg	10	95.1	64.6	116			
Sample ID: LCSD-18623		*LCSD*			Batch ID:	**18623**	Analysis Date:		3/24/2009
Diesel Range Organics (DRO)	43.84	mg/Kg	10	87.7	64.6	116	8.16	17.4	
Method: EPA Method 8015B: Diesel Range									
Sample ID: MB-18599		*MBLK*			Batch ID:	**18599**	Analysis Date:		3/24/2009
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-18599		*LCS*			Batch ID:	**18599**	Analysis Date:		3/24/2009
Diesel Range Organics (DRO)	5.420	mg/L	1.0	108	74	157			
Sample ID: LCSD-18599		*LCSD*			Batch ID:	**18599**	Analysis Date:		3/24/2009
Diesel Range Organics (DRO)	5.516	mg/L	1.0	110	74	157	1.77	23	

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name WESTERN REFINING GALLU

Date Received: 3/20/2009

Work Order Number 0903342

Received by: AT

Sample ID labels checked by: AT/AS
Initials

Checklist completed by: Signature 3/20/09 Date

Matrix: Carrier name Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	6°	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

1 of 2

Chain-of-Custody Record

Client: Western Refining Company Gallup

Mailing Address: Route 3 Box 7 Gallup, NM 87301

Phone #: 505-722-3833

email or Fax#: 505-722-0210

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☒ NELAP ☐ Other ____

☐ EDD (Type) ____

Turn-Around Time:
☒ Standard ☐ Rush ____

Project Name: Excavation for art area

Project #: —

Project Manager: Gaurav Rajer

Sampler: Regina Mitchell

On Ice: ☒ Yes ☐ No

Sample Temperature: 6

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0903342	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)				Air Bubbles (Y or N)
3/17/09	1450	soil	CS-2	4oz Jar / 1	None	-1			X												
~~3/17/09~~	~~[redacted]~~			4oz Jar / 1																	
3/17/09	1610	soil	C-1	4oz Jar / 1	None	-2			X												
3/17/09	1450	soil	MS/MSD CS-2	4oz Jar / 1	None	-1 -3			X												
3/18/09	1355	soil	CS-3	4oz Jar / 1	None	-4			X												
3/18/09	1405	soil	CS-4	4oz Jar / 1	None	-5			X												
3/18/09	[redacted]1705	soil	CS-6	4oz Jar / 1	None	-6			X												
3/18/09	1707	soil	CS-9	4oz Jar / 1	None	-7			X												
3/18/09	1308	water	EB2-031809	40mL VOA / 3	HCL	-8			X												
3/18/09	1620	water	EB1-031809-3	40mL VOA / 3	HCl	-9			X												
3/18/09	1625	water	EB2-031809-3	40mL VOA 3	HCl	-10			X												
3/18/09	1410	water	EB1-031809-2	" / 3	HCl	-11			X												

Date:	Time:	Relinquished by:	Received by:	Date	Time
3/20/09	4:45	Regina Mitchell	[signature]	3/20/09	1645
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: Please copy results to regina mitchell rmitchell@trihydro.com

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

2 of 2

Chain-of-Custody Record

Client: Western Refining Company Gallup

Mailing Address: Route 3 Box 7

Phone #: 505-722-3833

email or Fax#: 505-722-0210

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☒ NELAP ☐ Other

☐ EDD (Type) —

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Excavation Far Out Area

Project #:

Project Manager: Gaur Rajan

Sampler: Regina Mitchell

On Ice: ☒ Yes ☐ No

Sample Temperature: °C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0903342	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
3/17/09	1435	water	EB2-031709			-12			X													
3/18/09	1415	water	EB2-031809-2			-13			X													
3/17/09	1430	water	EB1-031709			-14			X													
3/18/09	1303	water	EB1-031809			-15			X													

Date:	Time:	Relinquished by:	Received by:	Date	Time
3/20/09	450 pm	Regina Mitchell	[signature]	3/20/09	1650
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: Please copy rmitchell@trinitydo.com

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Tier II Data Validation Report Summary

Client: Western Refining Company, Gallup	Laboratory: Hall Environmental Analysis Laboratory, Inc.
Project Name: March 2009 Sampling Event	Sample Matrix: Soil
Project Number: 697-017-002	Sample Start Date: March 17, 2009
Date Validated: June 19, 2009	Sample End Date: March 18, 2009
Parameters Included: Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by Environmental Protection Agency (EPA) Method 8015B	
Laboratory Project IDs: 0903342	
Data Validator's Name: Jessica Swanson, Environmental Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services group on the analytical data report package generated by Hall Environmental Analysis Laboratory, Inc. evaluating samples from the Western Refining Company site located in Gallup, New Mexico.

Accuracy, method compliance, and completeness of this data package were assessed during this data review. Laboratory accuracy was established by reviewing the demonstrated percent recoveries of laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) to verify that none of the data were biased. Additionally, field accuracy was established by collecting equipment blanks to monitor for possible ambient or cross contamination during sampling. Method compliance was established by reviewing holding times, detection limits, method blanks, and the LCS and LCSD percent recoveries against method specific requirements. Completeness was evaluated by determining the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody, laboratory analytical methods, and any other necessary documents associated with this analytical data set.

Data were evaluated in general accordance with validation criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-08-01, June 2008 with additional reference to USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999.

Tier II Data Validation Report Summary

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
CS-2	0903342-01
C-1	0903342-02
CS-3	0903342-04
CS-4	0903342-05
CS-6	0903342-06
CS-9	0903342-07
EB2-031809	0903342-08
EB1-031809-3	0903342-09
EB2-031809-3	0903342-10
EB1-031809-2	0903342-11
EB2-031709	0903342-12
EB2-031809-2	0903342-13
EB1-031709	0903342-14
EB1-031809	0903342-15

Tier II Data Validation Report

The samples were analyzed for client-specified analytes. Chain-of-custody (COC) completeness is included in Section #3. The laboratory data were reviewed to evaluate compliance with the required methods and the quality of the reported data. A leading check mark (✓) indicates that the referenced data were deemed acceptable. A preceding crossed circle (⊗) signifies problems with the referenced data that may have warranted attaching qualifiers to the data.

- ✓ Data Completeness
- ✓ COC Documentation
- ✓ Holding Times and Preservation
- ✓ Laboratory Blanks
- ✓ System Monitoring Compounds (i.e. Surrogates)
- ✓ Laboratory Control Samples/Laboratory Control Sample Duplicates (LCS/LCSD)
- ✓ Equipment Blanks

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Section #2.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data which are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R, the data may be used for site evaluation, with the reasons for qualification being given consideration when interpreting sample concentrations. Data points which are assigned an R qualifier should not be used for any site evaluation purposes. Data were not qualified during this validation.

Data Completeness

The analyses appeared to be performed as requested on the chain-of-custody records. The associated samples were received by the laboratory and appeared to be analyzed properly. No data points were rejected. The data completeness measure for this data package is 100%.

VALIDATION CRITERIA CHECKLIST	
1. Did the laboratory identify any non-conformances related to the analytical data?	Yes
Comments: The laboratory noted the following non-conformance with this data set. For Method 8015 DRO, samples CS-2 and CS-4, the surrogate DNOP was not recovered due to dilution.	
2. Were data qualification flags used by the laboratory? If yes, define.	Yes
Comments: The laboratory used the following data qualification flag with this data set. S – Spike recovery outside accepted recovery limits.	
3. Were sample chain-of-custody forms complete?	Yes
Comments: The COC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.	
4. Were detection limits in accordance with the QAPP, permit, or method, or indicated as acceptable by the Tier I validator?	Yes
Comments: Detection limits were reviewed and appeared to be acceptable. Dilutions of 20 times were applied to samples CS-2 and CS-4 for DRO analysis. The final usability of the data with respect to dilutions will be determined by the project team.	
5. Were the requested analytical methods in compliance with the QAPP, permit, or COC?	Yes
Comments: The requested analytical methods were in compliance with what was requested on the COC.	
6. Were samples received in good condition within method specified requirements?	Yes
Comments: Samples were received intact and in good condition. Cooler temperatures were within the 4°C +/- 2°C acceptable range at 6.0°C, as noted in the Sample Receipt Checklist.	
7. Were samples analyzed within method specified or technical holding times?	Yes
Comments: Samples were analyzed within the acceptable hold time.	
8. Were reported units appropriate for the associated sample matrix/matrices and method(s) of analyses?	Yes
Comments: Analyte concentrations were reported in units of mg/kg. The reported units are acceptable for the soil matrix. The equipment blanks were reported in mg/L which is acceptable for the water matrix.	
9. Do the laboratory reports include all constituents requested to be reported as indicated by the Tier I validator?	Yes
Comments: As indicated on the Tier I data validation, laboratory reported constituents were in accordance with those requested. A MS/MSD sample was collected and not used as a matrix spike. Discussions with the laboratory determined that this was acceptable and required no further action.	
10. Was there indication from the laboratory that the initial or continued calibration verification results were within acceptable limits?	N/A
Comments: Initial and continuing calibration data were not included as part of this data set; however, these data are assumed to be acceptable as the laboratory did not note that any calibration verification results were outside acceptable limits.	
11. Was the total number of method blank samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Method blanks were prepared on a greater than 5% basis.	
12. Were method blank detections reported for this data set?	No
Comments: Method blank detections were not reported for this data set.	

VALIDATION CRITERIA CHECKLIST	
13. Was the total number of matrix spike samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	No
Comments: Matrix spike samples were not prepared for this data set although the COC listed a matrix spike sample collected for sample CS-2. The laboratory was contacted and stated that the sample concentration was too high and the spike would be un-recoverable and therefore the matrix spike was not performed. No further action was required.	
14. Were matrix spike recoveries within laboratory-specified limits?	N/A
Comments: Matrix spike samples were not prepared for this data set.	
15. Was the total number of laboratory control samples analyzed equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Laboratory control samples were reported on a greater than 5% basis.	
16. Were laboratory control recoveries within laboratory-specified limits?	Yes
Comments: Laboratory control recoveries were within laboratory-specified limits.	
17. Were surrogate recoveries within laboratory control limits?	Yes
Comments: Surrogate recoveries were within laboratory control limits. The surrogate DNOP for samples CS-2 and CS-4 was not recovered due to dilution. This is acceptable per the method.	
18. Was the number of equipment, trip, or field blanks collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	Yes
Comments: Eight equipment blanks (EB2-031809, EB1-031809-3, EB2-031809-3, EB1-031809-2, EB2-031709, EB2-031809-2, EB1-031709, and EB1-031809) were submitted with this data set which is greater than 10% the total number of samples.	
19. Were detections found in trip blanks, equipment blanks, or field blanks?	No
Comments: There were no detections in the equipment blank.	
20. Were the field duplicates collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	No
Comments: Field duplicates were not collected with this data set.	
21. Were field duplicate RPD values less than the upper RPD limit (soil [50%], water [30%], or air/vapor [25%]), as specified by the laboratory or method?	N/A
Comments: Field duplicates were not collected with this data set.	
22. Were laboratory duplicate RPD values within laboratory-specified limits?	N/A
Comments: Laboratory duplicates were not prepared for this data set.	

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Monday, June 22, 2009

Gaurav Rajen
Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-0227
FAX: (505) 722-0210

RE: Excavation Fan out area

Order No.: 0904327

Dear Gaurav Rajen:

Hall Environmental Analysis Laboratory, Inc. received 8 sample(s) on 4/21/2009 for the analyses presented in the following report.

This report is an addendum to the report dated April 24, 2009. The analysis date for DRO has been corrected.

No determination of compounds below these (denoted by the ND or < sign) has been made. Please don't hesitate to contact Hall Environmental for any additional information or clarifications.

Reporting limits are determined by EPA methodology.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc.

Date: *22-Jun-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan out area
Lab Order: 0904327

Lab ID: 0904327-01 **Collection Date:** 4/21/2009
Client Sample ID: BD042109 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	5500	100		mg/Kg	10	4/22/2009
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	4/22/2009
Surr: DNOP	77.3	61.7-135		%REC	10	4/22/2009

Lab ID: 0904327-02 **Collection Date:** 4/21/2009 1:12:00 PM
Client Sample ID: CS-15 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	5000	100		mg/Kg	10	4/22/2009
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	4/22/2009
Surr: DNOP	112	61.7-135		%REC	10	4/22/2009

Lab ID: 0904327-03 **Collection Date:** 4/21/2009 1:05:00 PM
Client Sample ID: CS-8 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	6100	100		mg/Kg	10	4/22/2009
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	4/22/2009
Surr: DNOP	76.8	61.7-135		%REC	10	4/22/2009

Lab ID: 0904327-04 **Collection Date:** 4/21/2009 10:10:00 AM
Client Sample ID: 1EB042109-1 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/22/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/22/2009
Surr: DNOP	110	58-140		%REC	1	4/22/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *22-Jun-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan out area
Lab Order: 0904327

Lab ID: 0904327-05
Collection Date: 4/21/2009 10:10:00 AM
Client Sample ID: 2EB042109-1
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/22/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/22/2009
Surr: DNOP	113	58-140		%REC	1	4/22/2009

Lab ID: 0904327-06
Collection Date: 4/21/2009 1:28:00 PM
Client Sample ID: CS-14
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	130	10		mg/Kg	1	4/22/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/22/2009
Surr: DNOP	76.3	61.7-135		%REC	1	4/22/2009

Lab ID: 0904327-07
Collection Date: 4/21/2009 1:20:00 PM
Client Sample ID: 1EB042109-2
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/22/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/22/2009
Surr: DNOP	111	58-140		%REC	1	4/22/2009

Lab ID: 0904327-08
Collection Date: 4/21/2009 1:33:00 PM
Client Sample ID: 2EB042109-2
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/22/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/22/2009
Surr: DNOP	110	58-140		%REC	1	4/22/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: Excavation Fan out area **Work Order:** 0904327

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics									
Sample ID: 0904327-02AMSD		*MSD*			Batch ID:	**18909**	Analysis Date:		4/23/2009
Diesel Range Organics (DRO)	3995	mg/Kg	100	-2070	67.4	117	2.50	17.4	S
Sample ID: MB-18909		*MBLK*			Batch ID:	**18909**	Analysis Date:		4/22/2009
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-18909		*LCS*			Batch ID:	**18909**	Analysis Date:		4/22/2009
Diesel Range Organics (DRO)	45.72	mg/Kg	10	91.4	64.6	116			
Sample ID: LCSD-18909		*LCSD*			Batch ID:	**18909**	Analysis Date:		4/22/2009
Diesel Range Organics (DRO)	45.06	mg/Kg	10	90.1	64.6	116	1.45	17.4	
Sample ID: 0904327-02AMS		*MS*			Batch ID:	**18909**	Analysis Date:		4/23/2009
Diesel Range Organics (DRO)	3896	mg/Kg	100	-2260	67.4	117			S
Method: EPA Method 8015B: Diesel Range									
Sample ID: MB-18911		*MBLK*			Batch ID:	**18911**	Analysis Date:		4/22/2009
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-18911		*LCS*			Batch ID:	**18911**	Analysis Date:		4/22/2009
Diesel Range Organics (DRO)	5.116	mg/L	1.0	102	74	157			
Sample ID: LCSD-18911		*LCSD*			Batch ID:	**18911**	Analysis Date:		4/22/2009
Diesel Range Organics (DRO)	5.905	mg/L	1.0	118	74	157	14.3	23	

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: Excavation Fan out area
Work Order: 0904327

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics									
Sample ID: 0904327-02AMSD		*MSD*			Batch ID:	**18909**	Analysis Date:		4/23/2009
Diesel Range Organics (DRO)	3995	mg/Kg	100	-2070	67.4	117	2.50	17.4	S
Sample ID: MB-18909		*MBLK*			Batch ID:	**18909**	Analysis Date:		4/22/2009
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-18909		*LCS*			Batch ID:	**18909**	Analysis Date:		4/22/2009
Diesel Range Organics (DRO)	45.72	mg/Kg	10	91.4	64.6	116			
Sample ID: LCSD-18909		*LCSD*			Batch ID:	**18909**	Analysis Date:		4/22/2009
Diesel Range Organics (DRO)	45.06	mg/Kg	10	90.1	64.6	116	1.45	17.4	
Sample ID: 0904327-02AMS		*MS*			Batch ID:	**18909**	Analysis Date:		4/23/2009
Diesel Range Organics (DRO)	3896	mg/Kg	100	-2260	67.4	117			S
Method: EPA Method 8015B: Diesel Range									
Sample ID: MB-18911		*MBLK*			Batch ID:	**18911**	Analysis Date:		4/22/2009
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-18911		*LCS*			Batch ID:	**18911**	Analysis Date:		4/22/2009
Diesel Range Organics (DRO)	5.116	mg/L	1.0	102	74	157			
Sample ID: LCSD-18911		*LCSD*			Batch ID:	**18911**	Analysis Date:		4/22/2009
Diesel Range Organics (DRO)	5.905	mg/L	1.0	118	74	157	14.3	23	

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name WESTERN REFINING GALLU

Date Received: 4/21/2009

Work Order Number 0904327

Received by: AMF

Sample ID labels checked by: AF (Initials)

Checklist completed by: [signature] (Signature) 4/21/09 (Date)

Matrix:

Carrier name Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	

Container/Temp Blank temperature? 5° *<6° C Acceptable* If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

1 of 1

Chain-of-Custody Record

Client: Western Refining Company Gallup

Mailing Address: Route 3 Box 7 Gallup, NM 87301

Phone #: 505-722-3833

email or Fax#: 505-722-0210

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☒ NELAP ☐ Other _____

☐ EDD (Type) ——

Turn-Around Time:
☐ Standard ☒ Rush 24 hr

Project Name: Excavation Fan out Area

Project #: —

Project Manager: Gaurav Rajan

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 5.6°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
4/21/09	1312	soil	MS/MSD - CS15																			
4/21/09	—	soil	BD042109	4oz jar / 1	none	0904327-1			X													
4/21/09	1312	soil	CS-15	4oz jar / 1	none	-2			X													
4/21/09	1305	soil	CS-8	4oz jar / 1	none	-3			X													
4/21/09	1010	water	1EB042109-1	40mL VOA / 3	HCl	-4			X													
4/21/09	1014	water	2EB042109-1	40mL VOA / 3	HCl	-5			X													
4/21/09	1328	soil	CS-14	4oz jar / 1	none	-6			X													
4/21/09	1320	water	1EB042109-2	40mL VOA / 3	HCl	-7			X													
4/21/09	1333	water	2EB042109-2	40mL VOA / 3	HCl	-8			X													

Date:	Time:	Relinquished by:	Received by:	Date	Time
4/21/09	1400	Regina Mitchell	[signature]	4/21/09	1401
4/21/09	1550	[signature]	[signature]	4/21/09	1550

Remarks: Please copy results to rmitchell@trihydro.com

Soil rush - only soil

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Tier II Data Validation Report Summary

Client: Western Refining Company, Gallup	Laboratory: Hall Environmental Analysis Laboratory, Inc.
Project Name: April 2009 Sampling Event	Sample Matrix: Soil
Project Number: 697-017-002	Sample Start Date: April 21, 2009
Date Validated: June 19, 2009	Sample End Date: April 21, 2009
Parameters Included: Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by Environmental Protection Agency (EPA) Method 8015B	
Laboratory Project IDs: 0904327	
Data Validator's Name: Jessica Swanson, Environmental Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services group on the analytical data report package generated by Hall Environmental Analysis Laboratory, Inc. evaluating samples from the Western Refining Company site located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values of samples from field duplicate pairs. Laboratory accuracy was established by reviewing the demonstrated percent recoveries of matrix spike (MS) and matrix spike duplicate (MSD) samples, and of laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) to verify that none of the data were biased. Additionally, field accuracy was established by collecting equipment blanks to monitor for possible ambient or cross contamination during sampling. Method compliance was established by reviewing holding times, detection limits, surrogate recoveries, method blanks, and the LCS and LCSD percent recoveries against method specific requirements. Completeness was evaluated by determining the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody, laboratory analytical methods, and any other necessary documents associated with this analytical data set.

Data were evaluated in general accordance with validation criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-08-01, June 2008 with additional reference to USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999. Review of duplicates is conducted in accordance with USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
BD042109	0904327-01
CS-15	0904327-02
CS-8	0904327-03
1EB042109-1	0904327-04
2EB042109-1	0904327-05
CS-14	0904327-06
1EB042109-2	0904327-07
2EB042109-2	0904327-08

Tier II Data Validation Report

The samples were analyzed for client-specified analytes. Chain-of-custody (COC) completeness is included in Section #3. The laboratory data were reviewed to evaluate compliance with the required methods and the quality of the reported data. A leading check mark (✓) indicates that the referenced data were deemed acceptable. A preceding crossed circle (⊗) signifies problems with the referenced data that may have warranted attaching qualifiers to the data.

- ✓ Data Completeness
- ✓ COC Documentation
- ✓ Holding Times and Preservation
- ✓ Laboratory Blanks
- ✓ System Monitoring Compounds (i.e. Surrogates)
- ✓ Laboratory Control Samples/Laboratory Control Sample Duplicates (LCS/LCSD)
- ⊗ Matrix Spike/Matrix Spike Duplicates (MS/MSD)
- ✓ Field Duplicates
- ✓ Equipment Blanks

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Section #2.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data which are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R, the data may be used for site evaluation, with the reasons for qualification being given consideration when interpreting sample concentrations. Data points which are assigned an R qualifier should not be used for any site evaluation purposes. Data were qualified as a result of this validation for extreme matrix interference.

Data qualifiers used during this validation included:

J – Estimated concentration

UJ – Estimated reporting limit

Data Completeness

The analyses appeared to be performed as requested on the chain-of-custody records. The associated samples were received by the laboratory and appeared to be analyzed properly. No data points were rejected. The data completeness measure for this data package is 100%.

VALIDATION CRITERIA CHECKLIST	
1. Did the laboratory identify any non-conformances related to the analytical data?	Yes
Comments: The laboratory re-issued the laboratory report to correct the analysis date for DRO on June 22, 2009.	
2. Were data qualification flags used by the laboratory? If yes, define.	Yes
Comments: The laboratory used the following data qualification flag with this data set. S – Spike recovery outside accepted recovery limits.	
3. Were sample chain-of-custody forms complete?	Yes
Comments: The COC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.	
4. Were detection limits in accordance with the QAPP, permit, or method, or indicated as acceptable by the Tier I validator?	Yes
Comments: Detection limits were reviewed and appeared to be acceptable. Dilutions of 10 times were applied to samples BD042109, CS-15, and CS-8 for DRO analyses. The final usability of the data with respect to dilutions will be determined by the project team.	
5. Were the requested analytical methods in compliance with the QAPP, permit, or COC?	Yes
Comments: The requested analytical methods were in compliance with what was requested on the COC.	
6. Were samples received in good condition within method specified requirements?	Yes
Comments: Samples were received intact and in good condition. Cooler temperatures were within the 4°C +/- 2°C acceptable range at 5.0°C, as noted in the Sample Receipt Checklist.	
7. Were samples analyzed within method specified or technical holding times?	Yes
Comments: Samples were analyzed within the acceptable hold time.	
8. Were reported units appropriate for the associated sample matrix/matrices and method(s) of analyses?	Yes
Comments: Analyte concentrations were reported in units of mg/kg. The reported units are acceptable for the soil matrix. The equipment blanks were reported in mg/L which is acceptable for the water matrix.	
9. Do the laboratory reports include all constituents requested to be reported as indicated by the Tier I validator?	Yes
Comments: As indicated on the Tier I data validation, laboratory reported constituents were in accordance with those requested.	
10. Was there indication from the laboratory that the initial or continued calibration verification results were within acceptable limits?	N/A
Comments: Initial and continuing calibration data were not included as part of this data set; however, these data are assumed to be acceptable as the laboratory did not note that any calibration verification results were outside acceptable limits.	
11. Was the total number of method blank samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Method blanks were prepared on a greater than 5% basis.	
12. Were method blank detections reported for this data set?	No
Comments: Method blank detections were not reported for this data set.	
13. Was the total number of matrix spike samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	No
Comments: Matrix spike samples were prepared on a greater than 5% basis with the exceptions of DRO batch 18911. The LCS/LCSD data was used to validate this batch. The MS/MSD sample pair for DRO batch 18909 was prepared from sample CS-15.	

VALIDATION CRITERIA CHECKLIST	
14. Were matrix spike recoveries within laboratory-specified limits?	No
Comments: The MS and MSD recoveries for target analytes were within laboratory-specified limits with the following exceptions. **The MS and MSD for DRO in batch 18909 were below the acceptable limits of 67.4% to 117% at -2070 and -2260%, respectively. As a result of severe matrix interference, the samples were qualified as J for detections and UJ for non-detects for the analytes DRO and MRO.**	
15. Was the total number of laboratory control samples analyzed equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Laboratory control samples were reported on a greater than 5% basis.	
16. Were laboratory control recoveries within laboratory-specified limits?	Yes
Comments: Laboratory control recoveries were within laboratory-specified limits.	
17. Were surrogate recoveries within laboratory control limits?	Yes
Comments: Surrogate recoveries were within laboratory control limits.	
18. Was the number of equipment, trip, or field blanks collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	Yes
Comments: Four equipment blanks (1EB042109-1, 2EB042109-1, 1EB042109-2, and 2EB042109-2) were submitted with this data set which is at least 10% the total number of samples.	
19. Were detections found in trip blanks, equipment blanks, or field blanks?	No
Comments: There were no detections in the equipment blanks.	
20. Were the field duplicates collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	Yes
Comments: One field duplicate, BD042109 was collected as a duplicate of sample CS-8 which is at least 10% the total number of samples.	
21. Were field duplicate RPD values less than the upper RPD limit (soil [50%], water [30%], or air/vapor [25%]), as specified by the laboratory or method?	Yes
Comments: Field duplicate RPD values were less than the upper RPD limit of 50% for soil samples as shown in the Field Duplicate Summary table at the end of this report.	
22. Were laboratory duplicate RPD values within laboratory-specified limits?	N/A
Comments: Laboratory duplicates were not prepared for this data set.	

DATA QUALIFICATION SUMMARY

Analyte	Field Sample ID	Lab Sample ID	Result (mg/kg)	Reviewer Qualifier	Reviewer Qualifier Reason
DRO	BD042109	0904327-01	5500	J	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	BD042109	0904327-01	ND (500)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
DRO	CS-15	0904327-02	5000	J	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	CS-15	0904327-02	ND (500)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
DRO	CS-8	0904327-03	6100	J	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	CS-8	0904327-03	ND (500)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
DRO	1EB042109-1	0904327-04	ND (1.0)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	1EB042109-1	0904327-04	ND (5.0)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
DRO	2-EB042109-1	0904327-05	ND (1.0)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	2-EB042109-1	0904327-05	ND (5.0)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
DRO	CS-14	0904327-06	130	J	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	CS-14	0904327-06	ND (50)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
DRO	1EB042109-2	0904327-07	ND (1.0)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	1EB042109-2	0904327-07	ND (5.0)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.

Analyte	Field Sample ID	Lab Sample ID	Result (mg/kg)	Reviewer Qualifier	Reviewer Qualifier Reason
DRO	2EB042109-2	0904327-08	ND (1.0)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	2EB042109-2	0904327-08	ND (5.0)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.

FIELD DUPLICATE SUMMARY

Client Sample ID: CS-8 Field Duplicate Sample ID: BD042109			
Analyte	**Laboratory Result**	**Duplicate Result**	**Relative Percent Difference (RPD)**
DRO	6100 mg/kg	5500 mg/kg	10.3%
Field duplicate RPD control limits should not exceed 30% for water, 50% for soil, or 25% for air or vapor as established by USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.			

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Wednesday, April 29, 2009

Gaurav Rajen
Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-0227
FAX (505) 722-0210

RE: Excavation Fan Out Area

Order No.: 0904388

Dear Gaurav Rajen:

Hall Environmental Analysis Laboratory, Inc. received 19 sample(s) on 4/24/2009 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc.

Date: *29-Apr-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area
Lab Order: 0904388

Lab ID: 0904388-01 **Collection Date:** 4/22/2009 11:15:00 AM
Client Sample ID: 1EB042209 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/24/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/24/2009
Surr: DNOP	113	58-140		%REC	1	4/24/2009

Lab ID: 0904388-02 **Collection Date:** 4/22/2009 11:10:00 AM
Client Sample ID: 2EB042209 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/24/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/24/2009
Surr: DNOP	104	58-140		%REC	1	4/24/2009

Lab ID: 0904388-03 **Collection Date:** 4/22/2009 5:15:00 PM
Client Sample ID: MS/MSD CS-7 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	510	10		mg/Kg	1	4/27/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/27/2009
Surr: DNOP	113	61.7-135		%REC	1	4/27/2009

Lab ID: 0904388-04 **Collection Date:** 4/22/2009 2:30:00 PM
Client Sample ID: FS-4 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	420	10		mg/Kg	1	4/27/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/27/2009
Surr: DNOP	85.8	61.7-135		%REC	1	4/27/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

1

Hall Environmental Analysis Laboratory, Inc.

Date: *29-Apr-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area

Lab Order: 0904388

Lab ID: 0904388-05
Client Sample ID: CS-11
Collection Date: 4/22/2009 3:20:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	380	10		mg/Kg	1	4/27/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/27/2009
Surr: DNOP	92.3	61.7-135		%REC	1	4/27/2009

Lab ID: 0904388-06
Client Sample ID: CS-19
Collection Date: 4/23/2009 4:25:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	1600	100		mg/Kg	10	4/27/2009
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	4/27/2009
Surr: DNOP	98.5	61.7-135		%REC	10	4/27/2009

Lab ID: 0904388-07
Client Sample ID: FS-5
Collection Date: 4/22/2009 5:25:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/27/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/27/2009
Surr: DNOP	69.0	61.7-135		%REC	1	4/27/2009

Lab ID: 0904388-08
Client Sample ID: FS-6
Collection Date: 4/23/2009 2:50:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	280	10		mg/Kg	1	4/27/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/27/2009
Surr: DNOP	93.2	61.7-135		%REC	1	4/27/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

2

Hall Environmental Analysis Laboratory, Inc.

Date: *29-Apr-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area
Lab Order: 0904388

Lab ID: 0904388-09
Collection Date: 4/23/2009 3:15:00 PM
Client Sample ID: CS-13
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/27/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/27/2009
Surr: DNOP	84.8	61.7-135		%REC	1	4/27/2009

Lab ID: 0904388-10
Collection Date: 4/22/2009 5:33:00 PM
Client Sample ID: CS-12
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	490	10		mg/Kg	1	4/27/2009
Motor Oil Range Organics (MRO)	61	50		mg/Kg	1	4/27/2009
Surr: DNOP	100	61.7-135		%REC	1	4/27/2009

Lab ID: 0904388-11
Collection Date: 4/22/2009 3:40:00 PM
Client Sample ID: CS-5
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	34	10		mg/Kg	1	4/27/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/27/2009
Surr: DNOP	87.7	61.7-135		%REC	1	4/27/2009

Lab ID: 0904388-12
Collection Date: 4/22/2009 4:15:00 PM
Client Sample ID: CS-18
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	330	10		mg/Kg	1	4/27/2009
Motor Oil Range Organics (MRO)	60	50		mg/Kg	1	4/27/2009
Surr: DNOP	93.3	61.7-135		%REC	1	4/27/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *29-Apr-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area

Lab Order: 0904388

Lab ID: 0904388-13 **Collection Date:** 4/23/2009
Client Sample ID: BD **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	1700	100		mg/Kg	10	4/27/2009
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	4/27/2009
Surr: DNOP	102	61.7-135		%REC	10	4/27/2009

Lab ID: 0904388-14 **Collection Date:** 4/22/2009 4:30:00 PM
Client Sample ID: CS-10 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	24	10		mg/Kg	1	4/27/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/27/2009
Surr: DNOP	83.8	61.7-135		%REC	1	4/27/2009

Lab ID: 0904388-15 **Collection Date:** 4/22/2009 5:15:00 PM
Client Sample ID: CS-7 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	400	10		mg/Kg	1	4/27/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/27/2009
Surr: DNOP	107	61.7-135		%REC	1	4/27/2009

Lab ID: 0904388-16 **Collection Date:** 4/22/2009 1:25:00 PM
Client Sample ID: CS-16 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/27/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/27/2009
Surr: DNOP	97.6	61.7-135		%REC	1	4/27/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *29-Apr-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area

Lab Order: 0904388

Lab ID: 0904388-17
Client Sample ID: CS-17
Collection Date: 4/21/2009 4:10:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	73	10		mg/Kg	1	4/27/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/27/2009
Surr: DNOP	98.4	61.7-135		%REC	1	4/27/2009

Lab ID: 0904388-18
Client Sample ID: 1EB042309
Collection Date: 4/23/2009 1:20:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/24/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/24/2009
Surr: DNOP	110	58-140		%REC	1	4/24/2009

Lab ID: 0904388-19
Client Sample ID: 2EB042309
Collection Date: 4/23/2009 1:25:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/24/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/24/2009
Surr: DNOP	108	58-140		%REC	1	4/24/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area **Work Order:** 0904388

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics									
Sample ID: MB-18939		*MBLK*			Batch ID:	**18939**	Analysis Date:		4/27/2009
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-18939		*LCS*			Batch ID:	**18939**	Analysis Date:		4/27/2009
Diesel Range Organics (DRO)	45.28	mg/Kg	10	90.6	64.6	116			
Sample ID: LCSD-18939		*LCSD*			Batch ID:	**18939**	Analysis Date:		4/27/2009
Diesel Range Organics (DRO)	47.76	mg/Kg	10	95.5	64.6	116	0	17.4	
Method: EPA Method 8015B: Diesel Range									
Sample ID: MB-18937		*MBLK*			Batch ID:	**18937**	Analysis Date:		4/24/2009
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-18937		*LCS*			Batch ID:	**18937**	Analysis Date:		4/24/2009
Diesel Range Organics (DRO)	5.829	mg/L	1.0	117	74	157			
Sample ID: LCSD-18937		*LCSD*			Batch ID:	**18937**	Analysis Date:		4/24/2009
Diesel Range Organics (DRO)	6.780	mg/L	1.0	136	74	157	15.1	23	

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name WESTERN REFINING GALLU — Date Received: 4/24/2009

Work Order Number 0904388 — Received by: TLS

Checklist completed by: _____ Signature — 4/24/09 Date — Sample ID labels checked by: TS Initials

Matrix: — Carrier name: Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☑	No ☐	N/A ☐	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	

Container/Temp Blank temperature? **6°** *<6° C Acceptable* If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

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Client: Western Refining Company Gallup

Mailing Address: Route 3 Box 7 Gallup, NM 87301

Phone #: 505-722-3833

email or Fax#: 505-722-0210

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☒ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Excavation Fan Out Area

Project #: —

Project Manager: Gaurav Rajen

Sampler: Regina Mitchell / John Reitz

On Ice: Yes No

Sample Temperature: °C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0904388	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
4/22/09	1115	water	1EB 042209	40mL VOA / 3	HCl	1			X													
4/22/09	1110	water	2EB 042209	40mL VOA / 3	HCl	2			X													
4/22/09	1715	soil	MS/MSD CS-7	4oz jar / 1	None	3			X													
4/22/09	1430	soil	FS-4	4oz jar / 1	none	4			X													
4/22/09	1520	soil	CS-11	4oz jar / 1	none	5			X													
4/23/09	1625	soil	CS-19	4oz jar / 1	none	6			X													
4/22/09	1725	soil	FS-5	4oz jar / 1	none	7			X													
4/23/09	1450	soil	FS-6	4oz jar / 1	none	8			X													
4/23/09	1515	soil	CS-13	4oz jar / 1	none	9			X													
4/22/09	1733	soil	CS-12	4oz jar / 1	none	10			X													
4/22/09	1540	soil	CS-5	4oz jar / 1	None	11			X													
4/22/09	1615	soil	CS-18	4oz jar / 1	none	12			X													

Date:	Time:	Relinquished by:	Received by:	Date	Time
4/23/09	1730	Regina Mitchell	[signature]	4/23/09	1731
4/24/09	8:00	[signature]	[signature]	4/24/09	807

Remarks: Please copy results to Regina@rmitchell@trihydro.com

*as per R.M. requested rush analysis as 4/24

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

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Chain-of-Custody Record

Client: Western Refining Company

Mailing Address: Route 3 Box 7
Gallup, NM 87301

Phone #: 505-722-3833

email or Fax#: 505-722-0210

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☒ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Excavation Fan out area

Project #: —

Project Manager: Gaurav Rajen

Sampler: Regina Mitchell / John Peitz

On Ice: ☒ Yes ☐ No

Sample Temperature: [illegible]

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0904383	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
4/23/09	—	soil	BD	4oz jar / 1	None	13			X													
4/22/09	1630	soil	CS-10	4oz jar / 1	None	14			X													
4/22/09	1715	soil	CS-7	4oz jar / 1	None	15			X													
4/22/09	1325	soil	CS-16	4oz jar / 1	None	16			X													
4/21/09	1610	soil	CS-17	4oz jar / 1	None	17			X													
4/23/09	1320	water	7EB042309	40ml VOA / 3	HCl	18			X													
4/23/09	1325	water	2EB042309	40ml VOA / 3	HCl	19			X													

Date:	Time:	Relinquished by:	Received by:	Date	Time
4/23/09	1730	Regina Mitchell	[signature]	4/23/09	1731
8/06 4/24/09		[signature]	[signature]	4/24/09	802

Remarks: Please copy results to regina at rmitchell@trihydro.com

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Tier II Data Validation Report Summary

Client: Western Refining Company, Gallup	Laboratory: Hall Environmental Analysis Laboratory, Inc.
Project Name: April 2009 Sampling Event	Sample Matrix: Soil
Project Number: 697-017-002	Sample Start Date: April 21, 2009
Date Validated: June 22, 2009	Sample End Date: April 23, 2009
Parameters Included: Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by Environmental Protection Agency (EPA) Method 8015B	
Laboratory Project IDs: 0904388	
Data Validator's Name: Jessica Swanson, Environmental Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services group on the analytical data report package generated by Hall Environmental Analysis Laboratory, Inc. evaluating samples from the Western Refining Company site located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values of samples from field duplicate pairs. Laboratory accuracy was established by reviewing the demonstrated percent recoveries of laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) to verify that none of the data were biased. Additionally, field accuracy was established by collecting equipment blanks to monitor for possible ambient or cross contamination during sampling. Method compliance was established by reviewing holding times, detection limits, surrogate recoveries, method blanks, and the LCS and LCSD percent recoveries against method specific requirements. Completeness was evaluated by determining the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody, laboratory analytical methods, and any other necessary documents associated with this analytical data set.

Data were evaluated in general accordance with validation criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-08-01, June 2008 with additional reference to USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999. Review of duplicates is conducted in accordance with USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.

Tier II Data Validation Report Summary

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
1EB042209	0904388-01
2EB042209	0904388-02
MS/MSD CS-7	0904388-03
FS-4	0904388-04
CS-11	0904388-05
CS-19	0904388-06
FS-5	0904388-07
FS-6	0904388-08
CS-13	0904388-09
CS-12	0904388-10
CS-5	0904388-11
CS-18	0904388-12
BD	0904388-13
CS-10	0904388-14
CS-7	0904388-15
CS-16	0904388-16
CS-17	0904388-17
1EB042309	0904388-18
2EB042309	0904388-19

Tier II Data Validation Report

The samples were analyzed for client-specified analytes. Chain-of-custody (COC) completeness is included in Section #3. The laboratory data were reviewed to evaluate compliance with the required methods and the quality of the reported data. A leading check mark (✓) indicates that the referenced data were deemed acceptable. A preceding crossed circle (⊗) signifies problems with the referenced data that may have warranted attaching qualifiers to the data.

- ✓ Data Completeness
- ✓ COC Documentation
- ✓ Holding Times and Preservation
- ✓ Laboratory Blanks
- ✓ System Monitoring Compounds (i.e. Surrogates)
- ✓ Laboratory Control Samples/Laboratory Control Sample Duplicates (LCS/LCSD)
- ✓ Field Duplicates
- ✓ Equipment Blanks

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Section #2.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data which are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R, the data may be used for site evaluation, with the reasons for qualification being given consideration when interpreting sample concentrations. Data points which are assigned an R qualifier should not be used for any site evaluation purposes. Data were not qualified as a result of this validation.

Data Completeness

The analyses appeared to be performed as requested on the chain-of-custody records. The associated samples were received by the laboratory and appeared to be analyzed properly. No data points were rejected. The data completeness measure for this data package is 100%.

VALIDATION CRITERIA CHECKLIST	
1. Did the laboratory identify any non-conformances related to the analytical data?	No
Comments: The laboratory did not identify any non-conformances related to this data set.	
2. Were data qualification flags used by the laboratory? If yes, define.	No
Comments: The laboratory did not use data qualification flags with this data set.	
3. Were sample chain-of-custody forms complete?	Yes
Comments: The COC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.	
4. Were detection limits in accordance with the QAPP, permit, or method, or indicated as acceptable by the Tier I validator?	Yes
Comments: Detection limits were reviewed and appeared to be acceptable. Dilutions of 10 times were applied to samples CS-19 and BD for DRO analyses. The final usability of the data with respect to dilutions will be determined by the project manager.	
5. Were the requested analytical methods in compliance with the QAPP, permit, or COC?	Yes
Comments: The requested analytical methods were in compliance with what was requested on the COC.	
6. Were samples received in good condition within method specified requirements?	Yes
Comments: Samples were received intact and in good condition. Cooler temperatures were within the 4°C +/- 2°C acceptable range at 6.0°C, as noted in the Sample Receipt Checklist. Custody seals were present and intact on the sample bottles.	
7. Were samples analyzed within method specified or technical holding times?	Yes
Comments: Samples were analyzed within the acceptable hold time.	
8. Were reported units appropriate for the associated sample matrix/matrices and method(s) of analyses?	Yes
Comments: Analyte concentrations were reported in units of mg/kg. The reported units are acceptable for the soil matrix. The equipment blanks were reported in mg/L which is acceptable for the water matrix.	
9. Do the laboratory reports include all constituents requested to be reported as indicated by the Tier I validator?	Yes
Comments: As indicated on the Tier I data validation, laboratory reported constituents were in accordance with those requested. A MS/MSD sample was collected and not used as a matrix spike. Discussions with the laboratory determined that this was acceptable and required no further action.	
10. Was there indication from the laboratory that the initial or continued calibration verification results were within acceptable limits?	N/A
Comments: Initial and continuing calibration data were not included as part of this data set; however, these data are assumed to be acceptable as the laboratory did not note that any calibration verification results were outside acceptable limits.	
11. Was the total number of method blank samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Method blanks were prepared on a greater than 5% basis.	
12. Were method blank detections reported for this data set?	No
Comments: Method blank detections were not reported for this data set.	
13. Was the total number of matrix spike samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	No
Comments: Matrix spike samples were not prepared for this data set even though a MS/MSD sample was submitted. The laboratory was contacted and stated that the sample concentration was too high and the spike would be un-recoverable and therefore the matrix spike was not performed. No further action was required.	

VALIDATION CRITERIA CHECKLIST	
14. Were matrix spike recoveries within laboratory-specified limits?	N/A
Comments: Matrix spike samples were not prepared for this data set.	
15. Was the total number of laboratory control samples analyzed equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Laboratory control samples were reported on a greater than 5% basis.	
16. Were laboratory control recoveries within laboratory-specified limits?	Yes
Comments: Laboratory control recoveries were within laboratory-specified limits.	
17. Were surrogate recoveries within laboratory control limits?	Yes
Comments: Surrogate recoveries were within laboratory control limits.	
18. Was the number of equipment, trip, or field blanks collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	Yes
Comments: Four equipment blanks (1EB042209, 2EB042209, 1EB042309, and 2EB042309) were submitted with this data set which is at least 10% the total number of samples.	
19. Were detections found in trip blanks, equipment blanks, or field blanks?	No
Comments: There were no detections in the equipment blanks.	
20. Were the field duplicates collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	No
Comments: One field duplicate, BD was collected as a duplicate of sample CS-19 which is less than 10% the total number of samples.	
21. Were field duplicate RPD values less than the upper RPD limit (soil [50%], water [30%], or air/vapor [25%]), as specified by the laboratory or method?	Yes
Comments: Field duplicate RPD values were less than the upper RPD limit of 50% for soil samples as shown in the Field Duplicate Summary table at the end of this report.	
22. Were laboratory duplicate RPD values within laboratory-specified limits?	N/A
Comments: Laboratory duplicates were not prepared for this data set.	

FIELD DUPLICATE SUMMARY

Client Sample ID: CS-19 Field Duplicate Sample ID: BD			
Analyte	**Laboratory Result**	**Duplicate Result**	**Relative Percent Difference (RPD)**
DRO	1600 mg/kg	1700 mg/kg	6.1%
Field duplicate RPD control limits should not exceed 30% for water, 50% for soil, or 25% for air or vapor as established by USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.			

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Friday, May 22, 2009

Gaurav Rajen
Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-0227
FAX (505) 722-0210

RE: Excavation Fan Out Area

Order No.: 0905343

Dear Gaurav Rajen:

Hall Environmental Analysis Laboratory, Inc. received 4 sample(s) on 5/19/2009 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

ACCREDITED IN ACCORDANCE WITH nelac

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

CASE NARRATIVE

"S" flags denote that the surrogate was not recoverable due to sample dilution or matrix interferences.

Hall Environmental Analysis Laboratory, Inc.

Date: *22-May-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area

Lab Order: 0905343

Lab ID: 0905343-01
Client Sample ID: CS-20
Collection Date: 5/19/2009 10:50:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	13000	200		mg/Kg	20	5/21/2009
Motor Oil Range Organics (MRO)	ND	1000		mg/Kg	20	5/21/2009
Surr: DNOP	0	61.7-135	S	%REC	20	5/21/2009

Lab ID: 0905343-02
Client Sample ID: MS/MSD-CS20
Collection Date: 5/19/1990 10:50:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	12000	200		mg/Kg	20	5/21/2009
Motor Oil Range Organics (MRO)	ND	1000		mg/Kg	20	5/21/2009
Surr: DNOP	0	61.7-135	S	%REC	20	5/21/2009

Lab ID: 0905343-03
Client Sample ID: CS-21
Collection Date: 5/19/2009 10:56:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	3000	100		mg/Kg	10	5/21/2009
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	5/21/2009
Surr: DNOP	89.6	61.7-135		%REC	10	5/21/2009

Lab ID: 0905343-04
Client Sample ID: BD051909
Collection Date: 5/19/2009
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	2100	100		mg/Kg	10	5/21/2009
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	5/21/2009
Surr: DNOP	94.6	61.7-135		%REC	10	5/21/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area **Work Order:** 0905343

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics									
Sample ID: MB-19148		*MBLK*			Batch ID:	**19148**	Analysis Date:		5/21/2009
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-19148		*LCS*			Batch ID:	**19148**	Analysis Date:		5/21/2009
Diesel Range Organics (DRO)	52.42	mg/Kg	10	105	64.6	116			
Sample ID: LCSD-19148		*LCSD*			Batch ID:	**19148**	Analysis Date:		5/21/2009
Diesel Range Organics (DRO)	53.43	mg/Kg	10	107	64.6	116	1.90	17.4	

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name WESTERN REFINING GALLU

Date Received: 5/19/2009

Work Order Number 0905343

Received by: TLS

Sample ID labels checked by: TD
Initials

Checklist completed by: [signature] Signature 5/19/09 Date

Matrix:

Carrier name: Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☑	No ☐	N/A ☐	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		Number of preserved bottles checked for pH:
Water - VOA vials have zero headspace?	No VOA vials submitted ☑	Yes ☐	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	*<2 >12 unless noted below.*
Container/Temp Blank temperature?	**4.9°**	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

Client: Western Refining Company Gallup

Mailing Address: Route 3 Box 7 Gallup NM 87301

Phone #: 505 722-3833

email or Fax#: 505 722 0210

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☒ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Excavation Far Out area

Project #: —

Project Manager: Gaurav Rajen

Sampler: John Rez

On Ice: ☒ Yes ☐ No

Sample Temperature: 4.6°

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0905343	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
~~5/19/09~~	~~1050~~	~~Soil~~	~~CS-20~~																			
5/19/09	1050	Soil	CS-20	4oz jar / 1	None	1			X													
5/19/09	1050	Soil	MS/MSD-CS20	4oz jar / 1	None	2			X													
5/19/09	1056	Soil	CS-21	4oz jar / 1	None	3			X													
5/19/09	—	Soil	BD 051909	4oz jar / 1	None	4			X													

Date:	Time:	Relinquished by:	Received by:	Date	Time
5/19/09	1333	[signature]	[signature]	5/19/09	1333
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Tier II Data Validation Report Summary

Client: Western Refining Company, Gallup	Laboratory: Hall Environmental Analysis Laboratory, Inc.
Project Name: May 2009 Sampling Event	Sample Matrix: Soil
Project Number: 697-017-002	Sample Start Date: May 19, 2009
Date Validated: June 22, 2009	Sample End Date: May 19, 2009
Parameters Included: Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by Environmental Protection Agency (EPA) Method 8015B	
Laboratory Project IDs: 0905343	
Data Validator's Name: Jessica Swanson, Environmental Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services group on the analytical data report package generated by Hall Environmental Analysis Laboratory, Inc. evaluating samples from the Western Refining Company site located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values of samples from field duplicate pairs. Laboratory accuracy was established by reviewing the demonstrated percent recoveries of laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) to verify that none of the data were biased. Method compliance was established by reviewing holding times, detection limits, surrogate recoveries, method blanks, and the LCS and LCSD percent recoveries against method specific requirements. Completeness was evaluated by determining the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody, laboratory analytical methods, and any other necessary documents associated with this analytical data set.

Data were evaluated in general accordance with validation criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-08-01, June 2008 with additional reference to USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999. Review of duplicates is conducted in accordance with USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
CS-20	0905343-01
MS/MSD CS-20	0905343-02
CS-21	0905343-03
BD-51909	0905343-04

Tier II Data Validation Report

The samples were analyzed for client-specified analytes. Chain-of-custody (COC) completeness is included in Section #3. The laboratory data were reviewed to evaluate compliance with the required methods and the quality of the reported data. A leading check mark (✓) indicates that the referenced data were deemed acceptable. A preceding crossed circle (⊗) signifies problems with the referenced data that may have warranted attaching qualifiers to the data.

- ✓ Data Completeness
- ✓ COC Documentation
- ✓ Holding Times and Preservation
- ✓ Laboratory Blanks
- ✓ System Monitoring Compounds (i.e. Surrogates)
- ✓ Laboratory Control Samples/Laboratory Control Sample Duplicates (LCS/LCSD)
- ✓ Field Duplicates

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Section #2.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data which are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R, the data may be used for site evaluation, with the reasons for qualification being given consideration when interpreting sample concentrations. Data points which are assigned an R qualifier should not be used for any site evaluation purposes. Data were not qualified as a result of this validation.

Data Completeness

The analyses appeared to be performed as requested on the chain-of-custody records. The associated samples were received by the laboratory and appeared to be analyzed properly. No data points were rejected. The data completeness measure for this data package is 100%.

VALIDATION CRITERIA CHECKLIST	
1. Did the laboratory identify any non-conformances related to the analytical data?	Yes
Comments: The laboratory noted in the case narrative that the S flag denotes that the surrogate was not recoverable due to sample dilution or matrix interferences.	
2. Were data qualification flags used by the laboratory? If yes, define.	Yes
Comments: The laboratory used the following data qualification flag with this data set. S – Surrogate not recoverable due to sample dilution or matrix interference	
3. Were sample chain-of-custody forms complete?	Yes
Comments: The COC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.	
4. Were detection limits in accordance with the QAPP, permit, or method, or indicated as acceptable by the Tier I validator?	Yes
Comments: Detection limits were reviewed and appeared to be acceptable. Dilutions of 10 to 20 times were applied to the samples for DRO analyses. The final usability of data with respect to dilutions with be determined by the project team.	
5. Were the requested analytical methods in compliance with the QAPP, permit, or COC?	Yes
Comments: The requested analytical methods were in compliance with what was requested on the COC.	
6. Were samples received in good condition within method specified requirements?	Yes
Comments: Samples were received intact and in good condition. Cooler temperatures were within the 4°C +/- 2°C acceptable range at 4.9°C, as noted in the Sample Receipt Checklist. Custody seals were present and intact on the sample bottles.	
7. Were samples analyzed within method specified or technical holding times?	Yes
Comments: Samples were analyzed within the acceptable hold time.	
8. Were reported units appropriate for the associated sample matrix/matrices and method(s) of analyses?	Yes
Comments: Analyte concentrations were reported in units of mg/kg. The reported units are acceptable for the soil matrix.	
9. Do the laboratory reports include all constituents requested to be reported as indicated by the Tier I validator?	Yes
Comments: As indicated on the Tier I data validation, laboratory reported constituents were in accordance with those requested. A MS/MSD sample was collected and not used as a matrix spike. Discussions with the laboratory determined that this was acceptable and required no further action.	
10. Was there indication from the laboratory that the initial or continued calibration verification results were within acceptable limits?	N/A
Comments: Initial and continuing calibration data were not included as part of this data set; however, these data are assumed to be acceptable as the laboratory did not note that any calibration verification results were outside acceptable limits.	
11. Was the total number of method blank samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Method blanks were prepared on a greater than 5% basis.	
12. Were method blank detections reported for this data set?	No
Comments: Method blank detections were not reported for this data set.	

VALIDATION CRITERIA CHECKLIST	
13. Was the total number of matrix spike samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	No
Comments: Matrix spike samples were not prepared for this data set even though a MS/MSD sample was submitted. The laboratory was contacted and stated that the sample concentration was too high and the spike would be un-recoverable and therefore the matrix spike was not performed. No further action was required.	
14. Were matrix spike recoveries within laboratory-specified limits?	N/A
Comments: Matrix spike samples were not prepared for this data set.	
15. Was the total number of laboratory control samples analyzed equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Laboratory control samples were reported on a greater than 5% basis.	
16. Were laboratory control recoveries within laboratory-specified limits?	Yes
Comments: Laboratory control recoveries were within laboratory-specified limits.	
17. Were surrogate recoveries within laboratory control limits?	Yes
Comments: Surrogate recoveries were within laboratory control limits. The surrogate DNOP was not reportable in samples CS-20 and MS/MSD CS-20. This is acceptable per the method.	
18. Was the number of equipment, trip, or field blanks collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	No
Comments: Blank samples were not submitted with this data set.	
19. Were detections found in trip blanks, equipment blanks, or field blanks?	N/A
Comments: Blank samples were not submitted with this data set.	
20. Were the field duplicates collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	Yes
Comments: One field duplicate, BD051909 was collected as a duplicate of sample CS-21 which is at least 10% the total number of samples.	
21. Were field duplicate RPD values less than the upper RPD limit (soil [50%], water [30%], or air/vapor [25%]), as specified by the laboratory or method?	Yes
Comments: Field duplicate RPD values were less than the upper RPD limit of 50% for soil samples as shown in the Field Duplicate Summary table at the end of this report.	
22. Were laboratory duplicate RPD values within laboratory-specified limits?	N/A
Comments: Laboratory duplicates were not prepared for this data set.	

FIELD DUPLICATE SUMMARY

Client Sample ID: CS-21 Field Duplicate Sample ID: BD051919			
Analyte	**Laboratory Result**	**Duplicate Result**	**Relative Percent Difference (RPD)**
DRO	3000 mg/kg	2100 mg/kg	35.3%
Field duplicate RPD control limits should not exceed 30% for water, 50% for soil, or 25% for air or vapor as established by USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.			

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Monday, June 08, 2009

Gaurav Rajen
Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-0227
FAX (505) 722-0210

RE: Excavation Fan Out Area

Order No.: 0906074

Dear Gaurav Rajen:

Hall Environmental Analysis Laboratory, Inc. received 4 sample(s) on 6/4/2009 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

ACCREDITED IN ACCORDANCE WITH nelac

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc.

Date: *08-Jun-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area
Lab Order: 0906074

Lab ID: 0906074-01
Collection Date: 6/3/2009 3:15:00 PM
Client Sample ID: CS-24
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/5/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/5/2009
Surr: DNOP	97.0	61.7-135		%REC	1	6/5/2009

Lab ID: 0906074-02
Collection Date: 6/3/2009 3:00:00 PM
Client Sample ID: CS-23
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/5/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/5/2009
Surr: DNOP	93.1	61.7-135		%REC	1	6/5/2009

Lab ID: 0906074-03
Collection Date: 6/3/2009 2:40:00 PM
Client Sample ID: CS-22
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	170	10		mg/Kg	1	6/5/2009
Motor Oil Range Organics (MRO)	52	50		mg/Kg	1	6/5/2009
Surr: DNOP	94.3	61.7-135		%REC	1	6/5/2009

Lab ID: 0906074-04
Collection Date: 6/3/2009
Client Sample ID: BD
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/5/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/5/2009
Surr: DNOP	96.1	61.7-135		%REC	1	6/5/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area **Work Order:** 0906074

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics									
Sample ID: 0906074-03AMSD		*MSD*			Batch ID:	**19269**	Analysis Date:		6/5/2009
Diesel Range Organics (DRO)	128.2	mg/Kg	10	-75.2	67.4	117	0.657	17.4	S
Sample ID: MB-19269		*MBLK*			Batch ID:	**19269**	Analysis Date:		6/5/2009
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-19269		*LCS*			Batch ID:	**19269**	Analysis Date:		6/5/2009
Diesel Range Organics (DRO)	49.97	mg/Kg	10	99.9	64.6	116			
Sample ID: LCSD-19269		*LCSD*			Batch ID:	**19269**	Analysis Date:		6/5/2009
Diesel Range Organics (DRO)	50.82	mg/Kg	10	102	64.6	116	1.69	17.4	
Sample ID: 0906074-03AMS		*MS*			Batch ID:	**19269**	Analysis Date:		6/5/2009
Diesel Range Organics (DRO)	127.4	mg/Kg	10	-76.9	67.4	117			S

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name WESTERN REFINING GALLU

Date Received: 6/4/2009

Work Order Number 0906074

Received by: AT

Sample ID labels checked by: AS
Initials

Checklist completed by: [signature] 6/4/09
Signature Date

Matrix: Carrier name Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☑	No ☐	N/A ☐	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		Number of preserved bottles checked for pH:
Water - VOA vials have zero headspace?	No VOA vials submitted ☑	Yes ☐	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	*<2 >12 unless noted below.*
Container/Temp Blank temperature?	**1.0°**	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

Client: Western Refining Company

Mailing Address: Route 3 Box 7
Gallup, NM 87301

Phone #: 505-722-3833

email or Fax#: 505-722-0210

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☒ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☐ Standard ☒ Rush 2-3 days

Project Name: Excavation Fan out Area

Project #: —

Project Manager:

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 4.0°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0906071	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)				Air Bubbles (Y or N)
6/3/09	1515	Soil	CS-24	4oz jar / 1	None	-1			X												
6/3/09	1500	Soil	CS-23	4oz jar / 1	None	-2			X												
6/3/09	1440	Soil	CS-22	4oz jar / 1	None	-3			X												
6/3/09	1440	Soil	MS/MSD CS-22	4oz jar / 1	None	-3			X												
6/3/09	[illegible]	Soil	BD	4oz jar / 1	None	-4			X												

Date:	Time:	Relinquished by:	Received by:	Date	Time
6/3/09	2100	Regina Mitchell	[signature]	6/3/09	2100
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: Please copy results to rmitchell@trihydro.com

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Tier II Data Validation Report Summary

Client: Western Refining Company, Gallup	Laboratory: Hall Environmental Analysis Laboratory, Inc.
Project Name: June 2009 Sampling Event	Sample Matrix: Soil
Project Number: 697-017-002	Sample Start Date: June 3, 2009
Date Validated: June 22, 2009	Sample End Date: June 3, 2009
Parameters Included: Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by Environmental Protection Agency (EPA) Method 8015B	
Laboratory Project IDs: 0906074	
Data Validator's Name: Jessica Swanson, Environmental Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services group on the analytical data report package generated by Hall Environmental Analysis Laboratory, Inc. evaluating samples from the Western Refining Company site located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values of samples from field duplicate pairs. Laboratory accuracy was established by reviewing the demonstrated percent recoveries of matrix spike (MS) and matrix spike duplicate (MSD) samples, and of laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) to verify that none of the data were biased. Method compliance was established by reviewing holding times, detection limits, surrogate recoveries, method blanks, and the LCS and LCSD percent recoveries against method specific requirements. Completeness was evaluated by determining the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody, laboratory analytical methods, and any other necessary documents associated with this analytical data set.

Data were evaluated in general accordance with validation criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-08-01, June 2008 with additional reference to USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999. Review of duplicates is conducted in accordance with USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
CS-24	0906074-01
CS-23	0906074-02
CS-22	0906074-03
BD	0906074-04

Tier II Data Validation Report

The samples were analyzed for client-specified analytes. Chain-of-custody (COC) completeness is included in Section #3. The laboratory data were reviewed to evaluate compliance with the required methods and the quality of the reported data. A leading check mark (✓) indicates that the referenced data were deemed acceptable. A preceding crossed circle (⊗) signifies problems with the referenced data that may have warranted attaching qualifiers to the data.

- ✓ Data Completeness
- ✓ COC Documentation
- ✓ Holding Times and Preservation
- ✓ Laboratory Blanks
- ✓ System Monitoring Compounds (i.e. Surrogates)
- ✓ Laboratory Control Samples/Laboratory Control Sample Duplicates (LCS/LCSD)
- ⊗ Matrix Spike/Matrix Spike Duplicates (MS/MSD)
- ✓ Field Duplicates

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Section #2.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data which are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R, the data may be used for site evaluation, with the reasons for qualification being given consideration when interpreting sample concentrations. Data points which are assigned an R qualifier should not be used for any site evaluation purposes. Data were qualified as a result of this validation for low matrix spike recoveries.

Data qualifiers used during this validation included:

J – Estimated concentration

UJ – Estimated reporting limit

Data Completeness

The analyses appeared to be performed as requested on the chain-of-custody records. The associated samples were received by the laboratory and appeared to be analyzed properly. No data points were rejected. The data completeness measure for this data package is 100%.

VALIDATION CRITERIA CHECKLIST	
1. Did the laboratory identify any non-conformances related to the analytical data?	No
Comments: The laboratory did not identify any non-conformances related to this data set.	
2. Were data qualification flags used by the laboratory? If yes, define.	Yes
Comments: The laboratory used the following data qualification flag with this data set. S – Spike recovery outside accepted recovery limits.	
3. Were sample chain-of-custody forms complete?	Yes
Comments: The COC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.	
4. Were detection limits in accordance with the QAPP, permit, or method, or indicated as acceptable by the Tier I validator?	Yes
Comments: Detection limits were reviewed and appeared to be acceptable. Dilutions were not applied to the samples in this data set.	
5. Were the requested analytical methods in compliance with the QAPP, permit, or COC?	Yes
Comments: The requested analytical methods were in compliance with what was requested on the COC.	
6. Were samples received in good condition within method specified requirements?	Yes
Comments: Samples were received intact and in good condition. Cooler temperatures were below the 4°C +/- 2°C acceptable range at 1.0°C, as noted in the Sample Receipt Checklist. The cooler temperature below 2°C was judged as acceptable since the samples were not reported to be frozen upon receipt at the laboratory and the sample containers were reported to be intact.	
7. Were samples analyzed within method specified or technical holding times?	Yes
Comments: Samples were analyzed within the acceptable hold time.	
8. Were reported units appropriate for the associated sample matrix/matrices and method(s) of analyses?	Yes
Comments: Analyte concentrations were reported in units of mg/kg. The reported units are acceptable for the soil matrix.	
9. Do the laboratory reports include all constituents requested to be reported as indicated by the Tier I validator?	Yes
Comments: As indicated on the Tier I data validation, laboratory reported constituents were in accordance with those requested.	
10. Was there indication from the laboratory that the initial or continued calibration verification results were within acceptable limits?	N/A
Comments: Initial and continuing calibration data were not included as part of this data set; however, these data are assumed to be acceptable as the laboratory did not note that any calibration verification results were outside acceptable limits.	
11. Was the total number of method blank samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Method blanks were prepared on a greater than 5% basis.	
12. Were method blank detections reported for this data set?	No
Comments: Method blank detections were not reported for this data set.	
13. Was the total number of matrix spike samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Matrix spike samples were prepared on a greater than 5% basis. The MS/MSD sample pairs for DRO batch 19269 were prepared from sample CS-22.	

VALIDATION CRITERIA CHECKLIST	
14. Were matrix spike recoveries within laboratory-specified limits?	No
Comments: The MS and MSD recoveries for target analytes were within laboratory-specified limits with the following exceptions. **The MS and MSD for DRO in batch 19269 were outside the acceptable limits of 67.4% to 117% at -76.9% and -75.2%, respectively. As a result of severe matrix interference, the samples were qualified as J for detections and UJ for non-detects for both DRO and MRO.**	
15. Was the total number of laboratory control samples analyzed equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Laboratory control samples were reported on a greater than 5% basis.	
16. Were laboratory control recoveries within laboratory-specified limits?	Yes
Comments: Laboratory control recoveries were within laboratory-specified limits.	
17. Were surrogate recoveries within laboratory control limits?	Yes
Comments: Surrogate recoveries were within laboratory control limits.	
18. Was the number of equipment, trip, or field blanks collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	No
Comments: Blank samples were not submitted with this data set.	
19. Were detections found in trip blanks, equipment blanks, or field blanks?	N/A
Comments: Blank samples were not submitted with this data set.	
20. Were the field duplicates collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	Yes
Comments: One field duplicate, BD was collected as a duplicate of sample CS-23 which is at least 10% the total number of samples.	
21. Were field duplicate RPD values less than the upper RPD limit (soil [50%], water [30%], or air/vapor [25%]), as specified by the laboratory or method?	N/A
Comments: Field duplicate RPD values could not be calculated since both samples were non-detect for the requested analytes.	
22. Were laboratory duplicate RPD values within laboratory-specified limits?	N/A
Comments: Laboratory duplicates were not prepared for this data set.	

DATA QUALIFICATION SUMMARY

Analyte	Field Sample ID	Lab Sample ID	Result (mg/kg)	Reviewer Qualifier	Reviewer Qualifier Reason
DRO	CS-24	0906074-01	ND (10)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	CS-24	0906074-01	ND (50)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
DRO	CS-23	0906074-02	ND (10)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	CS-23	0906074-02	ND (50)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
DRO	CS-22	0906074-03	170 mg/kg	J	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	CS-22	0906074-03	52 mg/kg	J	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
DRO	BD	0906074-04	ND (10)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	BD	0906074-04	ND (50)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Thursday, July 30, 2009

Gaurav Rajen
Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-0227
FAX (505) 722-0210

RE: Excavation Fan Out Area

Order No.: 0907447

Dear Gaurav Rajen:

Hall Environmental Analysis Laboratory, Inc. received 7 sample(s) on 7/24/2009 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
for Nancy McDuffie, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

ACCREDITED IN ACCORDANCE WITH nelac

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area
Lab Order: 0907447

CASE NARRATIVE

"S" flags denote that the surrogate was not recoverable due to sample dilution or matrix interferences.

Hall Environmental Analysis Laboratory, Inc.

Date: *30-Jul-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area

Lab Order: 0907447

Lab ID: 0907447-01 **Collection Date:** 7/23/2009 3:21:00 PM
Client Sample ID: CS-25 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	6800	200		mg/Kg	20	7/29/2009
Motor Oil Range Organics (MRO)	ND	1000		mg/Kg	20	7/29/2009
Surr: DNOP	0	61.7-135	S	%REC	20	7/29/2009

Lab ID: 0907447-02 **Collection Date:** 7/23/2009 3:36:00 PM
Client Sample ID: CS-26 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	17000	200		mg/Kg	20	7/29/2009
Motor Oil Range Organics (MRO)	ND	1000		mg/Kg	20	7/29/2009
Surr: DNOP	0	61.7-135	S	%REC	20	7/29/2009

Lab ID: 0907447-03 **Collection Date:** 7/23/2009
Client Sample ID: BD-072309 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	14000	200		mg/Kg	20	7/29/2009
Motor Oil Range Organics (MRO)	ND	1000		mg/Kg	20	7/29/2009
Surr: DNOP	0	61.7-135	S	%REC	20	7/29/2009

Lab ID: 0907447-04 **Collection Date:** 7/23/2009 3:55:00 PM
Client Sample ID: CS-27 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	1800	100		mg/Kg	10	7/29/2009
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	7/29/2009
Surr: DNOP	0	61.7-135	S	%REC	10	7/29/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *30-Jul-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area

Lab Order: 0907447

Lab ID: 0907447-05
Client Sample ID: CS-28

Collection Date: 7/23/2009 4:05:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	110	10		mg/Kg	1	7/29/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/29/2009
Surr: DNOP	94.6	61.7-135		%REC	1	7/29/2009

Lab ID: 0907447-07
Client Sample ID: Rinsate-1

Collection Date: 7/23/2009 11:03:00 AM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	7/28/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	7/28/2009
Surr: DNOP	99.1	58-140		%REC	1	7/28/2009

Lab ID: 0907447-08
Client Sample ID: Rinsate-2

Collection Date: 7/23/2009 3:24:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	7/28/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	7/28/2009
Surr: DNOP	107	58-140		%REC	1	7/28/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area **Work Order:** 0907447

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics									
Sample ID: 0907447-05AMSD		*MSD*			Batch ID:	**19724**	Analysis Date:		7/29/2009
Diesel Range Organics (DRO)	139.2	mg/Kg	10	48.8	67.4	117	17.6	17.4	SR
Sample ID: MB-19724		*MBLK*			Batch ID:	**19724**	Analysis Date:		7/29/2009
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-19724		*LCS*			Batch ID:	**19724**	Analysis Date:		7/29/2009
Diesel Range Organics (DRO)	35.49	mg/Kg	10	71.0	64.6	116			
Sample ID: LCSD-19724		*LCSD*			Batch ID:	**19724**	Analysis Date:		7/29/2009
Diesel Range Organics (DRO)	41.25	mg/Kg	10	82.5	64.6	116	15.0	17.4	
Sample ID: 0907447-05AMS		*MS*			Batch ID:	**19724**	Analysis Date:		7/29/2009
Diesel Range Organics (DRO)	166.1	mg/Kg	10	103	67.4	117			
Method: EPA Method 8015B: Diesel Range									
Sample ID: MB-19723		*MBLK*			Batch ID:	**19723**	Analysis Date:		7/28/2009
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-19723		*LCS*			Batch ID:	**19723**	Analysis Date:		7/28/2009
Diesel Range Organics (DRO)	5.319	mg/L	1.0	106	74	157			
Sample ID: LCSD-19723		*LCSD*			Batch ID:	**19723**	Analysis Date:		7/28/2009
Diesel Range Organics (DRO)	5.545	mg/L	1.0	111	74	157	4.14	23	

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name **WESTERN REFINING GALLU** Date Received: **7/24/2009**

Work Order Number **0907447** Received by: ARS

Sample ID labels checked by: _____ Initials

Checklist completed by: _____ Signature 7/24/09 Date

Matrix: Carrier name: Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☑	No ☐	N/A ☐	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		Number of preserved bottles checked for pH:
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	_____
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	*<2 >12 unless noted below.*
Container/Temp Blank temperature?	**1.6°**	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

Client: Western Refining Company Gallup

Mailing Address: Route 3 Box 7 Gallup NM 87301

Phone #: 505 722-3833

email or Fax#: 505 722 0210

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☒ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Excavation Fan out Area

Project #:

Project Manager: Gayray Rajen

Sampler: John Peltz

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.6

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0907447	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
7/23/09	1521	Soil	CS-25	4oz jar/1	None	1			X													
7/23/09	1536	Soil	CS-26	4oz jar/1	None	2			X													
7/23/09	—	Soil	BD-072309	4oz jar/1	None	3			X													
7/23/09	1555	Soil	CS-27	4oz jar/1	None	4			X													
7/23/09	1605	Soil	CS-28	4oz jar/1	None	5			X													
7/23/09	1605	Soil	MS/MSD-CS28	4oz jar/1	None	~~6~~ 5 AT 7/24/09			X													
7/23/09	1103	Water	Rinsate-1	VOA-3	HT	7			X													
7/23/09	1524	Water	Rinsate-2	VOA-3	HT	8			X													

Date:	Time:	Relinquished by:	Received by:	Date	Time
7/24	855	John Peltz 307-399-0977	[signature]	7/24/09	8:55

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Tier II Data Validation Report Summary

Client: Western Refining Company, Gallup	Laboratory: Hall Environmental Analysis Laboratory, Inc.
Project Name: July 2009 Sampling Event	Sample Matrix: Soil and Water
Project Number: 697-017-002	Sample Start Date: July 23, 2009
Date Validated: December 18, 2009	Sample End Date: July 23, 2009
Parameters Included: Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by Environmental Protection Agency (EPA) Method 8015B	
Laboratory Project IDs: 0907447	
Data Validator: Jessica Swanson, Environmental Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services group on the analytical data report package generated by Hall Environmental Analysis Laboratory, Inc. evaluating samples from the Western Refining Company site located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values of samples from field duplicate pairs and laboratory duplicate pairs. Laboratory accuracy was established by reviewing the demonstrated percent recoveries of matrix spike (MS) and matrix spike duplicate (MSD) samples, and of laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) to verify that none of the data were biased. Method compliance was established by reviewing holding times, detection limits, surrogate recoveries, method blanks, and the LCS and LCSD percent recoveries against method specific requirements. Completeness was evaluated by determining the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody, laboratory analytical methods, and any other necessary documents associated with this analytical data set.

Data were evaluated in general accordance with validation criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-08-01, June 2008 with additional reference to USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999. Review of duplicates is conducted in accordance with USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
CS-25	0907447-01
CS-26	0907447-02
BD-072309	0907447-03
CS-27	0907447-04
CS-28	0907447-05
Rinsate-1	0907447-07
Rinsate-2	0907447-08

Tier II Data Validation Report

The samples were analyzed for client-specified analytes. Chain-of-custody (COC) completeness is included in Section #3. The laboratory data were reviewed to evaluate compliance with the required methods and the quality of the reported data. A leading check mark (✓) indicates that the referenced data were deemed acceptable. A preceding crossed circle (⊗) signifies problems with the referenced data that may have warranted attaching qualifiers to the data.

- ✓ Data Completeness
- ✓ COC Documentation
- ✓ Holding Times and Preservation
- ✓ Laboratory Blanks
- ✓ System Monitoring Compounds (i.e. Surrogates)
- ✓ Laboratory Control Samples/Laboratory Control Sample Duplicates (LCS/LCSD)
- ⊗ Matrix Spike/Matrix Spike Duplicates (MS/MSD)
- ✓ Field Duplicates
- ✓ Equipment Blanks

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Section #2.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data which are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R, the data may be used for site evaluation, with the reasons for qualification being given consideration when interpreting sample concentrations. Data points which are assigned an R qualifier should not be used for any site evaluation purposes. Data were qualified as a result of this validation due to a low matrix spike recovery and a high MS/MSD RPD value.

Data qualifiers used during this validation included:

J – Estimated concentration

UJ – Estimated reporting limit

Data Completeness

The analyses appeared to be performed as requested on the chain-of-custody records. The associated samples were received by the laboratory and appeared to be analyzed properly. No data points were rejected. The data completeness measure for this data package is 100%.

VALIDATION CRITERIA CHECKLIST	
1. Was the report free of any non-conformances related to the analytical data identified by the laboratory?	Yes
Comments: The laboratory did not identify any non-conformances related to this data set.	
2. Were data qualification flags or any other notes used by the laboratory? If yes, define.	Yes
Comments: The laboratory used the following data qualification flag with this data set. S – Spike recovery outside accepted recovery limits. R – RPD outside accepted recovery limits. S – Surrogate was not recoverable due to sample dilution or matrix interferences.	
3. Were sample COC forms complete?	Yes
Comments: The COC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.	
4. Were detection limits in accordance with the QAPP, permit, or method, or indicated as acceptable by the Tier I validator?	Yes
Comments: Detection limits were reviewed and appeared to be acceptable. Dilutions up to 20 times were applied to the samples in this data set. The final usability of the data with respect to dilutions will be determined by the project manager.	
5. Were the requested analytical methods in compliance with the QAPP, permit, or COC?	Yes
Comments: The requested analytical methods were in compliance with what was requested on the COC.	
6. Were samples received in good condition within method specified requirements?	Yes
Comments: Samples were received intact and in good condition. Cooler temperatures were below the 4°C +/- 2°C acceptable range at 1.6°C, as noted in the Sample Receipt Checklist. The cooler temperature below 2°C was judged as acceptable since the samples were not reported to be frozen upon receipt at the laboratory and the sample containers were reported to be intact.	
7. Were samples analyzed within method specified or technical holding times?	Yes
Comments: Samples were analyzed within the acceptable hold time.	
8. Were reported units appropriate for the associated sample matrix/matrices and method(s) of analyses?	Yes
Comments: Analyte concentrations were reported in units of mg/kg. The reported units are acceptable for the soil matrix. The results for the rinsate samples were reported in units of mg/L, which are appropriate for water samples.	
9. Do the laboratory reports include all constituents requested to be reported as indicated by the Tier I validator?	Yes
Comments: As indicated on the Tier I data validation, laboratory reported constituents were in accordance with those requested.	
10. Was there indication from the laboratory that the initial or continued calibration verification results were within acceptable limits?	N/A
Comments: Initial and continuing calibration data were not included as part of this data set; however, these data are assumed to be acceptable as the laboratory did not note that any calibration verification results were outside acceptable limits.	
11. Was the total number of method blank samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Method blanks were prepared on a greater than 5% basis.	

VALIDATION CRITERIA CHECKLIST	
12. Were method blank samples free of analyte contamination?	Yes
Comments: Method blank detections were not reported for this data set.	
13. Was the total number of matrix spike samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Matrix spike samples were prepared on a greater than 5% basis for the total number of samples. The MS/MSD sample pairs for DRO batch 19724 were prepared from sample CS-28.	
14. Were MS/MSD percent recoveries and MS/MSD RPD values within data validation or laboratory QC limits?	No
Comments: The MS and MSD recoveries for target analytes were within laboratory-specified limits with the following exceptions. Matrix spike samples were not prepared for motor oil analyses. However, the diesel range organics MS/MSD were used to evaluate the accuracy of the motor oil analyses. **The MSD for DRO in batch 197247 was outside the acceptable limits of 67.4% to 117% at 48.8%. Additionally the MS/MSD RPD value was above the upper limit of 17.4% at 17.6%. Due to matrix interference and possible poor repeatability, the associated samples were qualified as J for detections and UJ for non-detects for both DRO and MRO.**	
15. Was the total number of laboratory control samples analyzed equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Laboratory control samples were reported on a greater than 5% basis. Laboratory control samples were not prepared for motor oil analyses. However, the diesel range organics LCS/LCSD were used to evaluate the accuracy of the motor oil analyses.	
16. Were LCS/LCSD percent recoveries and LCS/LCSD RPD values within laboratory QC limits?	Yes
Comments: Laboratory control recoveries were within laboratory-specified limits.	
17. Were surrogate recoveries within laboratory control limits?	Yes
Comments: Surrogate recoveries were within laboratory control limits. The surrogates associated with samples CS-25, CS-26, BD-072309, and CS-27 were not recoverable due to sample dilution. This is acceptable per the method and required no further action.	
18. Was the number of equipment, trip, or field blanks collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	Yes
Comments: Field and trip blank samples were not submitted with this data set. The equipment blank samples Rinsate-1 and Rinsate-2 were submitted with the samples of this data set.	
19. Were the trip blank, field blank, and/or equipment blank samples free of analyte contamination?	Yes
Comments: There were not detections of the requested analytes in the Rinsate samples.	
20. Were the field duplicates collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	Yes
Comments: One field duplicate, BD-072309 was collected as a duplicate of sample CS-26 which is at least 10% the total number of samples.	
21. Were field duplicate RPD values within data validation QC limits (soil 0-50%, water 0-30%, or air 0-25%)?	Yes
Comments: Field duplicate RPD values were less than the upper RPD limit of 50% for soil samples as shown in the Field Duplicate Summary table at the end of this report.	
22. Were laboratory duplicate RPD values within laboratory-specified limits?	N/A
Comments: Laboratory duplicates were not prepared for this data set.	

DATA QUALIFICATION SUMMARY

Analyte	Field Sample ID	Lab Sample ID	Result (mg/kg)	Reviewer Qualifier	Reviewer Qualifier Reason
DRO	CS-25	0907447-01	6800	J	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	CS-25	0907447-01	ND (1000)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
DRO	CS-26	0907447-02	17000	J	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	CS-26	0907447-02	ND (1000)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
DRO	BD-072309	0907447-03	14000	J	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	BD-072309	0907447-03	ND (1000)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
DRO	CS-27	0907447-04	1800	J	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	CS-27	0907447-04	ND (500)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
DRO	CS-28	0907447-05	110	J	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	CS-28	0907447-05	ND (50)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.

FIELD DUPLICATE SUMMARY

Client Sample ID: CS-26 Field Duplicate Sample ID: BD-072309			
Analyte	**Laboratory Result (mg/kg)**	**Duplicate Result (mg/kg)**	**Relative Percent Difference (RPD)**
DRO	17000	14000	19.4%
Field duplicate RPD control limits should not exceed 30% for water, 50% for soil, or 25% for air or vapor as established by USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.			

HALL
ENVIRONMENTAL
ANALYSIS
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COVER LETTER

Monday, October 19, 2009

Gaurav Rajen
Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-0227
FAX (505) 722-0210

RE: Excavation Fan Out Area

Order No.: 0910112

Dear Gaurav Rajen:

Hall Environmental Analysis Laboratory, Inc. received 6 sample(s) on 10/7/2009 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc.

Date: *19-Oct-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area
Lab Order: 0910112

Lab ID: 0910112-01
Client Sample ID: CS-29
Collection Date: 10/1/2009 3:10:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/17/2009 1:00:39 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/17/2009 1:00:39 PM
Surr: DNOP	100	61.7-135		%REC	1	10/17/2009 1:00:39 PM

Lab ID: 0910112-02
Client Sample ID: CS-30
Collection Date: 10/1/2009 3:15:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/17/2009 1:35:43 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/17/2009 1:35:43 PM
Surr: DNOP	103	61.7-135		%REC	1	10/17/2009 1:35:43 PM

Lab ID: 0910112-03
Client Sample ID: CS-31
Collection Date: 10/1/2009 3:20:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	150	10		mg/Kg	1	10/17/2009 5:06:47 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/17/2009 5:06:47 PM
Surr: DNOP	78.7	61.7-135		%REC	1	10/17/2009 5:06:47 PM

Lab ID: 0910112-04
Client Sample ID: A-1
Collection Date: 10/2/2009 2:45:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/17/2009 2:11:03 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/17/2009 2:11:03 PM
Surr: DNOP	94.8	61.7-135		%REC	1	10/17/2009 2:11:03 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

1

Hall Environmental Analysis Laboratory, Inc.

Date: *19-Oct-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area

Lab Order: 0910112

Lab ID: 0910112-05
Client Sample ID: A-2

Collection Date: 10/2/2009 2:50:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/17/2009 2:46:08 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/17/2009 2:46:08 PM
Surr: DNOP	89.6	61.7-135		%REC	1	10/17/2009 2:46:08 PM

Lab ID: 0910112-06
Client Sample ID: A-3

Collection Date: 10/2/2009 2:55:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/17/2009 3:21:13 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/17/2009 3:21:13 PM
Surr: DNOP	82.6	61.7-135		%REC	1	10/17/2009 3:21:13 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area

Work Order: 0910112

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics											
Sample ID: MB-20277		*MBLK*				Batch ID:	**20277**	Analysis Date:	10/17/2009 5:31:02 AM		
Diesel Range Organics (DRO)	ND	mg/Kg	10								
Motor Oil Range Organics (MRO)	ND	mg/Kg	50								
Sample ID: LCS-20277		*LCS*				Batch ID:	**20277**	Analysis Date:	10/17/2009 6:06:23 AM		
Diesel Range Organics (DRO)	47.11	mg/Kg	10	50	0	94.2	64.6	116			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area **Work Order:** 0910112

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics											
Sample ID: MB-20277		*MBLK*				Batch ID:	**20277**	Analysis Date:	10/17/2009 5:31:02 AM		
Diesel Range Organics (DRO)	ND	mg/Kg	10								
Motor Oil Range Organics (MRO)	ND	mg/Kg	50								
Sample ID: LCS-20277		*LCS*				Batch ID:	**20277**	Analysis Date:	10/17/2009 6:06:23 AM		
Diesel Range Organics (DRO)	47.11	mg/Kg	10	50	0	94.2	64.6	116			
Sample ID: LCSD-20277		*LCSD*				Batch ID:	**20277**	Analysis Date:	10/17/2009 6:41:48 AM		
Diesel Range Organics (DRO)	44.58	mg/Kg	10	50	0	89.2	64.6	116	5.52	17.4	

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name **WESTERN REFINING GALLU**

Date Received: **10/7/2009**

Work Order Number **0910112**

Received by: ARS

Sample ID labels checked by: TS
Initials

Checklist completed by: _____ 10/7/09
Signature Date

Matrix:

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☑	No ☐	N/A ☐	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		Number of preserved bottles checked for pH:
Water - VOA vials have zero headspace?	No VOA vials submitted ☑	Yes ☐	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	_____
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	*<2 >12 unless noted below.*
Container/Temp Blank temperature?	**5.9°**	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

Client: WESTERN - REFINING
GALLUP REFINERY
Mailing Address: RT 3 BOX 9
GALLUP NM 87301
Phone #: 5057223833
email or Fax#: 5057220210
QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)
☐ Other
☐ EDD (Type)

Turn-Around Time:
☐ Standard ☐ Rush

Project Name: EVACUATION FAN OUT AREA
Project #:
Project Manager: GAURAV, RAJEN
Sampler: LORETTA, BECK, ALVIN
On Ice: ☑ Yes ☐ No
Sample Temperature: 5.9

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0910112	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
10-01-09	1510	Soil	CS-29	8oz Jar 2	NONE	1			X													
10-01-09	1515	↓	CS-30	8oz Jar 2	NONE	2			X													
10-01-09	1520	↓	CS-31	8oz Jar 2	NONE	3			X													
10-02-09	1445		A-1	8oz Jar 2	NONE	4			X													
10-02-09	1450		A-2	8oz Jar 2	NONE	5			X													
10-02-09	1455		A-3	8oz Jar 2	NONE	6			X													

Date	Time	Relinquished by:	Received by:	Date	Time
10-06-09	12:00	[signature]	[signature]		
Date:	Time:	Relinquished by:	Received by:	Date	Time
			[signature]	9:15 10/7/09	

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Hall Environmental Analysis Laboratory, Inc.

18-Dec-09

Lab Order: 0910112
Client: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Instrument Run ID	QC Batch ID	Prep Date	Analysis Date
0910112-01A	CS-29	10/1/2009 3:10:00 PM	Soil	EPA Method 8015B: Diesel Range Organics	FID(17A)_091017A	20277	10/9/2009	10/17/2009
0910112-02A	CS-30	10/1/2009 3:15:00 PM		EPA Method 8015B: Diesel Range Organics	FID(17A)_091017A	20277	10/9/2009	10/17/2009
0910112-03A	CS-31	10/1/2009 3:20:00 PM		EPA Method 8015B: Diesel Range Organics	FID(17A)_091017A	20277	10/9/2009	10/17/2009
0910112-04A	A-1	10/2/2009 2:45:00 PM		EPA Method 8015B: Diesel Range Organics	FID(17A)_091017A	20277	10/9/2009	10/17/2009
0910112-05A	A-2	10/2/2009 2:50:00 PM		EPA Method 8015B: Diesel Range Organics	FID(17A)_091017A	20277	10/9/2009	10/17/2009
0910112-06A	A-3	10/2/2009 2:55:00 PM		EPA Method 8015B: Diesel Range Organics	FID(17A)_091017A	20277	10/9/2009	10/17/2009

Tier II Data Validation Report Summary

Client: Western Refining Company, Gallup	Laboratory: Hall Environmental Analysis Laboratory, Inc.
Project Name: October 2009 Sampling Event	Sample Matrix: Soil
Project Number: 697-017-002	Sample Start Date: October 1, 2009
Date Validated: December 18, 2009	Sample End Date: October 2, 2009
Parameters Included: Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by Environmental Protection Agency (EPA) Method 8015B	
Laboratory Project IDs: 0910112	
Data Validator: Nella Dagnillo, Chemical Engineer, E.I.T.	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services group on the analytical data report package generated by Hall Environmental Analysis Laboratory, Inc. evaluating samples from the Western Refining Company site located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values of samples from laboratory duplicate pairs. Laboratory accuracy was established by reviewing the demonstrated percent recoveries of laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) to verify that none of the data were biased. Method compliance was established by reviewing holding times, detection limits, surrogate recoveries, method blanks, and the LCS and LCSD percent recoveries against method specific requirements. Completeness was evaluated by determining the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody, laboratory analytical methods, and any other necessary documents associated with this analytical data set.

Data were evaluated in general accordance with validation criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-08-01, June 2008 with additional reference to USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999. Review of duplicates is conducted in accordance with USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
CS-29	0910112-01
CS-30	0910112-02
CS-31	0910112-03
A-1	0910112-04
A-2	0910112-05
A-3	0910112-06

Tier II Data Validation Report

The samples were analyzed for client-specified analytes. Chain-of-custody (COC) completeness is included in Section #3. The laboratory data were reviewed to evaluate compliance with the required methods and the quality of the reported data. A leading check mark (✓) indicates that the referenced data were deemed acceptable. A preceding crossed circle (⊗) signifies problems with the referenced data that may have warranted attaching qualifiers to the data.

- ✓ Data Completeness
- ✓ COC Documentation
- ✓ Holding Times and Preservation
- ✓ Laboratory Blanks
- ✓ System Monitoring Compounds (i.e. Surrogates)
- ✓ Laboratory Control Samples/Laboratory Control Sample Duplicates (LCS/LCSD)

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Section #2.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data which are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R, the data may be used for site evaluation, with the reasons for qualification being given consideration when interpreting sample concentrations. Data points which are assigned an R qualifier should not be used for any site evaluation purposes. Data were not qualified during this validation.

Data Completeness

The analyses appeared to be performed as requested on the chain-of-custody records. The associated samples were received by the laboratory and appeared to be analyzed properly. No data points were rejected. The data completeness measure for this data package is 100% and is acceptable.

VALIDATION CRITERIA CHECKLIST	
1. Was the report free of any non-conformances related to the analytical data identified by the laboratory? Comments: The laboratory did not identify any non-conformances related to this data set.	Yes
2. Were data qualification flags or any other notes used by the laboratory? If yes, define. Comments: The laboratory did not use data qualification flag with this data set.	No
3. Were sample COC forms complete? Comments: The COC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.	Yes
4. Were detection limits in accordance with the QAPP, permit, or method, or indicated as acceptable by the Tier I validator? Comments: Detection limits were reviewed and appeared to be acceptable. Dilutions were not required for the samples and analyses in this data set.	Yes
5. Were the requested analytical methods in compliance with the QAPP, permit, or COC? Comments: The requested analytical methods were in compliance with what was requested on the COC.	Yes
6. Were samples received in good condition within method specified requirements? Comments: Samples were received intact and in good condition. Cooler temperatures were within the 4°C +/- 2°C acceptable range at 5.9°C, as noted in the Sample Receipt Checklist.	Yes
7. Were samples analyzed within method specified or technical holding times? Comments: Samples were analyzed within the acceptable hold time.	Yes
8. Were reported units appropriate for the associated sample matrix/matrices and method(s) of analyses? Comments: Analyte concentrations were reported in units of mg/kg. The reported units are acceptable for the soil matrix.	Yes
9. Do the laboratory reports include all constituents requested to be reported as indicated by the Tier I validator? Comments: As indicated on the Tier I data validation, laboratory reported constituents were in accordance with those requested.	Yes
10. Was there indication from the laboratory that the initial or continued calibration verification results were within acceptable limits? Comments: Initial and continuing calibration data were not included as part of this data set; however, these data are assumed to be acceptable as the laboratory did not note that any calibration verification results were outside acceptable limits.	N/A
11. Was the total number of method blank samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method? Comments: Method blanks were prepared on a greater than 5% basis.	Yes
12. Were method blank samples free of analyte contamination? Comments: Method blank detections were not reported for this data set.	Yes
13. Was the total number of matrix spike samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method? Comments: Matrix spike samples were not prepared for this data set.	No

VALIDATION CRITERIA CHECKLIST	
14. Were MS/MSD percent recoveries and MS/MSD RPD values within data validation or laboratory QC limits? Comments: Matrix spike samples were not prepared for this data set.	N/A
15. Was the total number of laboratory control samples analyzed equal to at least 5% of the total number of samples, or analyzed as required by the method? Comments: Laboratory control samples were reported on a greater than 5% basis. Laboratory control samples were not prepared for motor oil analyses. However, the diesel range organics LCS/LCSD were used to evaluate the accuracy of the motor oil analyses.	Yes
16. Were LCS/LCSD percent recoveries and LCS/LCSD RPD values within laboratory QC limits? Comments: Laboratory control recoveries were within laboratory-specified limits.	Yes
17. Were surrogate recoveries within laboratory control limits? Comments: Surrogate recoveries were within laboratory control limits.	Yes
18. Was the number of equipment, trip, or field blanks collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator? Comments: Blank samples were not submitted with this data set.	No
19. Were the trip blank, field blank, and/or equipment blank samples free of analyte contamination? Comments: Blank samples were not submitted with this data set.	N/A
20. Were the field duplicates collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator? Comments: Duplicate samples were not submitted with this data set.	No
21. Were field duplicate RPD values within data validation QC limits (soil 0-50%, water 0-30%, or air 0-25%)? Comments: Duplicate samples were not submitted with this data set.	N/A
22. Were laboratory duplicate RPD values within laboratory-specified limits? Comments: Laboratory duplicates were not prepared for this data set.	N/A

HALL
ENVIRONMENTAL
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LABORATORY

COVER LETTER

Monday, August 30, 2010

Ed Riege
Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-3833
FAX (505) 722-0210

RE: Far-out Area

Order No.: 1008A31

Dear Ed Riege:

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 8/25/2010 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology.

Please do not hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Laboratory Manager

NM Lab # NM9425 NM0901
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc.

Date: *30-Aug-10*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	CS-35
Lab Order:	1008A31	**Collection Date:**	8/25/2010 10:30:00 AM
Project:	Far-out Area	**Date Received:**	8/25/2010
Lab ID:	1008A31-01	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **JB**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/28/2010 11:24:24 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/28/2010 11:24:24 PM
Surr: DNOP	105	61.7-135		%REC	1	8/28/2010 11:24:24 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: Far-out Area **Work Order:** 1008A31

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics											
Sample ID: MB-23548		*MBLK*				Batch ID:	**23548**	Analysis Date:		8/28/2010 2:18:51 PM	
Diesel Range Organics (DRO)	ND	mg/Kg	10								
Motor Oil Range Organics (MRO)	ND	mg/Kg	50								
Sample ID: LCS-23548		*LCS*				Batch ID:	**23548**	Analysis Date:		8/28/2010 2:52:59 PM	
Diesel Range Organics (DRO)	42.58	mg/Kg	10	50	0	85.2	64.6	116			
Sample ID: LCSD-23548		*LCSD*				Batch ID:	**23548**	Analysis Date:		8/28/2010 3:27:06 PM	
Diesel Range Organics (DRO)	44.33	mg/Kg	10	50	0	88.7	64.6	116	4.04	17.4	

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	NC	Non-Chlorinated
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name WESTERN REFINING GALLU

Date Received: 8/25/2010

Work Order Number 1008A31

Received by: AMG

Checklist completed by: _____ Signature 8/25/10 Date

Sample ID labels checked by: _____ Initials

Matrix:

Carrier name: Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		Number of preserved bottles checked for pH:
Water - VOA vials have zero headspace?	No VOA vials submitted ☑	Yes ☐	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	*<2 >12 unless noted below.*
Container/Temp Blank temperature?	**7.3°**	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

Client: Western Refining

Mailing Address: Route 3 Box 7
Gallup, NM 87301

Phone #: (505) 722-3833

email or Fax#: (505) 722-0210

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☒ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☑ Rush 3 day

Project Name: Fan-out Area

Project #: 697-039-001

Project Manager: Ed Riege

Sampler: G. Price / A. Dorsey

On Ice: ☒ Yes ☐ No

Sample Temperature: 7.3

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
9/25/10	10:30	Soil	CS-35	1-9 oz	ice	1008A31			X													

Date	Time	Relinquished by:	Received by:	Date	Time
9/25/10	4:18	[signature]	Ashley M Gallegos	9/25/10	16:18
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Wednesday, August 25, 2010

Ed Riege
Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-0227
FAX (505) 722-0210

RE: Fan-Out Area

Order No.: 1008920

Dear Ed Riege:

Hall Environmental Analysis Laboratory, Inc. received 13 sample(s) on 8/24/2010 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology.

Please do not hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Laboratory Manager

NM Lab # NM9425 NM0901
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc. **Date:** *25-Aug-10*

CLIENT: Western Refining Southwest, Gallup
Project: Fan-Out Area
Lab Order: 1008920

CASE NARRATIVE

Analytical Comments for METHOD 8015DRO_S, SAMPLE 1008920-08A: DNOP not recovered due to dilution

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-10*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	CS-36
Lab Order:	1008920	**Collection Date:**	8/23/2010 10:00:00 AM
Project:	Fan-Out Area	**Date Received:**	8/24/2010
Lab ID:	1008920-01	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **JB**
Diesel Range Organics (DRO)	21	10		mg/Kg	1	8/24/2010 8:23:27 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/24/2010 8:23:27 PM
Surr: DNOP	104	61.7-135		%REC	1	8/24/2010 8:23:27 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-10*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	CS-38
Lab Order:	1008920	**Collection Date:**	8/23/2010 10:25:00 AM
Project:	Fan-Out Area	**Date Received:**	8/24/2010
Lab ID:	1008920-02	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/24/2010 8:57:17 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/24/2010 8:57:17 PM
Surr: DNOP	103	61.7-135		%REC	1	8/24/2010 8:57:17 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-10*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	BD1
Lab Order:	1008920	**Collection Date:**	8/23/2010
Project:	Fan-Out Area	**Date Received:**	8/24/2010
Lab ID:	1008920-03	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **JB**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/24/2010 9:31:09 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/24/2010 9:31:09 PM
Surr: DNOP	105	61.7-135		%REC	1	8/24/2010 9:31:09 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-10*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	CS-39
Lab Order:	1008920	**Collection Date:**	8/23/2010 10:40:00 AM
Project:	Fan-Out Area	**Date Received:**	8/24/2010
Lab ID:	1008920-04	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **JB**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/24/2010 10:05:00 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/24/2010 10:05:00 PM
Surr: DNOP	105	61.7-135		%REC	1	8/24/2010 10:05:00 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-10*

CLIENT: Western Refining Southwest, Gallup
Lab Order: 1008920
Project: Fan-Out Area
Lab ID: 1008920-05

Client Sample ID: CS-39 MS/MSD
Collection Date: 8/23/2010 10:40:00 AM
Date Received: 8/24/2010
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
						Analyst: JB
EPA METHOD 8015B: DIESEL RANGE ORGANICS						
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/24/2010 10:38:52 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/24/2010 10:38:52 PM
Surr: DNOP	105	61.7-135		%REC	1	8/24/2010 10:38:52 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-10*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	CS-40
Lab Order:	1008920	**Collection Date:**	8/23/2010 10:50:00 AM
Project:	Fan-Out Area	**Date Received:**	8/24/2010
Lab ID:	1008920-06	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **JB**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/25/2010 12:54:16 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/25/2010 12:54:16 AM
Surr: DNOP	106	61.7-135		%REC	1	8/25/2010 12:54:16 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-10*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	CS-42
Lab Order:	1008920	**Collection Date:**	8/23/2010 11:00:00 AM
Project:	Fan-Out Area	**Date Received:**	8/24/2010
Lab ID:	1008920-07	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **JB**
Diesel Range Organics (DRO)	21	10		mg/Kg	1	8/25/2010 1:28:06 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/25/2010 1:28:06 AM
Surr: DNOP	108	61.7-135		%REC	1	8/25/2010 1:28:06 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-10*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	CS-41
Lab Order:	1008920	**Collection Date:**	8/23/2010 11:10:00 AM
Project:	Fan-Out Area	**Date Received:**	8/24/2010
Lab ID:	1008920-08	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	210	100		mg/Kg	10	8/25/2010 4:50:07 AM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	8/25/2010 4:50:07 AM
Surr: DNOP	0	61.7-135	S	%REC	10	8/25/2010 4:50:07 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-10*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	CS-37
Lab Order:	1008920	**Collection Date:**	8/23/2010 12:10:00 PM
Project:	Fan-Out Area	**Date Received:**	8/24/2010
Lab ID:	1008920-09	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	36	10		mg/Kg	1	8/25/2010 6:19:32 AM
Motor Oil Range Organics (MRO)	59	50		mg/Kg	1	8/25/2010 6:19:32 AM
Surr: DNOP	106	61.7-135		%REC	1	8/25/2010 6:19:32 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-10*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	CS-33
Lab Order:	1008920	**Collection Date:**	8/23/2010 11:40:00 AM
Project:	Fan-Out Area	**Date Received:**	8/24/2010
Lab ID:	1008920-10	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	58	10		mg/Kg	1	8/25/2010 2:35:46 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/25/2010 2:35:46 AM
Surr: DNOP	106	61.7-135		%REC	1	8/25/2010 2:35:46 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-10*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	BD2
Lab Order:	1008920	**Collection Date:**	8/23/2010
Project:	Fan-Out Area	**Date Received:**	8/24/2010
Lab ID:	1008920-11	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	76	10		mg/Kg	1	8/25/2010 3:09:22 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/25/2010 3:09:22 AM
Surr: DNOP	104	61.7-135		%REC	1	8/25/2010 3:09:22 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-10*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	CS-32
Lab Order:	1008920	**Collection Date:**	8/23/2010 11:50:00 AM
Project:	Fan-Out Area	**Date Received:**	8/24/2010
Lab ID:	1008920-12	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **JB**
Diesel Range Organics (DRO)	55	10		mg/Kg	1	8/25/2010 3:42:56 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/25/2010 3:42:56 AM
Surr: DNOP	109	61.7-135		%REC	1	8/25/2010 3:42:56 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-10*

CLIENT: Western Refining Southwest, Gallup
Lab Order: 1008920
Project: Fan-Out Area
Lab ID: 1008920-13

Client Sample ID: CS-34
Collection Date: 8/23/2010 12:00:00 PM
Date Received: 8/24/2010
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
						Analyst: JB
EPA METHOD 8015B: DIESEL RANGE ORGANICS						
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/25/2010 4:16:32 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/25/2010 4:16:32 AM
Surr: DNOP	107	61.7-135		%REC	1	8/25/2010 4:16:32 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: Fan-Out Area

Work Order: 1008920

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics											
Sample ID: 1008920-05AMSD		*MSD*				Batch ID:	**23513**	Analysis Date:		8/24/2010 11:46:33 PM	
Diesel Range Organics (DRO)	49.96	mg/Kg	10	50	9.529	80.9	67.4	117	1.64	17.4	
Sample ID: MB-23513		*MBLK*				Batch ID:	**23513**	Analysis Date:		8/24/2010 6:41:38 PM	
Diesel Range Organics (DRO)	ND	mg/Kg	10								
Motor Oil Range Organics (MRO)	ND	mg/Kg	50								
Sample ID: LCS-23513		*LCS*				Batch ID:	**23513**	Analysis Date:		8/24/2010 7:15:44 PM	
Diesel Range Organics (DRO)	43.25	mg/Kg	10	50	0	86.5	64.6	116			
Sample ID: LCSD-23513		*LCSD*				Batch ID:	**23513**	Analysis Date:		8/24/2010 7:49:35 PM	
Diesel Range Organics (DRO)	42.58	mg/Kg	10	50	0	85.2	64.6	116	1.56	17.4	
Sample ID: 1008920-05AMS		*MS*				Batch ID:	**23513**	Analysis Date:		8/24/2010 11:12:43 PM	
Diesel Range Organics (DRO)	50.79	mg/Kg	10	50	9.529	82.5	67.4	117			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	NC	Non-Chlorinated
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name WESTERN REFINING GALLU

Date Received: 8/24/2010

Work Order Number 1008920

Received by: AMF

Sample ID labels checked by: _____ Initials

Checklist completed by: _____ Signature 8/24/10 Date

Matrix: Carrier name Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☑	No ☐	N/A ☐	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		Number of preserved bottles checked for pH:
Water - VOA vials have zero headspace?	No VOA vials submitted ☑	Yes ☐	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	_____
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	*<2 >12 unless noted below.*
Container/Temp Blank temperature?	**5.3°**	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

Client: Western Refining

Mailing Address: Route 3 Box 7
Gallup, NM 87301

Phone #: (505) 722-3833

email or Fax#: (505) 722-0210

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☐ Standard ☑ Rush 24 hour

Project Name: Fan-Out Area

Project #: 697-039-001

Project Manager: Ed Riege

Sampler: G. Price, A. Dorsey

On Ice: ☒ Yes ☐ No

Sample Temperature: 5.3

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1008920	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
8/23	10:00	Soil	CS-36	1-9 oz	ice	1			X													
8/23	10:25	Soil	CS-38	1-9 oz	ice	2			X													
8/23		Soil	BD1	1-9 oz	ice	3			X													
8/23	10:40	Soil	CS-39	1-9 oz	ice	4			X													
8/23	10:40	Soil	CS-39 MS/MSD	1-9 oz	ice	5			X													
8/23	10:50	Soil	CS-40	1-9 oz	ice	6			X													
8/23	11:00	Soil	CS-42	1-9 oz	ice	7			X													
8/23	11:10	Soil	CS-41	1-9 oz	ice	8			X													
8/23	~~11:25~~	Soil	CS-37 12:10	1-9 oz	ice	9			X													
8/23	11:40	Soil	CS-33	1-9 oz	ice	10			X													
8/23		Soil	BD2	1-9 oz	ice	11			X													
8/23	11:50	Soil	CS-32	1-9 oz	ice	12			X													

Date:	Time:	Relinquished by:	Received by:	Date	Time
8/23/10	6:00	Grant Price	[signature]	8/23/10	6:01
Date:	Time:	Relinquished by:	Received by:	Date	Time
			[signature]	8/24/10	8:30

Remarks: Please call Grant Price @ 307-399-0890 as soon as preliminary results are ready.

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: Western Refining

Mailing Address: Route 3 Box 7
Gallup, NM 87301

Phone #: (505) 722-3833

email or Fax#: (505) 722-0210

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☐ Standard ☑ Rush 24 hour

Project Name: Far-out Area

Project #: 697-039-001

Project Manager: Ed Riege

Sampler: G Price, A. Dorsey

On Ice: ☑ Yes ☐ No

Sample Temperature: 5.3

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1008920	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)				Air Bubbles (Y or N)
		Soil	~~CS-35~~	1-902	ice				X												
8/23	12:00	Soil	CS-34	1-902	ice	13			X												
			End of Record.																		

Date:	Time:	Relinquished by:	Received by:	Date	Time
8/23/10	6:00	Grant Price	[signature]	8/23/10	6:01
Date:	Time:	Relinquished by:	Received by:	Date	Time
			[signature]	8/24/10	8:30

Remarks: Please call Grant Price @ 307-399-0890 as soon as preliminary results are ready.

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Tier II Data Validation Report Summary

Client: Western Refining Company, Gallup	Laboratory: Hall Environmental Analysis Laboratory, Inc.
Project Name: Gallup-2010 Environmental Compliance	Sample Matrix: Soil
Project Number: 697-039-001	Sample Start Date: August 23, 2010
Date Validated: September 8, 2010	Sample End Date: August 25, 2010
Parameters Included: Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by Environmental Protection Agency (EPA) Method 8015B	
Laboratory Project IDs: 1008920 and 1008A31	
Data Validator: Aubrey L. Farris, E.I.T., Civil Engineer	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services group on the analytical data report package generated by Hall Environmental Analysis Laboratory, Inc. evaluating samples from the Western Refining Company site located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values of samples from field duplicate pairs and laboratory duplicate pairs. Laboratory accuracy was established by reviewing the demonstrated percent recoveries of matrix spike (MS) and matrix spike duplicate (MSD) samples, and of laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) to verify that none of the data were biased. Method compliance was established by reviewing holding times, detection limits, surrogate recoveries, method blanks, and the LCS and LCSD percent recoveries against method specific requirements. Completeness was evaluated by determining the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody, laboratory analytical methods, and any other necessary documents associated with this analytical data set.

Data were evaluated in general accordance with validation criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-08-01, June 2008 with additional reference to USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999. Review of duplicates is conducted in accordance with USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.

Tier II Data Validation Report Summary

SAMPLE NUMBERS TABLES

Data Set 1008920

Client Sample ID	Laboratory Sample Number
CS-36	1008920-01
CS-38	1008920-02
BD1	1008920-03
CS-39	1008920-04
CS-39 MS/MSD	1008920-05
CS-40	1008920-06
CS-42	1008920-07
CS-41	1008920-08
CS-37	1008920-09
CS-33	1008920-10
BD2	1008920-11
CS-32	1008920-12
CS-34	1008920-13

Data Set 1008A31

Client Sample ID	Laboratory Sample Number
CS-35	1008A31-01

Tier II Data Validation Report

The samples were analyzed for client-specified analytes. Chain-of-custody (CoC) completeness is included in Section #3. The laboratory data were reviewed to evaluate compliance with the required methods and the quality of the reported data. A leading check mark (✓) indicates that the referenced data were deemed acceptable. A preceding crossed circle (⊗) signifies problems with the referenced data that may have warranted attaching qualifiers to the data.

- ✓ Data Completeness
- ✓ CoC Documentation
- ✓ Holding Times and Preservation
- ✓ Laboratory Blanks
- ✓ System Monitoring Compounds (i.e. Surrogates)
- ✓ Laboratory Control Samples/Laboratory Control Sample Duplicates (LCS/LCSD)
- ✓ Matrix Spike/Matrix Spike Duplicates (MS/MSD)
- ✓ Field Duplicates

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Section #2.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data which are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R, the data may be used for site evaluation, with the reasons for qualification being given consideration when interpreting sample concentrations. Data points which are assigned an R qualifier should not be used for any site evaluation purposes. Data were not qualified during this validation.

Data Completeness

The analyses appeared to be performed as requested on the chain-of-custody records. The associated samples were received by the laboratory and appeared to be analyzed properly. No data points were rejected. The data completeness measure for this data package is 100% and is acceptable.

VALIDATION CRITERIA CHECKLIST	
1. Was the report free of any non-conformances related to the analytical data identified by the laboratory?	No
Comments: The laboratory identified the following non-conformances related to data set 1008920. Analytical Comments for Method 8015DRO_S, Sample 1008920-08A: DNOP not recovered due to dilution.	
2. Were data qualification flags or any other notes used by the laboratory? If yes, define.	No
Comments: The laboratory did not use data qualification flag with this data set.	
3. Were sample CoC forms complete?	Yes
Comments: The CoC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.	
4. Were detection limits in accordance with the QAPP, permit, or method, or indicated as acceptable by the Tier I validator?	Yes
Comments: Detection limits were reviewed and appeared to be acceptable. Dilutions were not required for the samples and analyses in this data set with the following exception. Dilutions of 10 times were applied to sample CS-41 by Method 8015B in data set 1008920. The final usability of the data with respect to detection limits and dilutions will be determined by the project staff.	
5. Were the requested analytical methods in compliance with the QAPP, permit, or CoC?	Yes
Comments: The requested analytical methods were in compliance with what was requested on the CoC.	
6. Were samples received in good condition within method specified requirements?	Yes
Comments: Samples were received intact and in good condition. Cooler temperatures were within and outside the 4°C +/- 2°C acceptable range at 5.3°C (data set 1008920) and 7.3°C (data set 1008A31), as noted in the Sample Receipt Checklist. The cooler temperature that was above 6°C was judged as acceptable since the samples were delivered to the lab directly after collection and had not had sufficient time to cool.	
7. Were samples analyzed within method specified or technical holding times?	Yes
Comments: Samples were analyzed within the acceptable hold time.	
8. Were reported units appropriate for the associated sample matrix/matrices and method(s) of analyses?	Yes
Comments: Analyte concentrations were reported in units of mg/kg. The reported units are acceptable for the soil matrix.	
9. Do the laboratory reports include all constituents requested to be reported as indicated by the Tier I validator?	Yes
Comments: The laboratory reported constituents were in accordance with those requested.	
10. Was there indication from the laboratory that the initial or continued calibration verification results were within acceptable limits?	N/A
Comments: Initial and continuing calibration data were not included as part of this data set; however, these data are assumed to be acceptable as the laboratory did not note that any calibration verification results were outside acceptable limits.	
11. Was the total number of method blank samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Method blanks were prepared on a greater than 5% basis.	
12. Were method blank samples free of analyte contamination?	Yes
Comments: Method blank detections were not reported for this data set.	

VALIDATION CRITERIA CHECKLIST	
13. Was the total number of matrix spike samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	No
Comments: The matrix spike samples for batch 23513 were prepared from sample CS-39 of data set 1008920. Matrix spike samples were not prepared for batch 23548 of data set 1008A31. The laboratory control sample results were used to evaluate the accuracy and precision of this data.	
14. Were MS/MSD percent recoveries and MS/MSD RPD values within data validation or laboratory QC limits?	Yes
Comments: The MS and MSD recoveries and RPD values were within laboratory-specified limits.	
15. Was the total number of laboratory control samples analyzed equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Laboratory control samples were reported on a greater than 5% basis. Laboratory control samples were not prepared for motor oil analyses. However, the diesel range organics LCS/LCSD were used to evaluate the accuracy of the motor oil analyses.	
16. Were LCS/LCSD percent recoveries and LCS/LCSD RPD values within laboratory QC limits?	Yes
Comments: Laboratory control recoveries were within laboratory-specified limits.	
17. Were surrogate recoveries within laboratory control limits?	Yes
Comments: Surrogate recoveries were within laboratory control limits.	
18. Was the number of equipment, trip, or field blanks collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	No
Comments: Blank samples were not submitted with this data set.	
19. Were the trip blank, field blank, and/or equipment blank samples free of analyte contamination?	N/A
Comments: Blank samples were not submitted with this data set.	
20. Were the field duplicates collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	Yes
Comments: Two field duplicates, BD1 was collected as a duplicate of sample CS-38 and BD2 was collected as a duplicated of CS-33.	
21. Were field duplicate RPD values within data validation QC limits (soil 0-50%, water 0-30%, or air 0-25%)?	Yes
Comments: Field duplicate RPD values were less than the upper RPD limit of 50% for soil samples. Field duplicate RPD values are presented in the Field Duplicate Summary Table at the end of this report. The results for CS-38 and BD1 were undetected; therefore, not RPD could be calculated.	
22. Were laboratory duplicate RPD values within laboratory-specified limits?	N/A
Comments: Laboratory duplicates were not prepared for this data set.	

FIELD DUPLICATE SUMMARY

Client Sample ID: CS-33 Field Duplicate Sample ID: BD2			
Analyte	Laboratory Result (mg/Kg)	Duplicate Result (mg/Kg)	Relative Percent Difference (RPD)
Diesel Range Organics (DRO)	58	76	26.9%
Field duplicate RPD control limits should not exceed 30% for water, 50% for soil, or 25% for air or vapor as established by USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.			

APPENDIX E

NMED NOTICE OF DISAPPROVAL

MAY 2008 RAILROAD RACK LAGOON FAN-OUT AREA EXCAVATION WORK PLAN

NEW MEXICO ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

BILL RICHARDSON
Governor

DIANE DENISH
Lieutenant Governor

2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Phone (505) 476-6000 Fax (505) 476-6030
www.nmenv.state.nm.us

RON CURRY
Secretary

JON GOLDSTEIN
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

July 22, 2008

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

RE: NOTICE OF DISAPPROVAL
RAILROAD RACK LAGOON FAN-OUT AREA
EXCAVATION WORK PLAN
WESTERN REFINING SOUTHWEST, INC. GALLUP REFINERY
EPA ID #: NMD000333211
HWB-GRCC-07-002

Dear Mr. Riege:

The New Mexico Environment Department (NMED) has reviewed Western Refining Southwest, Inc. Gallup Refinery's (the Permittee) *Railroad Rack Lagoon Fan-out Area Excavation Work Plan* (Excavation Plan), dated May 2, 2008 and hereby issues this Notice of Disapproval (NOD). NMED has the following comments.

Comment 1

In the third paragraph of the Permittee's cover letter dated May 12, 2008, the Permittee states "[f]or example, in areas in which the sampled materials had no detectable levels of contaminants at 3 feet, we plan to excavate to depths of 5 feet. Similarly in the few areas at which there is contamination at greater depths, we plan to excavate to far greater depths than which we found no detectable levels of contaminants. Similarly, you will notice that at point L1 we found no detectable levels of contamination; yet, on a conservative basis, we plan to excavate an areal extent far more extensive than the clean point L1 would indicate."

Location L-1 was not found in Figure 1. The Permittee must revise the Excavation Plan to cite the correct reference or submit a revised Figure 1 to identify the location of point L1.

Comment 2

In the "Completed Field Work" Section of the Excavation Plan, the Permittee references test pit location B-9; however, this location is not found in Figure 1. The Permittee must provide an additional figure to the Excavation Plan that identifies all the original soil boring locations as identified in Attachment 1 of NMED's September 19, 2006 *Approval with Modifications Work Plan for Investigation of the Overflow Ditch and Fan-Out of Area Railroad Rack Lagoon, SWMU #8.*

Comment 3

The Permittee states in the Excavation Plan on page one, paragraph 3, that soil sampled at location B-9 was below the diesel range organics (DRO) clean-up standard of 890 mg/kg. This conflicts with information provided in the October 2, 2007 letter from Trihydro to Jim Lieb which states that the center sample of the excavation at B-9 at three feet (ft) below ground surface (bgs) exceeded the DRO clean-up standard of 890 mg/kg. A hand auger was then used to collect an additional center sample at B-9 at five ft and detected DRO concentrations were below 890 mg/kg.

It is not clear if the contaminated soil detected at B-9 from the three foot to five foot interval has been removed. The Permittee must revise the Excavation Plan to clarify this discrepancy and explain if the contaminated soil at B-9 at the three ft to five ft depth interval has been removed. If the contamination at B-9 has not been removed, the Excavation Plan must address removal of the contaminated soil.

Comment 4

From review of the Excavation Plan and Figure 1, the Permittee has not delineated the contamination in the vicinity of location B-8 to the southwest, approximately six feet directly west of borehole M, in the outflow ditch between sample locations B-8 and B-9. Because soil at locations B-8 and possibly B-9 contain DRO concentrations above 890 mg/kg, it is likely that similar contamination is present in soils in the overflow ditch between B-8 and B-9.

The Permittee must revise the Excavation Plan to propose additional sampling and analyses of soils located between B-8 and B-9. A figure must be provided depicting the proposed sampling locations. This location will also satisfy the need for step-out sampling directly west of borehole M. Depending on the sample analytical results, additional excavation may be needed in the vicinity of between B-8 and B-9.

Comment 5

The Excavation Plan does not address confirmation of the complete removal of soils containing DRO concentrations greater than the applicable screening level. The Permittee must revise the Excavation Plan to discuss confirmation sampling and include a figure depicting the proposed frequency of collection of confirmation samples. The Permittee must also list what chemical analyses will be performed on the confirmation samples.

Comment 6

On page three and four of the Excavation Plan, the Permittee states that the excavated soil will be disposed of in Gallup's Northeast Oil Conservation Division (OCD) Land Farm. The Permittee must obtain permission from OCD prior to disposing the soil in the Landfarm. Both NMED and OCD must be informed of the final soil disposal location. The Permittee must revise the Excavation Plan to state that the Permittee will obtain approval from OCD prior to disposing of the excavated soil in the OCD Landfarm.

Comment 7

As a general comment, NMED recommends the Permittee wait until the results of confirmation sample analyses indicate the DRO contamination is below 890 mg/kg before backfilling the remedial excavation.

The Permittee must address all comments contained in this NOD and submit a revised Excavation Plan. The revised Excavation Plan must be accompanied with a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments. The Permittee must also submit an electronic copy of the Revised Excavation Plan with all edits and modifications shown in redline-strikeout format. The revised Excavation Plan is due to NMED on or before September 22, 2008.

If you have any questions regarding this letter please contact Hope Monzeglio of my staff at (505) 476-6045.

Sincerely,

James P. Bearzi
Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
H. Monzeglio, NMED HWB
W. Price, OCD
G. Ragen, GRCC
File: GRCC 2008 and Reading
HWB-GRCC-07-002

APPENDIX F

NMED APPROVAL WITH DIRECTION

SEPTEMBER 2008 RAILROAD RACK LAGOON FAN-OUT AREA EXCAVATION WORK PLAN

NEW MEXICO ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

BILL RICHARDSON
Governor

DIANE DENISH
Lieutenant Governor

2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Phone (505) 476-6000 Fax (505) 476-6030
www.nmenv.state.nm.us

RON CURRY
Secretary

JON GOLDSTEIN
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

December 11, 2008

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

RE: APPROVAL WITH DIRECTION
RAILROAD RACK LAGOON FAN-OUT AREA EXCAVATION WORK PLAN
WESTERN REFINING SOUTHWEST, INC. GALLUP REFINERY
EPA ID #: NMD000333211
HWB-GRCC-07-002

Dear Mr. Riege:

The New Mexico Environment Department (NMED) has reviewed Western Refining Southwest, Inc. Gallup Refinery's (the Permittee) *Railroad Rack Overflow Ditch and Fan-out Area Soil Investigation Work Plan* (Work Plan), dated September 17, 2008. This Work Plan was submitted in response to NMED's July 22, 2008 *Notice of Disapproval Railroad Rack Lagoon Fan-out Area Excavation Work Plan.* NMED hereby issues this Approval with Direction. The Permittee must adhere to all requirements established within this letter.

Comment 1

In Section 2.1.2 (Vertical Delineation), page 2-2, the Permittee states "[e]xisting borehole B8(B8-NEW-SE-S1) was drilled to a depth of 23 ft-bgs to vertically delineate the extent of DRO contamination. This borehole was selected for vertical delineation because the previous sampling event showed that this borehole had a DRO exceedance of 2,600 mg/kg at 7-ft-bgs."

One borehole to a depth of 23 feet below ground surface is not representative of the entire area to be excavated (as shown in Figure 6) and cannot be used delineate the vertical extent of DRO contamination. Note, approximately four feet from borehole B8(B8-NEW-SE-S1) is borehole A(B8-NEW-SE) with a detected DRO concentration of 19,000 mg/kg at nine feet bgs. According to Figures 4 and 6, at borehole A(B8-NEW-SE), samples have not been collected below a depth of nine feet to determine the approximate maximum depth of contamination. Therefore, the Permittee has not fully delineated the vertical extent of DRO contamination. During the excavation, the Permittee must ensure the vertical and horizontal extent of contamination has been delineated. See Comments 2 and 3.

Comment 2

In Section 2.1.3 (Sample Results), page 2-3, the Permittee states that "[s]amples were submitted to the laboratory for analysis. The laboratory analyzed the samples using USEPA Method 8015B. The results for samples collected from new boreholes M-1, I-1, G-1, and K-1 at depths of 3, 8, and 13 bgs and existing borehole B8 (B8-NEW-SE-S1) at 8, 13, 18, and 23 ft-bgs were non-detect for DRO. Trihydro believes that this new data effectively delineates both the horizontal and vertical extent of DRO contamination associated with test pit B-8. These results are illustrated on Figure 4."

Based on Figure 4, the Permittee has not defined the vertical extent of DRO contamination associated with test pit B-8 at locations B8-NE and A(B8-NEW-SE), which contain DRO concentrations of 1,300 mg/kg at three feet (ft) bgs and 19,000 mg/kg at nine ft bgs, respectively. These detections are above the NMED TPH guideline of 890 mg/kg. The Permittee must ensure that during the excavation, the contaminated soil associated with these locations is removed. The Permittee must also collect a representative number of confirmation samples to demonstrate that residual DRO contamination is below 890 mg/kg. Based on field events, confirmation samples must be collected from the bottom and side-walls of the excavation. See Comment 3.

Comment 3

The Permittee discusses confirmation sample collection in Section 4.3. The Permittee proposes to collect 10 confirmation samples which are identified in Figure 6. The Permittee states on page 4-2, that "[t]he area to be excavated to 13-ft-bgs has four sidewalls. However, four samples with DRO concentrations below the cleanup standard have already been collected from the sidewalls of this area (as the result of previous delineation activities.) Because of this, Trihydro believes that one additional sidewall confirmation sample collected from the area to be excavated to 13 ft-bgs will be sufficient to demonstrate that DRO contaminated soil has been removed from this area.....[a] summary of the proposed soil confirmation sampling is presented in Table 1."

NMED does not agree with the proposed confirmation sampling. The Permittee is asking NMED to approve a specific number of confirmation samples when field conditions may prove

otherwise. Additional confirmation bottom and side-wall samples may be necessary to demonstrate compliance. NMED has the following comments related to the remedial activities:

a. There are data gaps in the delineation of the vertical and horizontal extent of DRO contamination. For example, in reference to Figure 6, sample points K, H, I, and M were sampled at depths of three and five feet. These locations have DRO detections above the cleanup standard at three feet and detections below the cleanup standards at five feet. The Permittee has not demonstrated that between three and five feet, the DRO concentrations in the soil are below the cleanup standard of 890 mg/kg or whether additional soil must be removed between these depths. In addition, there is approximately 20 feet between locations J, K, G, H, I, and M and K-1, G-1, I-1, and M-1. With the exception of location L, there are no sampling locations or analytical data to demonstrate if DRO is present in soil at concentrations greater than the cleanup level within this 20 foot gap. (See items b-e)

b. The area to be excavated to 13 feet may require additional bottom and side-wall confirmation samples than what was proposed in the Work Plan in order to demonstrate that residual soil DRO concentrations are below the clean up standard. This shall be determined by the Permittee based on field observations.

c. Sample locations E, K, H, I, and M are all near the limits of the excavation between depths of three and five feet (as shown in Figure 6). Contamination is present at concentrations that exceed the cleanup standard at three feet at all of these locations. It is not clear if soils will be excavated to five feet or three feet at these locations. The Permittee must ensure that all of the contaminated soil is removed and that a representative number of confirmation samples are collected from the bottom and side-walls of the excavation to demonstrate successful removal.

d. The Permittee must collect additional confirmation samples from the following locations: between CS-8 and M-1, between I-1 and M-1, and between 8-8NEW-NW and J. Confirmation samples must be collected from the bottom of the excavation. Side-wall confirmation samples must also be collected pending observations based on field screening. Side-wall samples must be collected to demonstrate that all soil containing DRO contamination at levels greater than the cleanup standard has been removed. NMED has provided an attached Figure (6) that identifies the additional locations for confirmation sample collection (locations are marked in red with a circled X). The Permittee may need to collect additional confirmation samples based on field observations.

e. The Permittee must use field screening methods to determine if additional excavation and confirmation sampling are necessary. Depending on field observations, it may be necessary to collect additional side-wall samples in addition to bottom samples (e.g., if contamination is found where it was not expected, excavation side-wall and bottom confirmation samples must be collected to demonstrate that contaminated soils have been removed).

Comment 4
In Section 4.2 (Excavation), page 4-1, the Permittee states "[u]pon completion of the excavation and receipt of sample results that verify that DRO concentrations are below the cleanup standard, the area will be backfilled with clean native material obtained from within the Refinery boundary."

The Permittee must demonstrate that the native material used as backfill has not been contaminated from refinery operations.

Comment 5
In Section 6.1 (Photographs), page 6-1, the Permittee states "[p]hotographs will be used to substantiate and augment the field notes. Photo-documentation will be utilized to show that the staked boundaries have been excavated to the appropriate depths. Each photograph will be numbered and recorded on a photograph log."

If the Permittee provides photographic documentation in the investigation report, the photographs must include the direction from which the photograph was taken (e.g., facing east).

Comment 6
The Permittee provides the following notation under "Explanation" in Figures 4 and 6 that states "* A(B8-NEW-SE) = MAY EVENT(AUGUST EVENT)" and "* B(B8-NEW-SE-S1) = MAY EVENT(AUGUST EVENT)."

If these notations are depicted on the figures in the final report, the Permittee must explain their meaning.

Comment 7
In accordance with NMED's July 22, 2008 Notice of Disapproval, the Permittee was supposed to submit an electronic copy of the Revised Excavation Plan with all edits and modifications shown in redline-strikeout format.

A redline –strikeout copy of the Revised Excavation Plan was not provided. In the future the Permittee must ensure that all requested information is submitted, or provide a reason for not including the requested information.

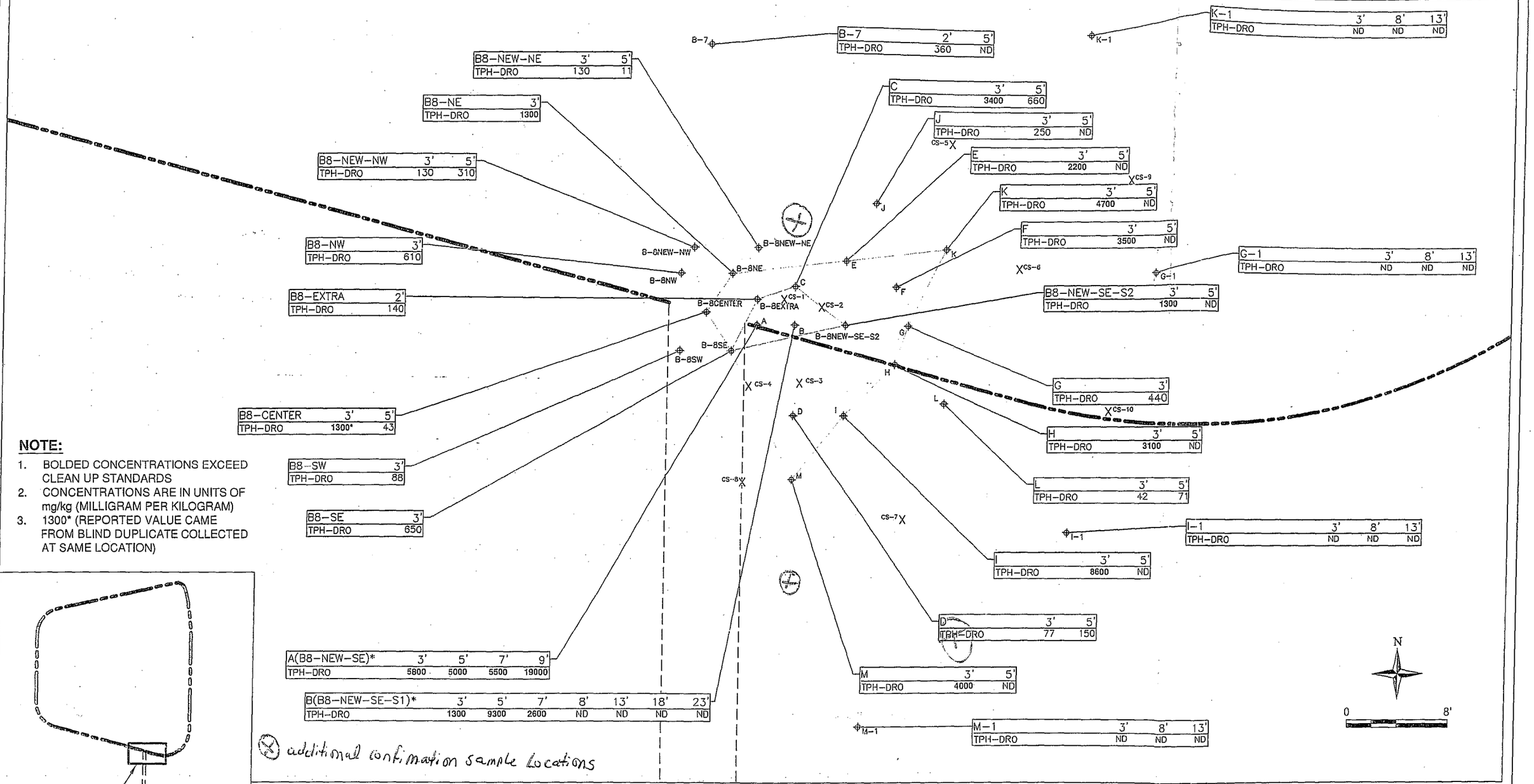
The Permittee must adhere to all requirements established within the Approval with Direction. The Work Plan must be implemented no later than April 1, 2009 and the Remedy Completion Report must be submitted to NMED no later than July 1, 2009. The Permittee must notify NMED one week prior to the start of field activities. No response to this letter is necessary.

If you have any questions regarding this letter please contact Hope Monzeglio of my staff at (505) 476-6045.

Sincerely,

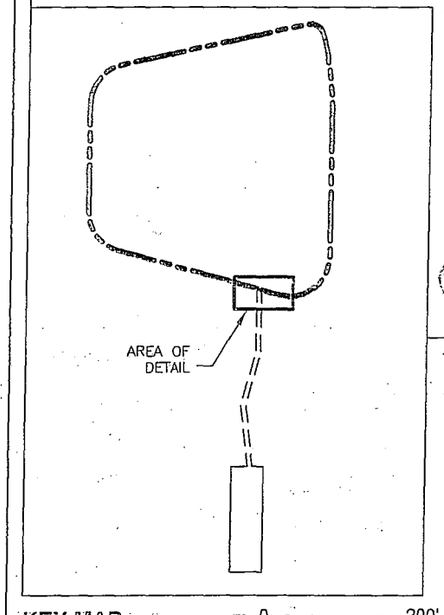
John E. Kieling
Program Manager
Permits Management Program
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
H. Monzeglio, NMED HWB
W. Price, OCD
G. Ragen, GRCC
File: GRCC 2008 and Reading
HWB-GRCC-07-002



NOTE:

1. BOLDED CONCENTRATIONS EXCEED CLEAN UP STANDARDS
2. CONCENTRATIONS ARE IN UNITS OF mg/kg (MILLIGRAM PER KILOGRAM)
3. 1300* (REPORTED VALUE CAME FROM BLIND DUPLICATE COLLECTED AT SAME LOCATION)



KEY MAP 0 200'

EXPLANATION

- OUTFLOW DITCH
- FAN-OUT AREA
- RAILROAD RACK LAGOON
- PREVIOUSLY EXCAVATED AREA
- EXCAVATE TO 3 FEET
- EXCAVATE TO 5 FEET
- EXCAVATE TO 13 FEET

Φ_{M-1} SOIL SAMPLE LOCATION AND DESIGNATION

ND NON DETECT

* A(B8-NEW-SE) = MAY EVENT(AUGUST EVENT)
B(B8-NEW-SE-S1) = MAY EVENT(AUGUST EVENT)

X^{CS-7} PROPOSED CONFIRMATION SAMPLE LOCATION

CONSTITUENT TABLE EXPLANATION

WELL DESIGNATION →	M-1	3'	8'	13' ← SAMPLE DEPTH
TOTAL PETROLEUM HYDROCARBONS AS DIESEL RANGE ORGANICS →	TPH-DRO	ND	ND	ND } CONCENTRATION SHOWN HERE IN MAXIMUM VALUE

Trihydro CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 6

RAILROAD RACK LAGOON OVERFLOW DITCH, FAN-OUT AREA SOIL SAMPLE LOCATIONS, AND RESULTS AND CONFIRMATION SAMPLE LOCATIONS

WESTERN REFINING, LLC
GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: RES	Checked By: RA	Scale: 1" = 8'	Date: 7/31/08	File: 072SOILSAMPAREA200804-6

APPENDIX G

NMED NOTICE OF DISAPPROVAL
JANUARY 2010 FINAL REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Phone (505) 476-6000 Fax (505) 476-6030
www.nmenv.state.nm.us

BILL RICHARDSON
Governor

DIANE DENISH
Lieutenant Governor

RON CURRY
Secretary

SARAH COTTRELL
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

May 12, 2010

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

RE: NOTICE OF DISAPPROVAL
RAILROAD RACK LAGOON OVERFLOW DITCH AND FAN-OUT AREA,
SWMU No. 8 SUBSURFACE INVESTIGATION FINAL REPORT
WESTERN REFINING COMPANY SOUTHWEST, INC., GALLUP REFINERY
EPA ID # NMD000333211
HWB-WRG-10-002

Dear Mr. Riege:

The New Mexico Environment Department (NMED) reviewed the *Railroad Rack Lagoon Overflow Ditch and Fan-Out Area, SWMU No. 8, Subsurface Investigation Final Report* (Report), dated January 2010, submitted on behalf of Western Refining Company Southwest Inc., Gallup Refinery (Permittee) and hereby issues this Notice of Disapproval (NOD) with the following comments.

Comment 1

NMED's December 11, 2009 *Approval with Modifications*, required the Permittee to define the vertical and horizontal extent of contamination at the overflow and fan-out area. From the Report, it is not clear that the Permittee completed the task to define the vertical extent of contamination. Table 1 (DRO Analytical Data Summary) lists results that are above the Total Petroleum Hydrocarbon (TPH) Diesel Range Organics (DRO) cleanup level of 890 mg/kg. Figure 5 (Railroad Rack Lagoon Overflow Ditch B-8 Excavation Areas and DRO Results)

presents sample results and areas that were excavated, but it does not appear that confirmation samples were collected at the bottom of the excavation. The excavation bottom samples were required by NMED's March 14, 2009 letter *Approval with Direction* which stated "[i]f the excavation does not exceed three feet below ground surface (bgs), the Permittee may collect confirmation samples from the bottom of the excavations only. If the excavation exceeds three feet bgs, then confirmation samples must be collected from all sidewalls of the excavations in addition to from the base of the excavations." The Permittee did not follow this directive, for example, in Area 3, which was excavated to seven feet; confirmation samples were not collected from the base of this excavation. In Area 4, which was excavated to 13 feet, the Permittee collected six samples around the perimeter of the excavation at a depth of 13 feet and only three samples were collected from the base of the excavation. At one point (A (B8-NEW-SE)) there is an increase in DRO concentration with depth and apparently no sample collected to demonstrate that the DRO-contaminated soil was removed.

In order to determine whether or not the removal of all soils containing concentrations of DRO above 890 mg/kg from the fan-out area was completed, the Permittee needed to collect samples from the base and sidewalls of the excavation. Therefore, confirmation samples must be collected at the excavation bottom and from the sidewalls using a systematic sampling pattern and samples must also be collected from areas of visible staining, elevated moisture levels, and contaminated zones identified by field-screening and beneath areas with detected residual contamination. Until the Permittee defines the extent of the contamination, NMED cannot determine if further remediation is necessary. The Permittee must conduct additional confirmation sampling and, if necessary, conduct additional excavation activities if the confirmation samples contain DRO concentrations greater than the acceptable cleanup level. In the revised Report, the Permittee must submit a figure depicting the locations of the final confirmation sample locations, depths the samples were taken, and the analytical results. The Permittee must submit proposed confirmation sample locations for NMED approval no less than 30 days before confirmation sampling activities begin.

Comment 2

In Section 3.2 (Excavation Activities), page 3-2, paragraph 3, the Permittee states "[c]onfirmation sample locations were strategically located to supplement the existing DRO data." The Permittee must include more detail regarding the confirmation sampling (i.e., provide the rationale for the "strategic" location of the confirmation samples). The Permittee must revise the Report to include specific details regarding the confirmation sampling locations and the logic behind the selection of the sampling locations.

Comment 3

In Section 3.2 (Excavation Activities), page 3-2, paragraph 3, the Permittee states "[d]ue to

confirmation sample DRO exceedences, the size of the excavation, as proposed in the 2008 Excavation Work Plan, was increased ... Excavation activities continued through October 2009 due to additional confirmation sample exceedences and visually impacted soil." The Permittee must revise the Report to include additional detail regarding the excavation. For example, the Permittee must state, or include a figure with, the locations where the exceedences were found (e.g., sample location, depth, cardinal direction), discuss the amount of soil removed during each of the excavations, and describe confirmation sampling.

Comment 4

In Section 3.2 (Excavation Activities), page 3-2 and 3-3, the Permittee states "Test Pit B-8 confirmation sample locations and results are illustrated in Figure 5. Area 1 was excavated to depth of 3 feet below ground surface (ft bgs), and excavation activities in this area were overseen by Trihydro. Area 2 was excavated to a depth of 5 ft bgs by Gallup personnel. Area 3 and 4 excavations were overseen by a combination of Trihydro and Gallup personnel and extended to 7 and 13 ft bgs." The Permittee must revise the Report to discuss the basis for excavation to the various depths (e.g., the confirmation sample detections that indicated the need for additional soil removal). The Permittee must revise Figure 5 or provide an additional figure to show the final confirmation sample locations, see Comment 1.

Comment 5

In Section 4.3.1.1 (Delineation Sample Locations), page 4-2, paragraph 2, the Permittee states "[t]he sampling locations in these three delineation sampling events (May, August, and December 2007) were determined based on exceedences identified during the preceding sampling events. These locations are illustrated on Figures 5 and 6." The Permittee must list these sampling locations by name in the text, so that the locations can be identified in the figures. Additionally, Figure 5 appears to illustrate the locations of multiple sampling events beyond the three delineation events mentioned above. The Permittee must revise the Report to refer to specific sampling locations, instead of referring to the locations generally.

Comment 6

In Section 4.3.2.1 (Confirmation Sample Locations), page 4-4, paragraph 1, the Permittee states "[a] total of ten sidewall and base confirmation sample locations were proposed in the 2008 Excavation Work Plan. Three additional locations were added at the suggestion of NMED in the December 11, 2008 Approval with Direction letter provided as Appendix F. These 13 locations were strategically located in areas where DRO delineation data was limited in an attempt to fill potential data gaps. Of the 13 approved confirmation sampling locations, 3 exceeded the DRO cleanup standard prompting expansion of the excavation." The Permittee must revise the Report to be specific regarding the sample location names (e.g.,instead of stating "of the 13 approved

sampling locations, 3 exceeded," list the specific location designations).

Comment 7

In Section 4.4 (Investigation Derived Waste), page 4-5, the Permittee states "[e]xcavated soils and soil cuttings produced during the sampling events have been transported to Gallup's Land Farm as permitted by OCD." The Permittee must revise the Report to describe the estimated volume of soil cuttings and excavated soil that were disposed of at the Land Farm.

Comment 8

In Section 6.1 (Test Pit B-9), the Permittee states "samples collected from each corner of the excavation at depths of 3 ft bgs and the center of the excavation at a depth of 5 ft bgs showed DRO concentrations below the clean up standard." The sample points are illustrated in Figure 6 (Railroad Rack Lagoon Overflow Ditch B-9 Final Excavation Area and Sample Results); the Permittee excavated the ditch to 5 feet, but in the figure it is not apparent that the 3 ft samples are sidewall samples. The Permittee must revise the Report and Figures to differentiate between sidewall and bottom confirmation samples (e.g., use different symbols or colors on the figures, provide additional figures or in a table cross-referenced in the figure key).

Comment 9

In Section 6.2 (Test Pit B-8), the Permittee states "[a]s illustrated on Figure 5, between delineation and confirmation sampling activities, a total of 67 soil samples showing DRO concentrations below the cleanup standard have been excavated from the vicinity of Test Pit B-8. A summary of the analytical data is provided as Table 1." Figure 5 and Table 1 appear to show either residual contamination, or that the Permittee did not collect confirmation samples from the base of the excavation. See Comment 1 regarding Figure 5, Table 1 and additional confirmation sampling requirements.

The Permittee must address all comments contained in this NOD and submit a revised Work Plan to NMED and OCD on or before July 20, 2010. The revised Report must be accompanied by a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments. In addition, the Permittees must submit a redline-strikeout version that includes all changes and edits to the Report (electronic copy) with the response to this NOD.

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

Sincerely,

James P. Bearzi
Chief
Hazardous Waste Bureau

cc: J. Kieling, NMED HWB
D. Cobrain NMED HWB
H. Monzeglio NMED HWB
K. Van Horn NMED HWB
C. Chavez, OCD
R. Gaurav, Gallup
File: Reading File and WRG 2010 File
HWB-WRG-10-002

APPENDIX H

WESTERN RESPONSE TO NMED NOTICE OF DISAPPROVAL

JUNE 2010

June 23, 2010

Mr. James P. Bearzi
Chief – Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

RE: NMED's "NOTICE OF DISAPPROVAL
RAILROAD RACK LAGOON OVERFLOW DITCH AND FAN-OUT AREA,
SWMU No. 8 SUBSURFACE INVESTIGATION FINAL REPORT
WESTERN REFINING COMPANY SOUTHWEST, INC., GALLUP REFINERY EPA
ID # NMD000333211
HWB-WRG-10-002"

Dear Mr. Bearzi:

The purpose of this letter is to respond to the New Mexico Environment Department's (NMED) comments to the *Railroad Rack Lagoon Overflow Ditch and Fan-Out Area, SWMU No. 8, Subsurface Investigation Final Report* (Report), dated January 6, 2010, submitted on behalf of Western Refining Company Southwest Inc., Gallup Refinery (Western). NMED issued comments to the Report in a *Notice of Disapproval*, dated May 12, 2010.

NMED's May 12 comments are repeated below for convenience. Each comment is followed by Western's response. NMED Comment 1 has been divided into subcomments so that each topic could be addressed separately.

NMED Comment 1

NMED's December 11, 2009 *Approval with Modifications,* required the Permittee to define the vertical and horizontal extent of contamination at the overflow and fan-out area. From the Report, it is not clear that the Permittee completed the task to define the vertical extent of contamination. Table 1 (DRO Analytical Data Summary) lists results that are above the Total Petroleum Hydrocarbon (TPH) Diesel Range Organics (DRO) cleanup level of 890 mg/kg.

Response to Comment 1

Table 1 of the Report lists all DRO data associated with the B-8 and B-9 excavations. These two locations were determined to be the only areas of concern based on the October 2006 investigation. In order to define the vertical and horizontal extent of

contamination, contaminated soil must be identified. Therefore, Western deemed it appropriate to show the results of the contaminated soil on Table 1 and Figure 5. When DRO exceedances were discovered, the excavation was expanded to remove the DRO contaminated soil and additional confirmation samples were collected. Table 2 (as subset of Table 1) has been created to show the confirmation samples collected at the base and sidewalls of the excavation. These samples have DRO concentrations below the cleanup level of 890 mg/kg, thus delineating the vertical and horizontal extent of contamination. Table 2 is included as an attachment to this correspondence and, upon NMED approval, will be included in a revised version of the Report.

NMED Comment 1 cont'd

Figure 5 (Railroad Rack Lagoon Overflow Ditch B-8 Excavation Areas and DRO Results) presents sample results and areas that were excavated, but it does not appear that confirmation samples were collected at the bottom of the excavation. The excavation bottom samples were required by NMED's March 14, 2009 letter *Approval with Direction* which stated "[i]f the excavation does not exceed three feet below ground surface (bgs), the Permittee may collect confirmation samples from the bottom of the excavations only. If the excavation exceeds three feet bgs, then confirmation samples must be collected from all sidewalls of the excavations in addition to from the base of the excavations." The Permittee did not follow this directive, for example, in Area 3, which was excavated to seven feet; confirmation samples were not collected from the base of this excavation.

Response to Comment 1 cont'd

Sample CS-14, located on the northwest corner of Area 3, was collected at 7 ft bgs from the edge of Areas 3 and 4. Thus, it can be considered a base confirmation sample for Area 3 and a sidewall confirmation sample for Area 4.

Sample CS-22 was collected approximately 2 feet north of Area 3. CS-22 was collected at 7 ft bgs to vertically delineate DRO contamination discovered in samples CS-19, CS-20, and CS-21 (3 ft bgs, 3.5 ft bgs, and 3.5 ft bgs, respectively). These samples, in part, necessitated extending the depth of the excavation in Area 3 (from 3 ft bgs to 7 ft bgs). Sample CS-22 was initially planned to be a base confirmation sample in Area 3; there are no DRO exceedances in the immediate vicinity of this sample location necessitating excavation deeper than 7 ft bgs. However, due to the nature of excavating with a backhoe (i.e. the precision and accuracy of the backhoe) and the fact that the areas were measured after the excavation had been completed, the portion of Area 3 including CS-22 was excavated to 13 ft bgs. Western believes that CS-22 may still be used to demonstrate vertical delineation (as a base sample) at Area 3 at a depth of 7 ft bgs even though it is technically located approximately 2 feet north of Area 3.

NMED Comment 1 cont'd
In Area 4, which was excavated to 13 feet, the Permittee collected six samples around the perimeter of the excavation at a depth of 13 feet and only three samples were collected from the base of the excavation.

Response to Comment 1 cont'd
Western is unclear as to NMED's comment that six samples were collected from around the perimeter of the excavation at a depth of 13 feet. As presented on Figure 5 and Table 1, three samples were collected from the base at perimeter of the 13 foot excavation (A-1, A-2, and A-3) and three internal base samples were collected from within the 13 foot excavation (CS-1, CS-16, and "B"). Thus, Western believes a total of six base confirmation samples were collected from Area 4. Further, four sidewall samples were collected from the 13-foot excavation. These sidewall samples include B-8 Center (5 feet), E (5 feet), K (5 feet), and M (5 feet).

To help clarify this issue, Western has created Figure 7 to illustrate base and sidewall confirmation samples for each area. The sidewall samples are shown as orange and base samples are shown as magenta. There are a few samples that can be considered both base and sidewall samples. For example, CS-14 is collected at 7 ft bgs on the corner of Area 3 and Area 4. In respect to Area 3, this is a base sample. In respect to Area 4, it is a sidewall sample. These "base/sidewall" samples are illustrated on Figure 7 in cyan. Figure 7 is included as an attachment to this correspondence and, pending NMED approval, will be included in a revised version of the Report.

NMED Comment 1 cont'd
At one point (A (B8-NEW-SE)) there is an increase in DRO concentration with depth and apparently no sample collected to demonstrate that the DRO-contaminated soil was removed.

Response to Comment 1 cont'd
At the time that additional delineation samples were being collected in the vicinity of A(B8-NEW-SE) (henceforth referred to as "A") to help determine the vertical extent of DRO contamination, a hollow stem auger drill rig was being used to collect soil samples. Due to the open excavation immediately adjacent to "A", deeper samples were not able to be safely collected at this exact location. Instead, deeper samples were collected at B(B8-NEW-SE-S1) (henceforth referred to as "B") which also showed DRO exceedances at depths as deep as 7 ft bgs. The "B" sample location is approximately 2 to 3 feet east of "A" and samples collected from 13 ft bgs, 18 ft bgs, and 23 ft bgs were each non-detect for DRO, thus verifying that the 13 ft bgs excavation was sufficient to remove DRO-contaminated soil

NMED Comment 1 cont'd

In order to determine whether or not the removal of all soils containing concentrations of DRO above 890 mg/kg from the fan-out area was completed, the Permittee needed to collect samples from the base and sidewalls of the excavation. Therefore, confirmation samples must be collected at the excavation bottom and from the sidewalls using a systematic sampling pattern and samples must also be collected from areas of visible staining, elevated moisture levels, and contaminated zones identified by field-screening and beneath areas with detected residual contamination.

Response to Comment 1 cont'd

In the March 14, 2009 letter *Approval with Direction*, NMED had originally requested that 13 confirmation samples be collected for the original excavation area. However, because CS-2, CS-4, and CS-8 exceeded the DRO cleanup level, the excavation was expanded and 33 confirmation samples were collected (26 base, 4 sidewall, 3 base/sidewall – see Figure 7).

Western collected confirmation samples in accordance with the locations that NMED approved in the "Approval With Direction, Railroad Rack Lagoon Fan-Out Area Excavation Work Plan, Western Refining Southwest, Inc., Gallup Refinery, EPA ID #: NMD000333211, HWB-GRCC-07-002." When the size of the excavation was increased due to DRO exceedances, the same methodology was used to collect additional confirmation samples. An example of this methodology is shown using samples CS-19, CS-20, CS-21 and CS-22. Samples CS-19, CS-20, and CS-21 were above the DRO cleanup level at 3 or 3.5 ft bgs. Thus, the excavation was extended to 7 ft bgs in this area and CS-22 (horizontally located in the middle of CS-19, CS-20, and CS-21) was collected to vertically delineate DRO contamination.

As mentioned in section 4.3.3 of the Report, due to limited correlation shown between field screening data and confirmation sampling results, NMED permitted Western to proceed with the excavation utilizing visual observations and confirmation sampling results in lieu of field screening. When areas exhibiting visual contamination were identified, the size of the excavation was expanded and confirmation samples were collected. This was the case for CS-19 and CS-20. When the CS-19 and CS-20 samples were being collected, visible staining was observed. Thus, once the laboratory results were received, it was decided to excavate the area to 7 feet. This was the depth at which the staining was visibly removed.

NMED Comment 1 cont'd
Until the Permittee defines the extent of the contamination, NMED cannot determine if further remediation is necessary. The Permittee must conduct additional confirmation sampling and, if necessary, conduct additional excavation activities if the confirmation samples contain DRO concentrations greater than the acceptable cleanup level.

Response to Comment 1 cont'd
As mentioned in Section 7.0 of the Report, the B8 DRO exceedances discovered during the investigation/excavation are surrounded by at total of 67 soil samples showing DRO concentrations less than the cleanup standard. Western believes these 67 soil samples define the extent of the DRO contamination and no additional confirmation sampling is necessary. A total of 784 cubic yards of DRO-contaminated soil encompassed by these 67 samples has been excavated. Therefore, Western believes no further excavation activities are necessary.

NMED Comment 1 cont'd
In the revised Report, the Permittee must submit a figure depicting the locations of the final confirmation sample locations, depths the samples were taken, and the analytical results. The Permittee must submit proposed confirmation sample locations for NMED approval no less than 30 days before confirmation sampling activities begin.

Response to Comment 1 cont'd
Figure 5 of the Report shows all sample locations, depths, and analytical results. Figure 7 and Table 2 (provided as attachments to this correspondence) have been created to show only the final confirmation sample locations. The revised Report will be updated to included Figure 7 and Table 2.

Note that Figure 7 and Table 2 only show confirmation sample results of those samples that were collected from the base or sidewall of the final excavation. Numerous other samples (for example, CS-24 and CS-18) were also necessary for delineating the DRO contaminated area. However, since these samples were not collected from the base or sidewall of the final excavation, they are not included on Figure 7 or Table 2. Figure 7 and Table 2 will be incorporated into the revised Report.

NMED Comment 2
In Section 3.2 (Excavation Activities), page 3-2, paragraph 3, the Permittee states "[c]onfirmation sample locations were strategically located to supplement the existing DRO data." The Permittee must include more detail regarding the confirmation sampling (i.e., provide the rationale for the "strategic" location of the confirmation samples). The Permittee must revise

the Report to include specific details regarding the confirmation sampling locations and the logic behind the selection of the sampling locations.

Response to Comment 2

Thirteen original confirmation sample locations and depths were approved by NMED in the "Approval With Direction, Railroad Rack Lagoon Fan-Out Area Excavation Work Plan, Western Refining Southwest, Inc., Gallup Refinery, EPA ID #: NMD000333211, HWB-GRCC-07-002." These locations were selected because limited DRO data existed in these areas. These confirmation samples are identified as CS-1 through CS-13. If a confirmation sample showed a DRO exceedance, the excavation was expanded. As the excavation was expanded, additional confirmation samples were collected to verify that the soil remaining in place was below the DRO cleanup standard. An example of this logic is provided in the response to Comment 1 (CS-19, CS-20, CS-21, and CS-22).

NMED Comment 3

In Section 3.2 (Excavation Activities), page 3-2, paragraph 3, the Permittee states "[d]ue to confirmation sample DRO exceedances, the size of the excavation; as proposed in the 2008 Excavation Work Plan, was increased ... Excavation activities continued through October 2009 due to additional confirmation sample exceedances and visually impacted soil." The Permittee must revise the Report to include additional detail regarding the excavation. For example, the Permittee must state, or include a figure with, the locations where the exceedances were found (e.g., sample location, depth, cardinal direction), discuss the amount of soil removed during each of the excavations, and describe confirmation sampling.

Response to Comment 3

Per the 2008 Excavation Work Plan, confirmation samples CS-1 through CS-13 were collected from the original excavation. The results of these samples, as well as the results of all samples associated with the excavation, are shown on Table 1 and Figure 5 of the Report. Of the original 13 confirmation samples, CS-2, CS-4, and CS-8 exceeded the DRO cleanup standard. Figure 4 shows the proposed excavation area versus the actual excavation area. As shown on Figure 4, the original confirmation sample exceedances prompted the excavation to be expanded generally to the west and southwest. However, each exceedance identified during delineation and excavation activities prompted additional investigation/excavation. As shown on Table 1, 28 exceedances were identified in the B-8 Excavation. Western deemed it more appropriate to illustrate these exceedances on a figure (Figure 5) rather than attempt to describe each of them in the text of the report.

NMED also requested that Western provide the amount of soil removed during each of the excavations. Western considers this to be a single excavation that was continuously expanded until the DRO contaminated soil was delineated and removed. Intermediate volumes were not required as part of the 2008 Excavation Work Plan, thus this information was not recorded or calculated. However, the final total volume is presented in Section 7.0 of the Report.

Confirmation soil sampling procedures are discussed in Section 4.3.2.2 and 4.3.1.2 of the Report.

NMED Comment 4

In Section 3.2 (Excavation Activities), page 3-2 and 3-3, the Permittee states "Test Pit B-8 confirmation sample locations and results are illustrated in Figure 5. Area 1 was excavated to depth of 3 feet below ground surface (ft bgs), and excavation activities in this area were overseen by Trihydro. Area 2 was excavated to a depth of 5 ft bgs by Gallup personnel. Area 3 and 4 excavations were overseen by a combination of Trihydro and Gallup personnel and extended to 7 and 13 ft bgs." The Permittee must revise the Report to discuss the basis for excavation to the various depths (e.g., the confirmation sample detections that indicated the need for additional soil removal). The Permittee must revise Figure 5 or provide an additional figure to show the final confirmation sample locations, see Comment 1.

Response to Comment 4

As presented in the Report, each area was excavated until the outermost samples (both horizontal and vertical) were below the DRO cleanup standard of 890 mg/kg. For example, an exceedance of DRO was discovered at 9 ft bgs at sample location "A." Therefore, this area was excavated to 13 ft bgs which was shown to be below the cleanup standard at sample location "B." The final confirmation samples prompting cessation of the excavation are illustrated on Figure 7 and Table 2. This Figure and Table are provided as attachments to this document and, pending NMED approval, will be provided in the revised Report.

NMED Comment 5

In Section 4.3.1.1 (Delineation Sample Locations), page 4-2, paragraph 2, the Permittee states "[t]he sampling locations in these three delineation sampling events (May, August, and December 2007) were determined based on exceedances identified during the preceding sampling events. These locations are illustrated on Figures 5 and 6." The Permittee must list these sampling locations by name in the text, so that the locations can be identified in the figures. Additionally, Figure 5 appears to illustrate the locations of multiple sampling events beyond the

three delineation events mentioned above. The Permittee must revise the Report to refer to specific sampling locations, instead of referring to the locations generally.

Response to Comment 5

A total of 101 samples were collected throughout the investigation/excavation. Western believes that attempting to discuss each individual sample result, whether or not the result prompted additional excavation, and what direction the excavation was expanded due to the result of the sample would cause more confusion than clarification. Instead, Western provided this information on Figure 5 where the information can be visualized. Each exceedance identified during delineation and excavation activities prompted additional investigation/excavation. The excavation was expanded until data showed that the remaining outermost samples (both horizontally and vertically) were below the cleanup standard.

As mentioned in NMED's comment, the text of the Report refers to three delineation events (May, August, and November 2007). These delineation events were used to determine the initially proposed excavation area presented in the 2008 Excavation Work Plan, dated September 17, 2008. Western considers subsequent field activities (excavation and confirmation sampling) as one, continuous field event, which is why multiple excavation "events" are not discussed in the text. The data collected from excavation and confirmation sampling is presented on Table 1 and Figure 5 in addition to the data collected from the three delineation events, for completeness. Sample IDs, the date which the sample was collected, the depth at which the sample was collected, and whether or not the sample exceeded the DRO cleanup standards are shown on Table 1. Sample locations, depths, and results are shown Figures 5 and 6. The sample dates shown on Table 1 may be used to determine with which event each sample is associated.

NMED Comment 6

In Section 4.3.2.1 (Confirmation Sample Locations), page 4-4, paragraph 1, the Permittee states "[a] total of ten sidewall and base confirmation sample locations were proposed in the 2008 Excavation Work Plan. Three additional locations were added at the suggestion of NMED in the December 11, 2008 Approval with Direction letter provided as Appendix F. These 13 locations were strategically located in areas where DRO delineation data was limited in an attempt to fill potential data gaps. Of the 13 approved confirmation sampling locations, 3 exceeded the DRO cleanup standard prompting expansion of the excavation." The Permittee must revise the Report to be specific regarding the sample location names (e.g., instead of stating, "of the 13 approved sampling locations, 3 exceeded," list the specific location designations).

Response to Comment 6

As shown in Table 1 of the 2008 Excavation Work Plan, the original proposed confirmation sampling locations are designated CS-1 through CS-10. Per NMED's conditional approval, CS-11 through CS-13 were added. As shown in Table 1 and Figure 5 of the Report, CS-2, CS-4, and CS-8 exceeded the DRO cleanup standard. The revised Report will specify CS-2, CS-4, and CS-8 as the three original confirmation sample locations that exceeded the cleanup level.

NMED Comment 7

In Section 4.4 (Investigation Derived Waste), page 4-5, the Permittee states "[e]xcavated soils and soil cuttings produced during the sampling events have been transported to Gallup's Land Farm as permitted by OCD." The Permittee must revise the Report to describe the estimated volume of soil cuttings and excavated soil that were disposed of at the Land Farm.

Response to Comment 7

As stated in Section 7.0 of the Report, approximately 784 cubic yards of soil were excavated from B-8. Dimensions for the B-9 excavation were also included in the Report, however the volume of soil was not. Approximately 3 cubic yards of soil were excavated from B-9. The revised Report will include the total cubic yards of soil excavated from B-9.

NMED Comment 8

In Section 6.1 (Test Pit B-9), the Permittee states "samples collected from each corner of the excavation at depths of 3 ft bgs and the center of the excavation at a depth of 5 ft bgs showed DRO concentrations below the clean up standard." The sample points are illustrated in Figure 6 (Railroad Rack Lagoon Overflow Ditch B-9 Final Excavation Area and Sample Results); the Permittee excavated the ditch to 5 feet, but in the figure it is not apparent that the 3 ft samples are sidewall samples. The Permittee must revise the Report and Figures to differentiate between sidewall and bottom confirmation samples (e.g., use different symbols or colors on the figures, provide additional figures or in a table cross-referenced in the figure key).

Response to Comment 8

If a sample is collected at the boundary of an area at a depth less than the total depth of the area, it is considered a sidewall sample. If a sample is collected at a depth equal to the total depth of a specific area, it is considered a base sample.

The revised Report will be updated to show base and sidewall samples as magenta and orange, respectively. For the B-9 Excavation, Figure 6 will be updated according to this color scheme.

Due to the complexity of Figure 5, Figure 7 has been created for the B-8 Excavation to show only the final confirmation samples. The above mentioned orange and magenta color scheme is used to differentiate between base and sidewall samples. There are a few samples that can be considered both base and sidewall samples. For example, CS-14 is collected at 7 ft bgs on the corner of Area 3 and Area 4. In respect to Area 3, this is a base sample. In respect to Area 4, it is a sidewall sample. These "base/sidewall" samples are illustrated on Figure 7 in cyan.

NMED Comment 9

In Section 6.2 (Test Pit B-8), the Permittee states "As illustrated on Figure 5, between delineation and confirmation sampling activities, a total of 67 soil samples showing DRO concentrations below the cleanup standard have been excavated from the vicinity of Test Pit B-8. A summary of the analytical data is provided as Table 1." Figure 5 and Table 1 appear to show either residual contamination, or that the Permittee did not collect confirmation samples from the base of the excavation. See Comment 1 regarding Figure 5, Table 1 and additional confirmation sampling requirements.

Response to Comment 9

Figure 5 and Table 1 show all delineation and confirmation sampling data, regardless of whether the data exceeds the DRO cleanup standard or not. The outermost (horizontally and vertically) data do not exceed the cleanup standard. Western deemed it appropriate to include the exceedances so that NMED could see that the DRO contamination has been delineated. Figure 7 and Table 2 have been created to show that confirmation samples below the cleanup standard surround the sidewalls and base of the excavation.

NMED FINAL COMMENT

The Permittee must address all comments contained in this NOD and submit a revised Work Plan to NMED and OCD on or before July 20, 2010. The revised Report must be accompanied by a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments. In addition, the Permittees must submit a redline-strikeout version that includes all changes and edits to the Report (electronic copy) with the response to this NOD.

Final Comment Response

Western believes that the additional explanation provided in this response, along with Figure 7 and Table 2, show that the Fan-out Area DRO contamination has been delineated and excavated. Thus, Western hopes that a revised Work Plan will not be necessary. Upon NMED's approval of these responses, Western will provide a letter detailing the revisions to the Report and cross-referencing NMED's numbered comments.

Western will also provide an electronic redline-strikeout version that includes all changes and edits to the Report.

Western believes that, upon NMED receipt of these responses, a meeting between NMED and Western may be mutually beneficial to help clarify the topics presented in this correspondence. If you have any questions, or if we can be of further service to you, please do not hesitate to call me at (307) 745-7474.

Sincerely,

Ed Riege
Environmental Manager

697-039-001

Attachments

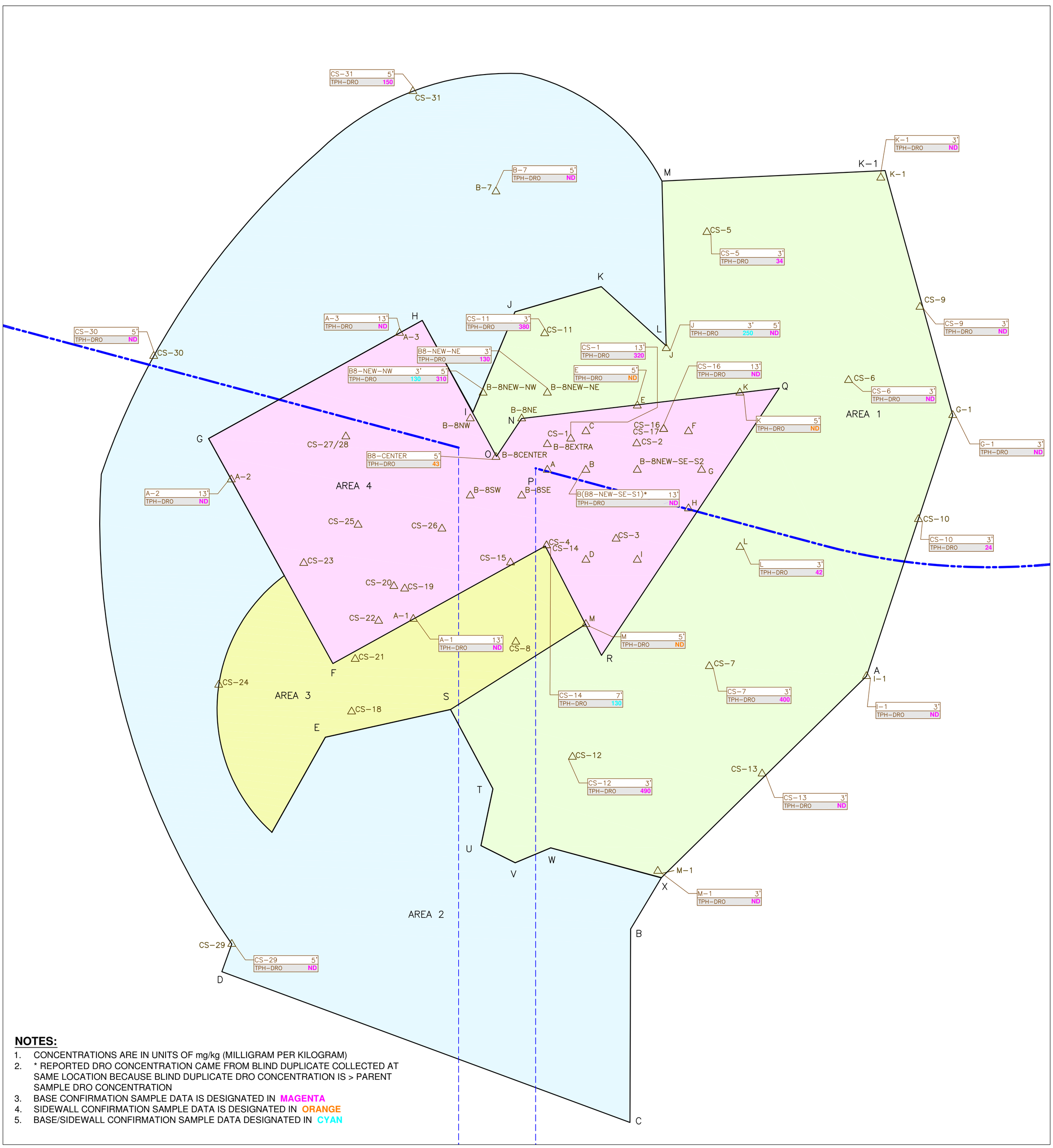
cc: H. Monzeglio NMED HWB
K. Van Horn NMED HWB
C. Chavez, OCD
File: Reading File and WRG 2010 File HWB-WRG-10-002

TABLE 2. FINAL CONFIRMATION SAMPLE ANALYTICAL DATA SUMMARY
RAILROAD RACK LAGOON OVERFLOW DITCH AND FAN-OUT AREA
WESTERN REFINING COMPANY, GALLUP REFINERY, GALLUP, NEW MEXICO

Excavation B-8				
Date	**Sample ID**	**Base Sample/ Sidewall Sample (Area)**	**Depth (ft bgs)**	**Laboratory DRO Result (mg/kg)**
10/18/2006	B-7	BS (Area 2)	5	ND(10)
10/17/2006	B-8Center	SS (Area 4)	5	43
5/23/2007	B-8NEW-NW	BS (Area 1); SS (Area 2)	3	130
5/23/2007	B-8NEW-NW	BS (Area 2)	5	310
5/23/2007	B-8NEW-NE	BS (Area 1)	3	130
12/17/2007	B-8NEW-SE-S1 (aka "B")	BS (Area 4)	13	ND(10)
8/20/2007	E	SS (Area 4)	5	ND(10)(UJ)
8/21/2007	J	BS (Area 1); SS (Area 2)	3	250(J)
8/21/2007	J	BS (Area 2)	5	ND(10)(UJ)
8/20/2007	K	SS (Area 4)	5	ND(10)(UJ)
8/21/2007	L	BS (Area 1)	3	42(J)
8/20/2007	M	SS (Area 3); SS (Area 4)	5	ND(10)(UJ)
12/17/2007	K-1	BS (Area 1)	3	ND(10)(UJ)
12/17/2007	G-1	BS (Area 1)	3	ND(10)
12/17/2007	I-1	BS (Area 1)	3	ND(10)(UJ)
12/17/2007	M-1	BS (Area 1)	3	ND(10)
3/17/2009	CS-1	BS (Area 4)	13	320
4/22/2009	CS-5	BS (Area 1)	3	34
3/18/2009	CS-6	BS (Area 1)	3	ND(10)
4/22/2009	CS-7	BS (Area 1)	3	400
3/18/2009	CS-9	BS (Area 1)	3	ND(10)
4/22/2009	CS-10	BS (Area 1)	3	24
4/22/2009	CS-11	BS (Area 1)	3	380
4/22/2009	CS-12	BS (Area 1)	3	490
4/23/2009	CS-13	BS (Area 1)	3	ND(10)
4/21/2009	CS-14	BS (Area 3); SS (Area 4)	7	130(J)
4/22/2009	CS-16	BS (Area 4)	13	ND(10)
10/1/2009	CS-29	BS (Area 2)	5	ND(10)
10/1/2009	CS-30	BS (Area 2)	5	ND(10)
10/1/2009	CS-31	BS (Area 2)	5	150
10/2/2009	A-1	BS (Area 4)	13	ND(10)
10/2/2009	A-2	BS (Area 4)	13	ND(10)
10/2/2009	A-3	BS (Area 4)	13	ND(10)

Excavation B-9				
Date	**Sample ID**	**Base Sample/ Sidewall Sample (Area)**	**Depth (ft bgs)**	**Laboratory Result (mg/kg)**
5/23/2007	B-9NEW-Center	BS (B9 Excavation)	5	150
5/21/2007	B-9SE	SS (B9 Excavation)	3	210
5/21/2007	B-9SW	SS (Excavation)	3	210
5/21/2007	B-9NE	SS (Excavation)	3	200
5/21/2007	B-9NW	SS (Excavation)	3	130

Notes:
DRO = Diesel Range Organics
ND(10)(UJ): Nondetect (limit)(Data Validation Qualifier)
BS = Base Sample
SS = Sidewall Sample
J = Estimated concentration
UJ = Estimated reporting limit
ft bgs = feet below ground surface



NOTES:

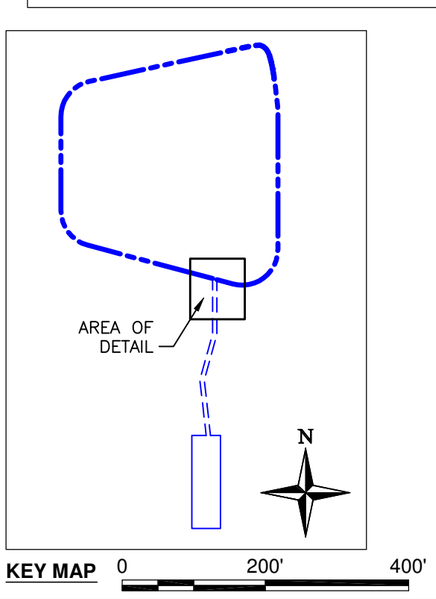
1. CONCENTRATIONS ARE IN UNITS OF mg/kg (MILLIGRAM PER KILOGRAM)
2. * REPORTED DRO CONCENTRATION CAME FROM BLIND DUPLICATE COLLECTED AT SAME LOCATION BECAUSE BLIND DUPLICATE DRO CONCENTRATION IS > PARENT SAMPLE DRO CONCENTRATION
3. BASE CONFIRMATION SAMPLE DATA IS DESIGNATED IN **MAGENTA**
4. SIDEWALL CONFIRMATION SAMPLE DATA IS DESIGNATED IN **ORANGE**
5. BASE/SIDEWALL CONFIRMATION SAMPLE DATA DESIGNATED IN **CYAN**

EXPLANATION

- AREA 1 — EXCAVATED TO 3 FEET
- AREA 2 — EXCAVATED TO 5 FEET
- AREA 3 — EXCAVATED TO 7 FEET
- AREA 4 — EXCAVATED TO 13 FEET
- ACTUAL EXCAVATION BOUNDARY
- OUTFLOW DITCH
- FAN-OUT AREA
- RAILROAD RACK LAGOON
- ND — NON DETECT
- * — A(B8-NEW-SE) = MAY EVENT(AUGUST EVENT); B(B8-NEW-SE-S1) = MAY EVENT(AUGUST EVENT)
- △M-1 — SAMPLE LOCATION AND DESIGNATION

N

0 5' 10'



KEY MAP

CONSTITUENT TABLE EXPLANATION

SAMPLE ID — M-1 — 3' — SAMPLE DEPTH
TOTAL PETROLEUM HYDROCARBONS AS DIESEL RANGE ORGANICS — TPH-DRO — ND — CONCENTRATION

Trihydro CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 7

RAILROAD RACK LAGOON OVERFLOW DITCH B-8 FINAL BASE AND SIDEWALL CONFIRMATION SAMPLE DRO RESULTS

WESTERN REFINING GALLUP REFINERY GALLUP, NEW MEXICO

Drawn By: REP	Checked By: GP	Scale: AS SHOWN	Date: 6/2/2010	File: 697-SOIL-BS-201005

APPENDIX I

WESTERN EXTENSION REQUEST FOR REVISED REPORT

JULY 2010

Western Refining
GALLUP

WNR LISTED NYSE

Certified Mail 7008 2810 0000 4726 2304

July 19, 2010

Mr. James P. Bearzi
Chief – Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

RE: NMED's "NOTICE OF DISAPPROVAL
RAILROAD RACK LAGOON OVERFLOW DITCH AND FAN-OUT AREA,
SWMU No. 8 SUBSURFACE INVESTIGATION FINAL REPORT
WESTERN REFINING COMPANY SOUTHWEST, INC., GALLUP REFINERY EPA
ID # NMD000333211
HWB-WRG-10-002"

Dear Mr. Bearzi:

The purpose of this letter is to request an extension for a revised report as requested in the New Mexico Environment Department's (NMED) comments to the *Railroad Rack Lagoon Overflow Ditch and Fan-Out Area, SWMU No. 8, Subsurface Investigation Final Report* (Report), dated January 6, 2010, submitted on behalf of Western Refining Company Southwest Inc., Gallup Refinery (Western). NMED issued comments to the Report in a *Notice of Disapproval* (NOD), dated May 12, 2010.

The final comment in the May 12 NOD requested that Western address all comments contained in the NOD and, "submit a revised Work Plan to NMED and OCD on or before July 20, 2010. The revised Report must be accompanied by a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments. In addition, the Permittees must submit a redline-strikeout version that includes all changes and edits to the Report (electronic copy) with the response to this NOD."

During a phone call between Western and NMED on July 19, 2010, NMED clarified that a revised Report, not Work Plan, will be required. Western responded to NMED's NOD in a letter dated June 22, 2010. In this correspondence, Western proposed methods to revise the Report based on the comments that NMED issued in the NOD. NMED has not yet responded to the June 22 correspondence. Western is hesitant to update the Report until NMED replies to the June 22 correspondence due to the fact that the several revisions will be dependent on NMED's response. Therefore, Western is requesting an extension of the July 20, 2010 due date. Assuming NMED replies to the June 22 correspondence by July 30, 2010, and that NMED generally agrees that the revisions proposed in the June 22 correspondence will address NMED's comments, Western requests that the due date for the revised Report be extended to August 31, 2010. If you have any questions, or if we can be of further service to you, please do not hesitate to call me at (505) 722-0217.

I-40 Exit 39, Jamestown, New Mexico 87347 • 505 722-3833 • www.wnr.com
Mail: Route 3 Box 7, Gallup, New Mexico 87301

Sincerely,
Western Refining Company

Ed Riege
Environmental Manager

697-039-001

Attachments

cc: H. Monzeglio NMED HWB
K. Van Horn NMED HWB
C. Chavez, OCD
File: Reading File and WRG 2010 File HWB-WRG-10-002

APPENDIX J

NMED DIRECTION FOR ADDITIONAL SOIL CONFIRMATION SAMPLE COLLECTION AND APPROVAL OF EXTENSION REQUEST

JANUARY 2010 FINAL REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Phone (505) 476-6000 Fax (505) 476-6030
www.nmenv.state.nm.us

BILL RICHARDSON
Governor

DIANE DENISH
Lieutenant Governor

RON CURRY
Secretary

SARAH COTTRELL
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

July 28, 2010

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

RE: DIRECTION FOR ADDITIONAL SOIL CONFIRMATION SAMPLE COLLECTION AND APPROVAL OF EXTENSION REQUEST RAILROAD RACK LAGOON OVERFLOW DITCH AND FAN-OUT AREA, SWMU No. 8 SUBSURFACE INVESTIGATION FINAL REPORT WESTERN REFINING COMPANY SOUTHWEST, INC., GALLUP REFINERY EPA ID # NMD000333211 HWB-WRG-10-002

Dear Mr. Riege:

The New Mexico Environment Department (NMED) received Western Refining Company Southwest Inc., Gallup Refinery's (Permittee) letter entitled *NMED's "Notice of Disapproval Railroad Rack Lagoon Overflow Ditch and Fan-out Area, SWMU No. 8 Subsurface Investigation Final Report"* (Response Letter) dated June 23, 2010. NMED still requires that the Permittee collect additional confirmation samples within the excavation.

NMED's December 11, 2009 *Approval with Modifications* required the Permittee to define the vertical and horizontal extent of contamination at the overflow and fan-out area. The *Railroad Rack Lagoon Overflow Ditch and Fan-out Area, SWMU No. 8 Subsurface Investigation Final Report* (Report), dated January 2010, does not document that the extent has, in fact, been defined. In the Response Letter, the Permittee provided a new figure (Figure 7) and table (Table 2) that focuses on the confirmation samples collected; these should be included in the revised

Report. However, the confirmation samples clearly do not cover the entire excavation. The Permittee's explanation regarding confirmation sample collection in the Response Letter does not address NMED's concerns regarding the spacing of confirmation samples. As a result there is insufficient information for NMED to determine that the site has been cleaned up to the 890 mg/kg diesel range organics (DRO) soil screening level listed in NMED's Total Petroleum Hydrocarbon (TPH) Screening Guidelines. In order to determine whether or not the removal of all soils containing concentrations of DRO above 890 mg/kg from the fan-out area was completed, the Permittee must collect samples from the base and sidewalls of the entire excavation. The Permittee must conduct additional confirmation sampling and, if necessary, conduct additional soil removal activities if the confirmation samples contain DRO concentrations greater than the acceptable cleanup level.

NMED has amended Figure 7 to illustrate confirmation sample locations where the Permittee must collect confirmation samples. The Permittee must collect soil samples at the locations shown on Figure 7 as well as at any locations where field screening (visual, olfactory) indicates evidence of contamination. The additional confirmation sampling is limited in scope and only covers areas where confirmation samples have not been collected. The samples must be submitted to a laboratory for DRO analysis by EPA method 8015.

NMED received the Permittee's July 19, 2010 letter entitled *NMED's Notice of Disapproval Railroad Rack Lagoon Overflow Ditch and Fan-Out Area, SWMU No. 8 Subsurface Investigation Final Report* (Extension Request) by email. The letter requests an extension for the submittal of the Report. NMED approves the extension request with the following modifications. The Permittee must collect the additional confirmation samples and address all comments contained in NMED's May 12, 2010 *Notice of Disapproval* and submit a revised Report to NMED on or before September 30, 2010.

The revised Report must be accompanied by a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments. In addition, the Permittees must submit a redline-strikeout version that includes all changes and edits to the Report (electronic copy) with the response to this NOD.

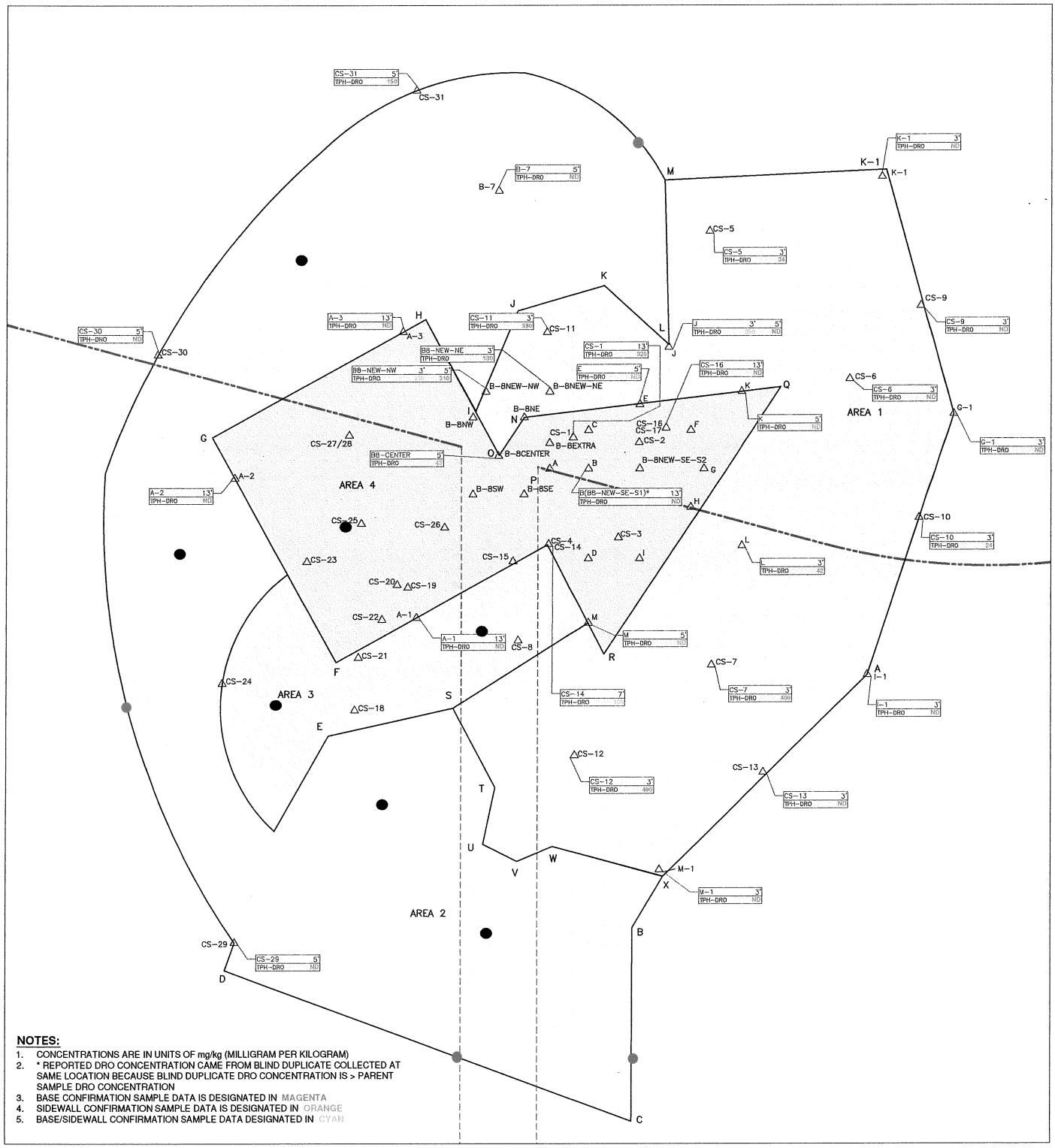
If you have questions regarding this NOD please contact Kristen Van Horn of my staff at 505-476-6046.

Sincerely,

James P. Bearzi
Chief
Hazardous Waste Bureau

cc: J. Kieling NMED HWB
D. Cobrain NMED HWB
H. Monzeglio NMED HWB
K. Van Horn NMED HWB
C. Chavez, OCD
R. Gaurav, Gallup

File: Reading File and WRG 2010 File
HWB-WRG-10-002



NOTES:

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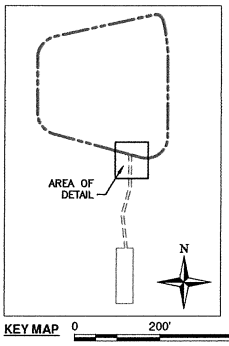
4. SIDEWALL CONFIRMATION SAMPLE DATA IS DESIGNATED IN ORANGE
5. BASE/SIDEWALL CONFIRMATION SAMPLE DATA DESIGNATED IN CYAN



KEY MAP 0 200' 400'

EXPLANATION

AREA 1	EXCAVATED TO 3 FEET
AREA 2	EXCAVATED TO 5 FEET
AREA 3	EXCAVATED TO 7 FEET
AREA 4	EXCAVATED TO 13 FEET
———	ACTUAL EXCAVATION BOUNDARY
- - - - -	OUTFLOW DITCH
——·——·——	FAN-OUT AREA
———	RAILROAD RACK LAGOON
ND	NON DETECT
*	A(B8-NEW-SE) = MAY EVENT(AUGUST EVENT) B(B8-NEW-SE-S1) = MAY EVENT(AUGUST EVENT)
△M-1	SAMPLE LOCATION AND DESIGNATION

CONFIRMATION SAMPLES
● SIDEWALL SAMPLE
● BASE EXCAVATION SAMPLE

N

0 5' 10'

CONSTITUENT TABLE EXPLANATION

SAMPLE ID — M-1 3' — SAMPLE DEPTH
TOTAL PETROLEUM HYDROCARBONS AS DIESEL RANGE ORGANICS — TPH-DRO ND — CONCENTRATION

Trihydro CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 7
RAILROAD RACK LAGOON OVERFLOW DITCH
B-8 FINAL BASE AND SIDEWALL CONFIRMATION
SAMPLE DRO RESULTS
WESTERN REFINING
GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: REP	Checked By: GP	Scale: AS SHOWN	Date: 6/2/2010	File: 697-SOIL-BS-201005

APPENDIX K

WESTERN APPROVAL OF ADDITIONAL SOIL CONFIRMATION SAMPLING

AUGUST 2010

August 9, 2010

Kristen Van Horn
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

RE: NMED's "Direction for Additional Soil Confirmation Sample Collection and Approval of Extension Request, Railroad Rack Lagoon Overflow Ditch and Fan-Out Area
SWMU No. 8 Subsurface Investigation Final Report
Western Refining Company Southwest, Inc., Gallup Refinery
EPA Id # NMD000333211 HWB-WRG-10-002"

Dear Ms. Van Horn:

The purpose of this letter is to respond to the New Mexico Environment Department's (NMED) *Direction for Additional Soil Confirmation Sample Collection and Approval of Extension Request, Railroad Rack Lagoon Overflow Ditch and Fan-Out Area, SWMU No. 8 Subsurface Investigation Final Report, Western Refining Company Southwest, Inc., Gallup Refinery EPA ID # NMD000333211 HWB-WRG-10-002* (Direction for Additional Sampling), dated July 28, 2010. The *Railroad Rack Lagoon Overflow Ditch and Fan-Out Area, SWMU No. 8, Subsurface Investigation Final Report* (Report) was submitted on behalf of Western Refining Company Southwest Inc., Gallup Refinery (Western) on January 6, 2010. NMED issued comments to the Report in a *Notice of Disapproval* (NOD), dated May 12, 2010. Western responded to NMED's NOD comments in a correspondence dated June 22, 2010. NMED's July 28 Direction for Additional Sampling was issued in response to Western's June 22 correspondence.

In the Direction for Additional Sampling, NMED requested that Western collect 11 additional confirmation samples to confirm that soil exceeding NMED's Diesel Range Organic (DRO) clean up standard of 890 mg/kg has been removed from the Fan-Out Area. Western agrees to collect the additional confirmation samples at the NMED-proposed locations. Western assumes that NMED's other NOD comments have been adequately addressed in Western's June 22 correspondence. Previously approved sample collection techniques (i.e. collecting samples using a hand auger, spade, or back hoe bucket) will be utilized.

NMED requested that additional sampling be conducted and the revised Report be submitted on or before September 30, 2010. If the results of the additional confirmation sampling are below the clean up standard, Western should be able to meet this deadline. However, if confirmation sampling suggests that additional excavation is required, an additional extension may be needed. Should this situation arise,

Western will contact NMED to discuss the volume of soil requiring excavation and the time needed to perform this work.

Western has begun making preparations for the additional confirmation sampling. The Report will be revised to include the results of the additional confirmation sampling. Other Report revisions described in Western's June 22 correspondence will also be made. The revised Report will be accompanied by a response letter detailing where revisions have been made, cross-referencing NMED's numbered comments. A redline-strikeout version that includes changes and edits to the report (electronic copy) will also be submitted.

If you have any questions, or if we can be of further service to you, please do not hesitate to call me at (505) 722-0217.

Sincerely,
Western Refining Company

Ed Riege
Environmental Superintendent

Attachments

c: H. Monzeglio NMED HWB
C. Chavez, OCD

APPENDIX L

PHOTO DOCUMENTATION

APPENDIX G. PHOTO DOCUMENTATION
GALLUP REFINERY, GALLUP, NEW MEXICO

Photo 1. B9 - Before 2 foot sample location

Photo 2. B9 - 2 foot sample hole with hand auger

Photo 3. B8 - Before 2 foot sample location

Photo 4. B8 - 2 foot sample hole with hand auger

Photo 5. B7 - Before 2 foot sample location

Photo 6. B7 - 2 foot sample hole with hand auger

Photo 7. B9 - 5 foot sample location with hand auger

Photo 8. B8 - 5 foot sample location with hand auger

Photo 9. B8 - 4 foot hole with hand auger, whiteboard, samples

Photo 10. B9 - 4 foot hole with hand auger, whiteboard, samples

Photo 11. B7 - 4 foot hole, whiteboard, samples

Photo 12. Original stake B8 looking North

Photo 13. Original stake B9 looking North

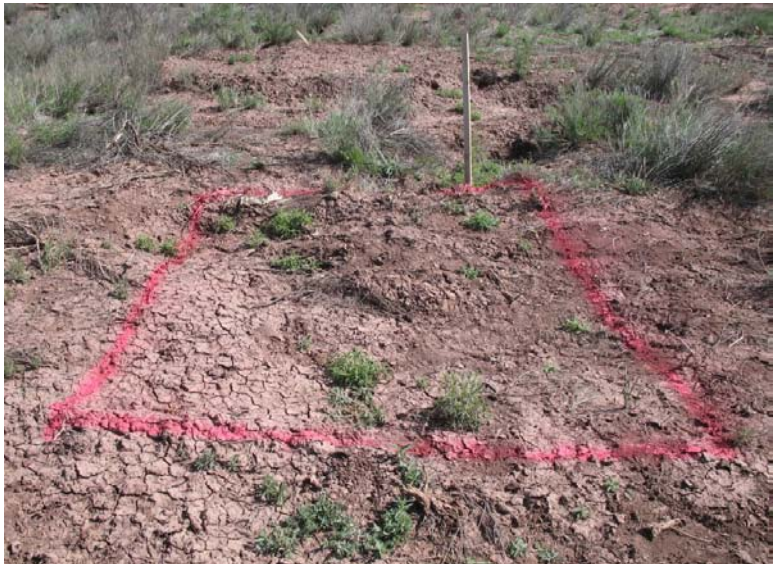


Photo 14. Excavation boundary at B8 looking North

Photo 15. Excavation boundary at B9 (9' x 7') with stakes (4' x 6')

Photo 16. B8 sample locations/spoil pile

Photo 17. B9 sample locations/spoil pile

Photo 18. B8 - Black staining (intact)

Photo 19. B8 - Black staining broken (not evident on fresh surface)

Photo 20. B8 - Showing original Southwest corner and B8 new

Photo 21. B8 - Regina "cleaning" B8 new NE to collect undisturbed sample (3')

Photo 22. B8 new NE ' - Sample collection/clean surface

Photo 23. B8 new NE 5' - Sample collection procedure with geoprobe

Photo 24. B8 new NE 5' - Sample on whiteboard: first half

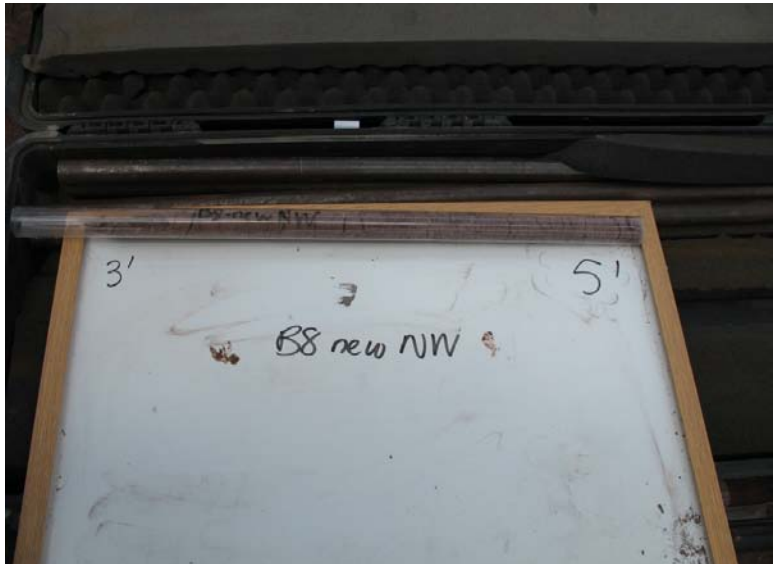


Photo 25. B8 new NW 5' - Sample on whiteboard: first half

Photo 26. B8 new SE 5' - Sample on whiteboard: first half

Photo 27. B9 Center - Sample with geoprobe

Photo 28. B9 new Center 5' - Sample on whiteboard: first half

Photo 29. B8 new SE S1 - 0' to 2' bgs

Photo 30. B8 new SE S1 - 2' to 4' bgs

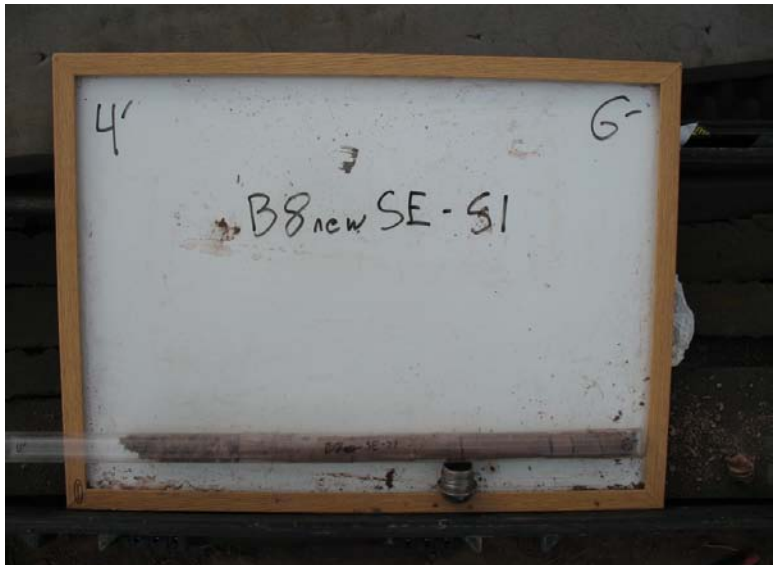


Photo 31. B8 new SE S1 - 4' to 6' bgs

Photo 32. B8 new SE S2 - 0' to 2' bgs

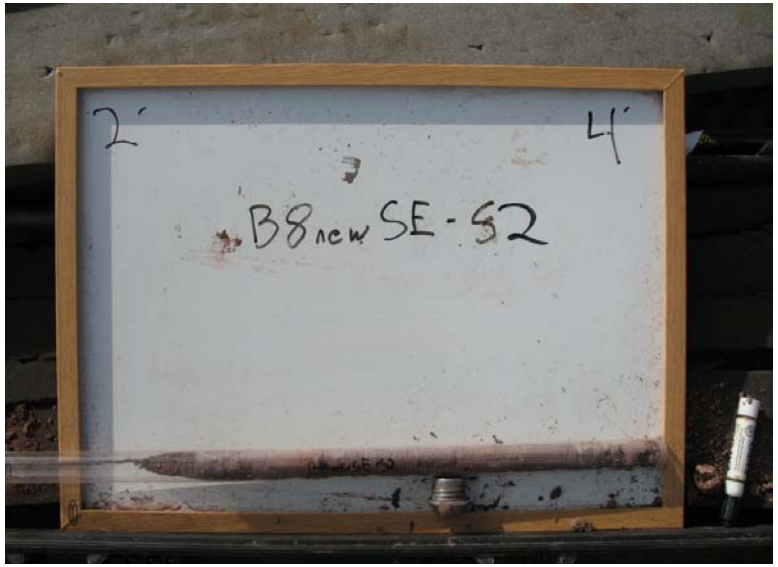


Photo 33. B8 new SE S2 - 2' to 4' bgs

Photo 34. B8 new SE S2 - 4' to 6'

Photo 35. B8 new - Excavated to 5' bgs, shovel in picture is 4' 9", 51/52 stakes in place

Photo 36. B9 new - Excavated to 5' bgs, shovel in picture is 4' 9"

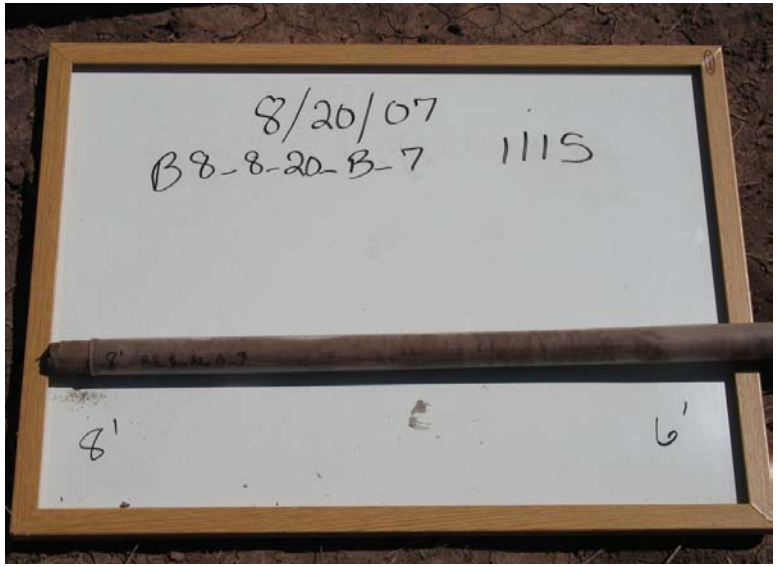


Photo 37. B8_8_20_B_7 - 6' to 8' bgs

Photo 38. B8_8_20_B_9 - 8' to 10' bgs (missing "B" on whiteboard)

Photo 39. B8_8_20_D - 0' to 2' bgs

Photo 40. B8_8_20_D - 2' to 4' bgs

Photo 41. B8_8_20_D_5' - 4' to 6' bgs

Photo 42. B8_8_20_D_7' - 6' to 8' bgs

Photo 43. B8_8_20_C - 0' to 2' bgs

Photo 44. B8_8_20_C - 2' to 4' bgs

Photo 45. B8_8_20_C - 4' to 6' bgs

Photo 46. B8_8_20_C - 6' to 8' bgs

Photo 47. B8_8_20_A - 5' to 6' bgs

Photo 48. B8_8_20_A - 6' to 8' bgs

Photo 49. B8_8_20_A - 8' to 10' bgs

Photo 50. B8_8_20_E - 0' to 2' bgs

Photo 51. B8_8_20_E - 2' to 4' bgs

Photo 52. B8_8_20_E - 4' to 6' bgs

Photo 53. B8_8_20_E - 0' to 2' bgs

Photo 54. B8_8_20_E - 2' to 4' bgs

Photo 55. B8_8_20_E - 4' to 6' bgs

Photo 56. B8_8_20_G - 0' to 2' bgs

Photo 57. B8_8_20_G - 2' to 4' bgs

Photo 58. B8_8_20_G - 6' to 8' bgs

Photo 59. B8_8_20_M - 0' to 2' bgs

Photo 60. B8_8_20_M - 2' to 4'bgs

Photo 61. B8_8_20_M - 4' to 6' bgs

Photo 62. B8_8_20_K - 0' to 2' bgs

Photo 63. B8_8_20_K - 2' to 4' bgs

Photo 64. B8_8_20_K - 4' to 6' bgs

Photo 65. B8_8_21_J - 0' to 2' bgs, 11" base

Photo 66. B8_8_21_J - 2' to 4' bgs

Photo 67. B8_8_21_J - 4' to 6' bgs

Photo 68. All stakes but 3 under spoil pile

Photo 69. B8_8_21_I - 0' to 2' bgs

Photo 70. B8_8_20_I - 2' to 4' bgs

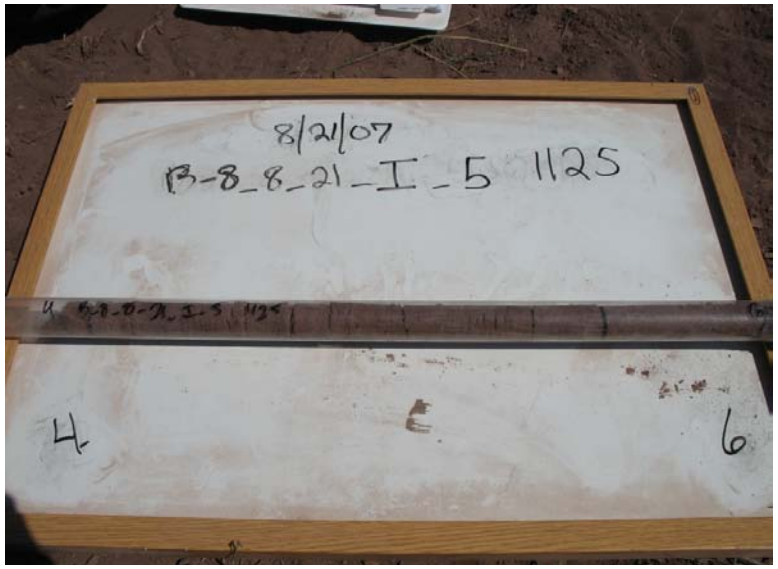


Photo 71. B8_8_20_I - 4' to 6' bgs

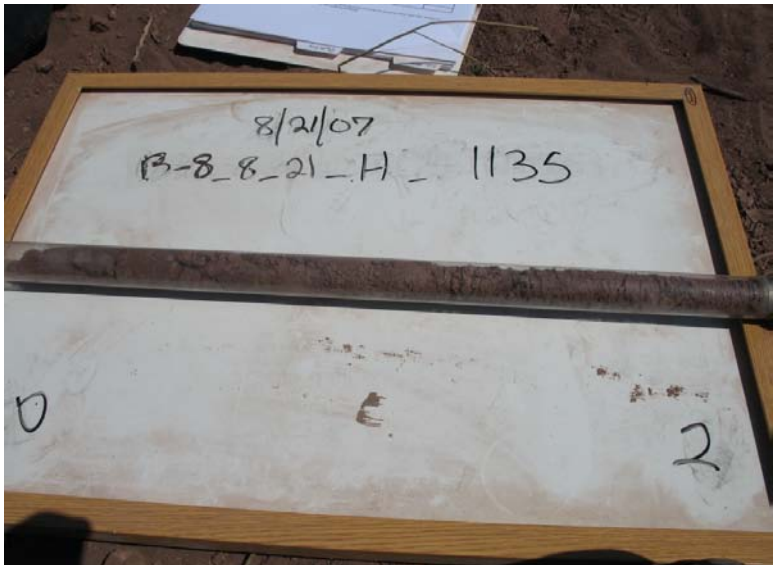


Photo 72. B8_8_21_H - 0' to 2' bgs

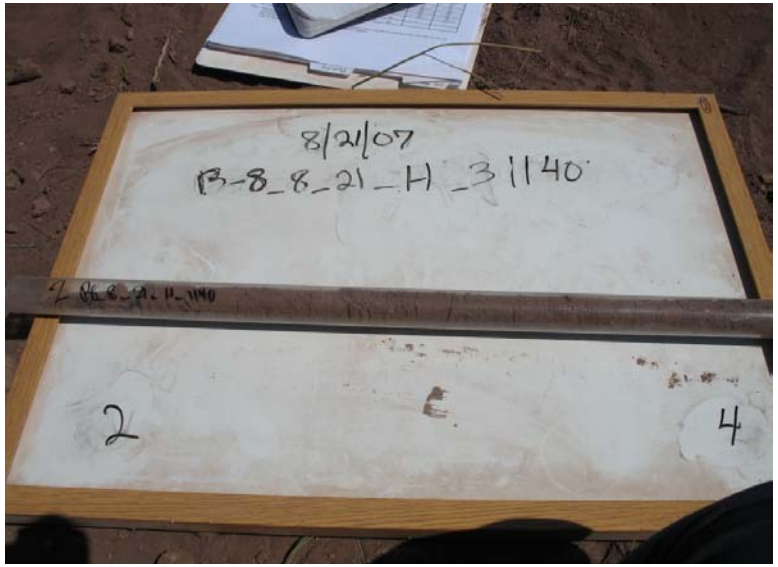


Photo 73. B8_8_21_H - 2' to 4' bgs

Photo 74. B8_8_21_H - 4' to 6' bgs

Photo 75. B8_8_21_L - 0' to 2' bgs

Photo 76. B8_8_21_L - 2' to 4' bgs

Photo 77. B8_8_21_L - 4' to 6' bgs

Photo 78. Final picture of all stakes

Photo 79. B8_12_17_B_8 - 8 feet bgs

Photo 80. B8_12_17_B_13 - 13 feet bgs

Photo 81. B8_12_17_B_18 - 18 feet bgs

Photo 82. B8_12_17_B_23 - 23 feet bgs

Photo 83. B8_12_17_M1_3 - 3 feet bgs

Photo 84. B8_12_17_M1_8 - 8 feet bgs

Photo 85. B8_12_17_M1_13 - 13 feet bgs

Photo 86. B8_12_17_I1_3 - 3 feet bgs

Photo 87. B8_12_17_I1_8 - 8 feet bgs

Photo 88. B8_12_17_I1_13 - 13 feet bgs

Photo 89. B8_12_17_G1_3 - 3 feet bgs

Photo 90. B8_12_17_G1_8 - 8 feet bgs

Photo 91. B8_12_17_G1_13 - 13 feet bgs

Photo 92. B8_12_17_K1_3 - 3 feet bgs

Photo 93. B8_12_17_K1_8 - 8 feet bgs

Photo 94. B8_12_17_K1_13 - 13 feet bgs

Photo 95. Looking North, excavation before work began

Photo 96. Looking Northwest and down, showing 13' markings

Photo 97. Looking Northwest, showing 5' and 13' markings

Photo 98. Looking North, showing 3', 5', and 13' markings

Photo 99. Sample CS-2 at 1450

Photo 100. Sample CS-1 at 1610; denoted as C-1 in photo

Photo 101. Looking Northwest, 5' remarked excavation prior to excavation

Photo 102. Sample CS-3

Photo 103. Sample CS-4

Photo 104. Looking North, 3' excavation markings

Photo 105. Sample CS-6 at 1705

Photo 106. Sample CS-9

Photo 107. Looking North, additional excavation area 7' and extended 3' areas are marked

Photo 108. Sample CS-8 on whiteboard at 1305

Photo 109. Sample CS-15 on whiteboard at 1312

Photo 110. Sample CS-14 on whiteboard at 1328

Photo 111. Sample CS-17 on whiteboard at 1610

Photo 112. North wall of 13' excavation - potential staining

Photo 113. Sample CS-16, 13' at 1325

Photo 114. Sample CS-11 on whiteboard at 1520

Photo 115. Sample CS-5 on whiteboard at 1540

Photo 116. Sample CS-10 on whiteboard at 1630

Photo 117. Sample CS-7 on whiteboard at 1715

Photo 118. Sample CS-12 on whiteboard at 1733

Photo 119. Sample CS-16 on whiteboard at 1515

Photo 120. Sample CS-18 on whiteboard at 1615

Photo 121. Sample CS-19 on whiteboard at 1625

Photo 122. Looking North; excavation as of 1630 4/23/09; excavating extra 7' area

Photo 123. Looking South; excavation as of 1630 4/23/09; excavating extra 7' area

Photo 124. Looking down and South; excavation, showing closer view of 13', 7', and 3' area

Photo 125. Sample CS-20 in backhoe bucket

Photo 126. Sample CS-20 on whiteboard

Photo 127. Sample CS-21 in backhoe bucket

Photo 128. Sample CS-21 on whiteboard

Photo 129. Excavation with updated stake markers looking North

Photo 130. Excavation with updated stake markers looking North

Photo 131. Excavation with updated stake markers looking North-Northwest

Photo 132. Excavation pit looking East showing excavation area for CS-22 through CS-24

Photo 133. Stitch assist photo of excavation looking East

Photo 134. Stitch assist photo of excavation looking East

Photo 135. Stitch assist photo of excavation looking East-Southeast

Photo 136. Stitch assist photo of excavation looking East-Southeast

Photo 137. Sample CS-22 on whiteboard

Photo 138. Sample CS-23 on whiteboard

Photo 139. Sample CS-24 on whiteboard

Photo 140. CS-25 sample location

Photo 141. CS-25 soil

Photo 142. CS-26 sample location

Photo 143. CS-26 soil

Photo 144. CS-27 sample location

Photo 145. CS-27 soil

Photo 146. CS-28 sample location

Photo 147. CS-28 soil

Photo 148. Final excavation looking south

Photo 149. Final excavation looking southeast

Photo 150. Final excavation looking east

Photo 151. Final excavation looking northeast

Photo 152. Final excavation looking north

Photo 153. Final excavation looking northwest

Photo 154. Final excavation looking west

Photo 155. Final excavation looking southwest

Photo 156. Fan-Out Area, pre-August 2010 sampling, looking north

Photo 157. Fan-Out Area, pre-August 2010 sampling, looking south

Photo 158. Collecting Confirmation Soil Sample CS-36, looking west

Photo 159. Collecting Confirmation Soil Sample CS-38, looking northeast

Photo 160. Collecting Confirmation Soil Sample CS-39, looking north

Photo 161. Collecting Confirmation Soil Sample CS-40, looking northwest

Photo 162. Collecting Confirmation Soil Sample CS-42, looking north

Photo 163. Collecting Confirmation Soil Sample CS-41, looking southwest

Photo 164. Collecting Confirmation Soil Sample CS-33, looking south

Photo 165. Collecting Confirmation Soil Sample CS-32, looking north

Photo 166. Collecting Confirmation Soil Sample CS-34, looking northeast

Photo 167. Collecting Confirmation Soil Sample CS-37, looking southeast

Photo 168. Collecting Confirmation Soil Sample CS-35, looking north

APPENDIX M

NMED CLEANUP STANDARDS

A TPH screening guideline was calculated for each of the types of petroleum product based on the assumed composition from Table 1 for petroleum products and the direct soil standards incorporating ceiling concentrations given in the MADEP VPH/EPH Excel spreadsheet for each of the carbon fractions. Groundwater concentrations are based on the weighted sum of the noncarcinogenic toxicity of the petroleum fractions.

Method 1 from the MADEP VPH/EPH document was applied, which represents generic cleanup standards for soil and groundwater. Method 1 applies if contamination exists in only soil and groundwater. The MADEP VPH/EPH further divides groundwater into standards. Standard GW-1 applies when groundwater may be used for drinking water purposes. GW-1 standards are based upon ingestion and use of groundwater as a potable water supply. The TPH screening guidelines for sites with potable groundwater are presented in Table 2a.

Table 2a. TPH Screening Guidelines for Potable Groundwater (GW-1)

TPH			Concentration in Groundwater (mg/L)
Petroleum Product	**Residential Direct Exposure (mg/kg)**	**Industrial Direct Exposure (mg/kg)**	
Diesel #2/crankcase oil	520	1120	1.72
#3 and #6 Fuel Oil	440	890	1.34
Kerosene and jet fuel	760	1810	2.86
Mineral oil dielectric fluid	1440	3040	3.64
Unknown oil [a]	200	200	0.2
Waste Oil [b]	2500	5000	Petroleum-Related Contaminants
Gasoline	Not applicable	Not applicable	Petroleum-Related Contaminants

[a] Sites with oil from unknown sources must be tested for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, and polychlorinated biphenyls (PCBs) to determine if other potentially toxic constituents are present. The TPH guidelines in Table 2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.

[b] Compositional assumption for waste oil developed by NMED is based on review of chromatographs of several types of waste oil. Sites with waste oil must be tested for VOCs, SVOCs, metals, and PCBs to determine if other potentially toxic constituents are present. The TPH guidelines in Table 2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.

The second standard is GW-2, which is applicable for sites where the depth to groundwater is less than 15 feet from the ground surface and within 30 feet of an occupied structure. The structure may be either residential or industrial. GW-2 standards are based upon "inhalation exposures that could occur to occupants of the building impacted by volatile compounds, which partition from the groundwater" (MADEP 2001). The GW-2 screening guidelines ONLY apply for the evaluation of inhalation exposures. If potential ingestion or contact with contaminated soil and/or

Table A-1: NMED Soil Screening Levels

Chemical	Residential Soil (mg/kg)	End-point	Industrial/ Occupational Soil (mg/kg)	End-point	Construction Worker Soil (mg/kg)	End-point	VOC	Tap Water (ug/L)	End-point	DAF 1 (mg/kg)	DAF 20 (mg/kg)
Acenaphthene	3.73E+03	nc	3.35E+04	nc	1.41E+04	nc	x	3.65E+02	nc	2.75E+00	5.49E+01
Acetaldehyde	1.06E+02	nc	3.84E+02	nc	3.45E+02	nc	x	1.72E+01	ca		
Acetone	2.81E+04	nc	1.00E+05	max	9.85E+04	nc	x	5.48E+03	nc	9.55E-01	1.91E+01
Acrylonitrile	4.27E+00	ca	1.26E+01	ca	5.75E+01	nc	x	3.81E-01	ca	6.68E-05	1.34E-03
Acetophenone	1.48E+03	sat	1.48E+03	sat	1.48E+03	sat	x	6.08E+02	nc	1.48E-01	2.95E+00
Acrolein	2.06E-01	nc	7.52E-01	nc	6.75E-01	nc	x	4.16E-02	nc	8.55E-06	1.71E-04
Aldrin	2.84E-01	ca	1.12E+00	ca	6.99E+00	nc		3.87E-02	ca	1.42E-01	2.84E+00
Aluminum	7.78E+04	nc	1.00E+05	max	1.44E+04	nc		3.65E+04	nc	5.48E+04	1.10E+06
Anthracene	2.20E+04	nc	1.00E+05	max	8.60E+04	nc	x	1.83E+03	nc	8.11E+01	1.62E+03
Antimony	3.13E+01	nc	4.54E+02	nc	1.24E+02	nc		1.46E+01	nc	6.61E-01	1.32E+01
Arsenic	3.90E+00	ca	1.77E+01	ca	8.52E+01	nc		4.42E-01	ca	1.45E-02	2.90E-01
Barium	1.56E+04	nc	1.00E+05	max	6.02E+04	nc		7.30E+03	nc	3.01E+02	6.03E+03
Benzene	1.03E+01	ca	2.58E+01	ca	1.74E+02	nc	x	3.49E+00	ca	1.00E-03	2.01E-02
Benzidine	2.11E-02	ca	8.33E-02	ca	7.09E-01	ca		2.89E-03	ca	1.24E-05	2.47E-04
Benzo(a)anthracene	6.21E+00	ca	2.34E+01	ca	2.12E+02	ca		9.09E-01	ca	5.43E-01	1.09E+01
Benzo(a)pyrene	6.21E-01	ca	2.34E+00	ca	2.12E+01	ca		9.09E-02	ca	1.39E-01	2.78E+00
Benzo(b)fluoranthene	6.21E+00	ca	2.34E+01	ca	2.12E+02	ca		9.09E-01	ca	1.68E+00	3.35E+01
Benzo(k)fluoranthene	6.21E+01	ca	2.34E+02	ca	2.12E+03	ca		9.09E+00	ca	1.68E+01	3.35E+02
Beryllium	1.56E+02	nc	2.25E+03	nc	5.62E+01	nc		7.30E+01	nc	5.77E+01	1.15E+03
a-BHC (HCH)	9.02E-01	ca	3.99E+00	ca	3.00E+01	ca		1.05E-01	ca	2.13E-04	4.25E-03
b-BHC (HCH)	3.16E+00	ca	1.40E+01	ca	5.39E+01	nc		3.69E-01	ca	7.61E-04	1.52E-02
g-BHC	4.37E+00	ca	1.93E+01	ca	8.09E+01	nc		5.10E-01	ca	9.08E-04	1.82E-02
1,1-Biphenyl	3.08E+03	nc	2.73E+04	nc	1.17E+04	nc	x	3.04E+02	nc	3.61E+00	7.22E+01
Bis(2-chloroethyl) ether	2.44E+00	ca	7.45E+00	ca	1.05E+02	ca	x	9.65E-02	ca	2.77E-05	5.55E-04
Bis(2-chloroisopropyl) ether	3.87E+01	ca	1.19E+02	ca	4.53E+02	sat	x	2.71E+00	ca	7.21E-04	1.44E-02
Bis(2-ethylhexyl) phthalate	3.47E+02	ca	1.37E+03	ca	4.66E+03	nc		4.74E+01	ca	1.07E+03	2.15E+04
Bis(chloromethyl) ether	4.72E-03	ca	1.23E-02	ca	2.32E-01	ca	x	5.09E-04	ca	8.95E-08	1.79E-06
Boron	1.56E+04	nc	1.00E+05	max	3.09E+04	nc		7.30E+03	nc	2.40E+01	4.80E+02
Bromobenzene	3.70E+01	nc	1.37E+02	nc	1.21E+02	nc	x	2.06E+01	nc	1.07E-02	2.14E-01
Bromodichloromethane	1.44E+01	ca	3.72E+01	ca	7.17E+02	ca	x	1.78E+00	ca	5.90E-04	1.18E-02

Chemical	Residential Soil (mg/kg)	End-point	Industrial/ Occupational Soil (mg/kg)	End-point	Construction Worker Soil (mg/kg)	End-point	VOC	Tap Water (ug/L)	End-point	DAF 1 (mg/kg)	DAF 20 (mg/kg)
Bromomethane	8.51E+00	nc	3.28E+01	nc	2.82E+01	nc	x	8.66E+00	nc	1.87E-03	3.74E-02
1,3-Butadiene	9.93E-01	ca	2.38E+00	ca	4.59E+00	nc	x	1.26E+00	ca		
2-Butanone (MEK)	3.18E+04	nc	4.87E+04	sat	4.87E+04	sat	x	7.06E+03	nc	1.27E+00	2.55E+01
tert-Butyl methyl ether (MTBE)	3.88E+02	ca	9.84E+02	ca	1.96E+04	ca	x	6.14E+01	ca		
n-Butylbenzene	6.21E+01	sat	6.21E+01	sat	6.21E+01	sat	x	6.08E+01	nc	2.70E-01	5.40E+00
sec-Butylbenzene	6.06E+01	sat	6.06E+01	sat	6.06E+01	sat	x	6.08E+01	nc	2.17E-01	4.33E+00
tert-Butylbenzene	1.06E+02	sat	1.06E+02	sat	1.06E+02	sat	x	6.08E+01	nc	2.15E-01	4.30E+00
Cadmium	3.90E+01	nc	5.64E+02	nc	1.54E+02	nc		1.83E+01	nc	1.37E+00	2.75E+01
Carbon disulfide	4.60E+02	sat	4.60E+02	sat	4.60E+02	sat	x	1.04E+03	nc	3.95E-01	7.89E+00
Carbon tetrachloride	3.47E+00	ca	8.64E+00	ca	1.80E+02	ca	x	1.69E+00	ca	9.74E-04	1.95E-02
Chlordane	1.62E+01	ca	7.19E+01	ca	1.30E+02	nc		1.90E+00	ca	3.42E-01	6.83E+00
2-Chloroacetophenone	4.25E-02	nc	1.62E-01	nc	1.41E-01	nc	x	5.22E-02	nc	4.37E-05	8.75E-04
2-Chloro-1,3-butadiene	6.32E+00	nc	2.30E+01	nc	2.06E+01	nc	x	1.43E+01	nc	5.66E-03	1.13E-01
1-Chloro-1,1-difluoroethane	2.11E+02	sat	2.11E+02	sat	2.11E+02	sat	x	8.66E+04	nc	6.28E+01	1.26E+03
Chlorobenzene	1.94E+02	nc	2.45E+02	sat	2.45E+02	sat	x	1.06E+02	nc	5.50E-02	1.10E+00
1-Chlorobutane	1.22E+02	nc	2.99E+02	sat	2.99E+02	sat	x	2.43E+02	nc	9.63E-02	1.93E+00
Chlorodifluoromethane	2.11E+02	sat	2.11E+02	sat	2.11E+02	sat	x	9.75E+04	nc	7.07E+01	1.41E+03
Chloroethane	6.33E+01	ca	1.54E+02	ca	1.42E+03	sat	x	3.81E+01	ca	9.41E-03	1.88E-01
Chloroform	4.00E+00	ca	9.59E+00	ca	2.16E+02	ca	x	1.65E+00	ca	4.12E-04	8.25E-03
Chloromethane	2.18E+01	ca	5.34E+01	ca	2.84E+02	nc	x	1.49E+01	ca	5.02E-03	1.00E-01
b-Chloronaphthalene	3.99E+03	nc	2.78E+04	nc	1.47E+04	nc	x	4.87E+02	nc	1.25E+00	2.51E+01
o-Chloronitrobenzene	1.49E+00	nc	5.48E+00	nc	4.88E+00	nc	x	1.45E-01	nc	3.94E-05	7.88E-04
p-Chloronitrobenzene	1.05E+01	nc	4.23E+01	nc	3.51E+01	nc	x	1.20E+00	nc	3.25E-04	6.51E-03
2-Chlorophenol	1.66E+02	nc	8.85E+02	nc	5.86E+02	nc	x	3.04E+01	nc	2.36E-02	4.72E-01
2-Chloropropane	2.83E+02	nc	7.05E+02	sat	7.05E+02	sat	x	1.76E+02	nc	4.60E-02	9.19E-01
o-Chlorotoluene	2.02E+02	sat	2.02E+02	sat	2.02E+02	sat	x	1.22E+02	nc	5.22E-02	1.04E+00
Chromium III	1.00E+05	max	1.00E+05	max	1.00E+05	max		5.48E+04	nc	9.86E+07	1.97E+09
Chromium VI	2.34E+02	nc	3.40E+03	nc	2.61E+01	ca		1.10E+02	nc	2.10E+00	4.20E+01
Chrysene	6.15E+02	ca	2.31E+03	ca	2.12E+04	ca	x	2.91E+01	ca	1.74E+01	3.48E+02
Cobalt	1.52E+03	nc	2.05E+04	nc	6.10E+01	nc		7.30E+02	nc	3.31E+01	6.61E+02
Copper	3.13E+03	nc	4.54E+04	nc	1.24E+04	nc		1.46E+03	nc	5.15E+01	1.03E+03
Crotonaldehyde	7.01E-02	ca	1.70E-01	ca	3.73E+00	ca	x	5.82E-02	ca	1.49E-04	2.99E-03

Chemical	Residential Soil (mg/kg)	End-point	Industrial/ Occupational Soil (mg/kg)	End-point	Construction Worker Soil (mg/kg)	End-point	VOC	Tap Water (ug/L)	End-point	DAF 1 (mg/kg)	DAF 20 (mg/kg)
Cumene (isopropylbenzene)	2.71E+02	nc	3.89E+02	sat	3.89E+02	sat	x	6.78E+02	nc	4.10E+00	8.21E+01
Cyanide	1.22E+03	nc	1.37E+04	nc	4.76E+03	nc		7.30E+02	nc	7.35E+00	1.47E+02
Cyanogen	1.71E+03	sat	1.71E+03	sat	1.71E+03	sat	x	1.46E+03	nc	2.91E-01	5.82E+00
Cyanogen bromide	2.02E+03	sat	2.02E+03	sat	2.02E+03	sat	x	3.29E+03	nc	7.76E-01	1.55E+01
Cyanogen chloride	2.02E+03	sat	2.02E+03	sat	2.02E+03	sat	x	1.83E+03	nc	4.31E-01	8.62E+00
DDD	2.44E+01	ca	1.11E+02	ca	8.07E+02	ca		2.77E+00	ca	4.15E+00	8.30E+01
DDE	1.72E+01	ca	7.81E+01	ca	5.70E+02	ca		1.95E+00	ca	1.31E+01	2.62E+02
DDT	1.72E+01	ca	7.81E+01	ca	1.38E+02	nc		1.95E+00	ca	7.70E+00	1.54E+02
Dibenz(a,h)anthracene	6.21E-01	ca	2.34E+00	ca	2.12E+01	ca		9.09E-02	ca	5.18E-01	1.04E+01
Dibenzofuran	1.42E+02	nc	1.62E+03	nc	5.52E+02	nc	x	1.22E+01	nc	1.44E-01	2.87E+00
1,2-Dibromo-3-chloropropane	1.84E+00	nc	9.68E+00	nc	6.48E+00	nc	x	3.47E-01	nc	1.49E-04	2.98E-03
Dibromochloromethane	1.48E+01	ca	3.95E+01	ca	7.16E+02	ca	x	1.32E+00	ca	3.58E-04	7.16E-03
1,2-Dibromoethane	5.04E-01	ca	1.31E+00	ca	2.48E+01	ca	x	5.53E-02	ca	1.20E-05	2.40E-04
1,4-Dichloro-2-butene	1.22E-01	ca	3.23E-01	ca	5.97E+00	ca	x	1.19E-02	ca	2.93E-06	5.87E-05
1,2-Dichlorobenzene	3.74E+01	sat	3.74E+01	sat	3.74E+01	sat	x	4.96E+01	nc	1.19E-02	2.37E-01
1,3-Dichlorobenzene	3.26E+01	nc	3.74E+01	sat	3.74E+01	sat	x	1.83E+01	nc	4.36E-03	8.73E-02
1,4-Dichlorobenzene	3.95E+01	ca	1.03E+02	ca	1.96E+03	ca	x	4.95E+00	ca	5.49E-03	1.10E-01
3,3-Dichlorobenzidine	1.08E+01	ca	4.26E+01	ca	3.63E+02	ca		1.47E+00	ca	1.86E-03	3.71E-02
Dichlorodifluoromethane	1.61E+02	nc	2.11E+02	sat	2.11E+02	sat	x	3.95E+02	nc	2.86E-01	5.72E+00
1,1-Dichloroethane	1.40E+03	nc	1.42E+03	sat	1.42E+03	sat	x	1.22E+03	nc	3.39E-01	6.79E+00
1,2-Dichloroethane	6.04E+00	ca	1.52E+01	ca	6.42E+01	nc	x	1.22E+00	ca	2.85E-04	5.71E-03
cis-1,2-Dichloroethene	7.65E+01	nc	3.00E+02	nc	2.54E+02	nc	x	6.08E+01	nc	1.49E-02	2.99E-01
trans-1,2-Dichloroethene	1.12E+02	nc	4.29E+02	nc	3.70E+02	nc	x	1.22E+02	nc	3.33E-02	6.67E-01
1,1-Dichloroethene	2.06E+02	nc	7.77E+02	nc	6.78E+02	nc	x	3.39E+02	nc	1.34E-01	2.68E+00
2,4-Dichlorophenol	1.83E+02	nc	2.05E+03	nc	6.99E+02	nc		1.10E+02	nc	4.31E-02	8.63E-01
1,2-Dichloropropane	6.00E+00	ca	1.49E+01	ca	3.33E+01	nc	x	1.63E+00	ca	4.10E-04	8.19E-03
1,3-Dichloropropene	1.20E+01	ca	3.17E+01	ca	8.98E+01	nc	x	3.90E+00	ca	1.16E-03	2.31E-02
Dicyclopentadiene	2.21E+01	nc	8.26E+01	nc	7.28E+01	nc	x	1.39E+01	nc	1.50E-02	3.00E-01
Dieldrin	3.04E-01	ca	1.20E+00	ca	1.02E+01	ca		4.15E-02	ca	1.34E-03	2.68E-02
Diethyl phthalate	4.89E+04	nc	1.00E+05	max	1.00E+05	max		2.92E+04	nc	1.77E+01	3.54E+02
Dimethyl phthalate	1.00E+05	max	1.00E+05	max	1.00E+05	max		3.65E+05	nc	8.36E+01	1.67E+03
Di-n-butyl phthalate	6.11E+03	nc	6.84E+04	nc	2.33E+04	nc		3.65E+03	nc	1.86E+02	3.72E+03

Chemical	Residential Soil (mg/kg)	End-point	Industrial/ Occupational Soil (mg/kg)	End-point	Construction Worker Soil (mg/kg)	End-point	VOC	Tap Water (ug/L)	End-point	DAF 1 (mg/kg)	DAF 20 (mg/kg)
2,4-Dimethylphenol	1.22E+03	nc	1.37E+04	nc	4.66E+03	nc		7.30E+02	nc	3.55E-01	7.11E+00
4,6-Dinitro-o-cresol	6.11E+00	nc	6.84E+01	nc	2.33E+01	nc		3.65E+00	nc	3.93E-03	7.85E-02
2,4-Dinitrophenol	1.22E+02	nc	1.37E+03	nc	4.66E+02	nc		7.30E+01	nc	5.25E-02	1.05E+00
2,4-Dinitrotoluene	1.22E+02	nc	1.37E+03	nc	4.66E+02	nc		7.30E+01	nc	2.31E-02	4.62E-01
1,2-Diphenylhydrazine	6.08E+00	ca	2.39E+01	ca	2.04E+02	ca		8.30E-01	ca	4.48E-03	8.95E-02
Endosulfan	3.67E+02	nc	4.10E+03	nc	1.40E+03	nc		2.19E+02	nc	7.41E-01	1.48E+01
Endrin	1.83E+01	nc	2.05E+02	nc	6.99E+01	nc		1.10E+01	nc	2.04E-01	4.08E+00
Epichlorohydrin	1.66E+01	nc	6.56E+01	nc	5.54E+01	nc	x	2.03E+00	nc	3.62E-04	7.25E-03
Ethyl acetate	2.10E+04	sat	2.10E+04	sat	2.10E+04	sat	x	5.48E+03	nc	1.44E+00	2.87E+01
Ethyl acrylate	2.79E+00	ca	6.75E+00	ca	5.22E+01	sat	x	2.30E+00	ca	5.86E-03	1.17E-01
Ethyl chloride	6.33E+01	ca	1.54E+02	ca	1.42E+03	sat	x	3.81E+01	ca	9.41E-03	1.88E-01
Ethyl ether	1.94E+03	sat	1.94E+03	sat	1.94E+03	sat	x	1.22E+03	nc	2.37E-01	4.73E+00
Ethyl methacrylate	5.27E+01	sat	5.27E+01	sat	5.27E+01	sat	x	5.48E+02	nc	1.41E+00	2.81E+01
Ethylbenzene	1.28E+02	sat	1.28E+02	sat	1.28E+02	sat	x	1.34E+03	nc	1.01E+00	2.02E+01
Ethylene oxide	2.65E+00	ca	8.07E+00	ca	1.15E+02	ca	x	2.41E-01	ca	4.27E-05	8.54E-04
Fluoranthene	2.29E+03	nc	2.44E+04	nc	8.73E+03	nc		1.46E+03	nc	2.35E+02	4.69E+03
Fluorene	2.66E+03	nc	2.65E+04	nc	1.02E+04	nc	x	2.43E+02	nc	2.93E+00	5.85E+01
Fluoride	3.67E+03	nc	4.10E+04	nc	1.43E+04	nc		2.19E+03	nc	3.29E+02	6.58E+03
Furan	5.53E+00	nc	2.12E+01	nc	1.83E+01	nc	x	6.08E+00	nc	1.32E-03	2.63E-02
Heptachlor	1.08E+00	ca	4.26E+00	ca	3.63E+01	ca		1.47E-01	ca	3.12E-01	6.24E+00
Hexachlorobenzene	3.04E+00	ca	1.20E+01	ca	1.02E+02	ca		4.15E-01	ca	3.43E-02	6.86E-01
Hexachloro-1,3-butadiene	1.22E+01	nc	1.37E+02	nc	4.66E+01	nc		7.30E+00	nc	5.90E-01	1.18E+01
Hexachlorocyclopentadiene	3.66E+02	nc	4.10E+03	nc	4.31E+02	nc		2.19E+02	nc	6.58E+01	1.32E+03
Hexachloroethane	6.11E+01	nc	6.84E+02	nc	2.33E+02	nc		3.65E+01	nc	1.04E-01	2.09E+00
n-Hexane	3.80E+01	sat	3.80E+01	sat	3.80E+01	sat	x	4.16E+02	nc	8.64E-01	1.73E+01
HMX	3.06E+03	nc	3.42E+04	nc	1.17E+04	nc		1.83E+03	nc	5.39E+00	1.08E+02
Hydrogen cyanide	2.24E+01	nc	8.22E+01	nc	7.33E+01	nc	x	6.20E+00	nc	1.24E-03	2.47E-02
Indeno(1,2,3-c,d)pyrene	6.21E+00	ca	2.34E+01	ca	2.12E+02	ca		9.09E-01	ca	4.73E+00	9.46E+01
Iron	2.35E+04	nc	1.00E+05	max	9.29E+04	nc		1.10E+04	nc	2.77E+02	5.54E+03
Isobutanol	1.38E+04	nc	2.26E+04	sat	2.26E+04	sat	x	1.83E+03	nc	4.86E-01	9.72E+00
Isophorone	5.12E+03	ca	2.02E+04	ca	4.66E+04	nc		6.99E+02	ca	1.70E-01	3.40E+00
Lead	4.00E+02	IEUBK	8.00E+02	IEUBK	8.00E+02	IEUBK					

Chemical	Residential Soil (mg/kg)	End-point	Industrial/ Occupational Soil (mg/kg)	End-point	Construction Worker Soil (mg/kg)	End-point	VOC	Tap Water (ug/L)	End-point	DAF 1 (mg/kg)	DAF 20 (mg/kg)
Lead (tetraethyl-)	6.11E-03	nc	6.84E-02	nc	2.38E-02	nc		3.65E-03	nc	6.33E-07	1.27E-05
Maleic hydrazide	1.61E+03	sat	1.61E+03	sat	1.61E+03	sat	x	3.04E+03	nc	8.12E-01	1.62E+01
Manganese	3.59E+03	nc	4.84E+04	nc	1.50E+02	nc		1.72E+03	nc	1.12E+02	2.24E+03
Mercury (elemental)	1.00E+05	max	1.00E+05	max	9.27E+02	nc				1.05E-01	2.09E-03
Mercury (methyl)	6.11E+00	nc	6.84E+01	nc	2.38E+01	nc		3.65E+00	nc	8.26E-04	1.65E-02
Methacrylonitrile	3.84E+00	nc	2.20E+01	nc	1.37E+01	nc	x	1.04E+00	nc	1.83E-04	3.65E-03
Methomyl	8.44E+01	nc	3.17E+02	nc	2.78E+02	nc	x	1.52E+02	nc	5.74E-02	1.15E+00
Methyl acetate	3.76E+04	nc	1.00E+05	max	1.00E+05	max	x	6.08E+03	nc	1.08E+00	2.15E+01
Methyl acrylate	9.28E+01	nc	1.57E+02	sat	1.57E+02	sat	x	1.83E+02	nc	4.64E-01	9.29E+00
Methyl isobutyl ketone	5.51E+03	nc	7.01E+03	sat	7.01E+03	sat	x	1.99E+03	nc	7.35E-01	1.47E+01
Methyl methacrylate	2.92E+03	sat	2.92E+03	sat	2.92E+03	sat	x	1.42E+03	nc	2.76E-01	5.52E+00
Methyl styrene (alpha)	2.17E+02	sat	2.17E+02	sat	2.17E+02	sat	x	4.26E+02	nc	3.08E-01	6.17E+00
Methyl styrene (mixture)	1.39E+02	nc	2.17E+02	sat	2.17E+02	sat	x	5.48E+01	nc	3.96E-02	7.93E-01
Methylcyclohexane	7.89E+01	sat	7.89E+01	sat	7.89E+01	sat	x	5.23E+03	nc	2.88E+01	5.77E+02
Methylene bromide	1.79E+02	nc	7.85E+02	nc	6.09E+02	nc	x	6.08E+01	nc	2.72E-02	5.44E-01
Methylene chloride	1.82E+02	ca	4.90E+02	ca	2.63E+03	sat	x	4.22E+01	ca	8.51E-03	1.70E-01
Molybdenum	3.91E+02	nc	5.68E+03	nc	1.55E+03	nc		1.83E+02	nc	3.70E+00	7.40E+01
Naphthalene	7.95E+01	nc	3.00E+02	nc	2.62E+02	nc	x	6.20E+00	nc	1.97E-02	3.94E-01
Nickel	1.56E+03	nc	2.27E+04	nc	6.19E+03	nc		7.30E+02	nc	4.77E+01	9.53E+02
Nitrate	1.00E+05	max	1.00E+05	max	1.00E+05	max		5.84E+04	nc	1.67E+01	3.35E+02
Nitrite	7.82E+03	nc	1.00E+05	max	3.10E+04	nc		3.65E+03	nc	7.63E-01	1.53E+01
Nitrobenzene	2.28E+01	nc	1.47E+02	nc	8.28E+01	nc	x	3.40E+00	nc	9.18E-04	1.84E-02
Nitroglycerin	3.47E+02	ca	1.37E+03	ca	1.17E+04	ca		4.74E+01	ca	2.80E-02	5.61E-01
N-Nitrosodiethylamine	3.24E-02	ca	1.28E-01	ca	1.09E+00	ca		4.42E-03	ca	8.73E-06	1.75E-04
N-Nitrosodimethylamine	9.54E-02	ca	3.76E-01	ca	1.86E+00	nc		1.30E-02	ca	1.17E-05	2.34E-04
N-Nitrosodi-n-butylamine	2.69E-01	ca	7.28E-01	ca	1.24E+01	ca	x	1.99E-02	ca	1.12E-05	2.24E-04
N-Nitrosodiphenylamine	9.93E+02	ca	3.91E+03	ca	4.66E+03	nc		1.35E+02	ca	2.86E-01	5.71E+00
N-Nitrosopyrrolidine	2.32E+00	ca	9.12E+00	ca	7.77E+01	ca		3.16E-01	ca	1.30E-04	2.60E-03
m-Nitrotoluene	5.69E+02	sat	5.69E+02	sat	5.69E+02	sat	x	1.22E+02	nc	3.30E-02	6.59E-01
o-Nitrotoluene	1.08E+01	ca	3.23E+01	ca	4.73E+02	ca	x	4.81E-01	ca	1.30E-04	2.61E-03
p-Nitrotoluene	1.46E+02	ca	4.37E+02	ca	1.55E+03	nc	x	6.51E+00	ca	1.76E-03	3.53E-02
Pentachlorobenzene	4.89E+01	nc	5.47E+02	nc	1.86E+02	nc		2.92E+01	nc	9.37E-02	1.87E+00

Chemical	Residential Soil (mg/kg)	End-point	Industrial/ Occupational Soil (mg/kg)	End-point	Construction Worker Soil (mg/kg)	End-point	VOC	Tap Water (ug/L)	End-point	DAF 1 (mg/kg)	DAF 20 (mg/kg)
Pentachlorophenol	2.98E+01	ca	1.00E+02	ca	1.02E+03	ca		5.53E+00	ca	5.87E-03	1.17E-01
Phenanthrene	1.83E+03	nc	2.05E+04	nc	6.99E+03	nc		1.10E+03	nc	2.32E+01	4.64E+02
Phenol	1.83E+04	nc	1.00E+05	max	6.99E+04	nc		1.10E+04	nc	2.37E+00	4.74E+01
Polychlorinatedbiphenyls											
Aroclor 1016	3.93E+00	nc	4.13E+01	nc	1.50E+01	nc		2.56E+00	nc	1.73E-01	3.45E+00
Aroclor 1221	1.12E+00	nc	8.26E+00	ca	4.28E+00	nc		3.32E-01	ca	2.24E-02	4.47E-01
Aroclor 1232	1.12E+00	nc	8.26E+00	ca	4.28E+00	nc		3.32E-01	ca	2.24E-02	4.47E-01
Aroclor 1242	1.12E+00	nc	8.26E+00	ca	4.28E+00	nc		3.32E-01	ca	2.24E-02	4.47E-01
Aroclor 1248	1.12E+00	nc	8.26E+00	ca	4.28E+00	nc		3.32E-01	ca	2.64E-01	5.28E+00
Aroclor 1254	1.12E+00	nc	8.26E+00	ca	4.28E+00	nc		3.32E-01	ca	2.64E-01	5.28E+00
Aroclor 1260	1.12E+00	nc	8.26E+00	ca	4.28E+00	nc		3.32E-01	ca	2.64E-01	5.28E+00
n-Propylbenzene	6.21E+01	sat	6.21E+01	sat	6.21E+01	sat	x	6.08E+01	nc	2.70E-01	5.40E+00
Propylene oxide	2.22E+01	ca	9.33E+01	ca	7.92E+02	nc	x	2.18E+00	ca	4.60E-04	9.20E-03
Pyrene	2.29E+03	nc	3.09E+04	nc	9.01E+03	nc	x	1.83E+02	nc	1.86E+01	3.73E+02
RDX	4.42E+01	ca	1.74E+02	ca	6.99E+02	nc		6.03E+00	ca	1.68E-03	3.36E-02
Selenium	3.91E+02	nc	5.68E+03	nc	1.55E+03	nc		1.83E+02	nc	9.52E-01	1.90E+01
Silver	3.91E+02	nc	5.68E+03	nc	1.55E+03	nc		1.83E+02	nc	1.57E+00	3.13E+01
Strontium	4.69E+04	nc	1.00E+05	max	1.00E+05	max		2.19E+04	nc	7.73E+02	1.55E+04
Styrene	1.00E+02	sat	1.00E+02	sat	1.00E+02	sat	x	1.62E+03	nc	5.23E-01	1.05E+01
1,2,4,5-Tetrachlorobenzene	1.83E+01	nc	2.05E+02	nc	6.99E+01	nc		1.10E+01	nc	2.14E-02	4.29E-01
1,1,1,2-Tetrachloroethane	4.32E+01	ca	1.14E+02	ca	2.11E+03	ca	x	4.27E+00	ca	1.25E-03	2.50E-02
1,1,2,2-Tetrachloroethane	5.55E+00	ca	1.46E+01	ca	2.71E+02	ca	x	5.46E-01	ca	1.60E-04	3.21E-03
Tetrachloroethene	1.25E+01	ca	3.16E+01	ca	1.34E+02	sat	x	4.32E+00	ca	2.87E-03	5.74E-02
Thallium	5.16E+00	nc	7.49E+01	nc	2.04E+01	nc		2.41E+00	nc	1.72E-01	3.43E+00
Toluene	2.52E+02	sat	2.52E+02	sat	2.52E+02	sat	x	2.27E+03	nc	1.08E+00	2.17E+01
Toxaphene	4.42E+00	ca	1.74E+01	ca	1.48E+02	ca		6.03E-01	ca	2.33E-01	4.65E+00
Tribromomethane	6.21E+02	ca	2.46E+03	ca	4.44E+03	nc		2.44E+01	ca	1.73E-01	3.47E+00
1,1,2-Trichloro-1,2,2-trifluoroethane	3.28E+03	sat	3.28E+03	sat	3.28E+03	sat	x	5.92E+04	nc	1.68E+02	3.36E+03
1,2,4-Trichlorobenzene	6.93E+01	nc	2.69E+02	nc	2.30E+02	nc	x	7.16E+00	nc	2.04E-02	4.08E-01
1,1,1-Trichloroethane	5.63E+02	sat	5.63E+02	sat	5.63E+02	sat	x	3.17E+03	nc	1.33E+00	2.65E+01
1,1,2-Trichloroethane	1.19E+01	ca	3.02E+01	ca	1.94E+02	nc	x	1.97E+00	ca	4.98E-04	9.95E-03
Trichloroethylene	6.38E-01	ca	1.56E+00	ca	3.36E+01	ca	x	2.77E-01	ca	1.00E-04	2.00E-03

Chemical	Residential Soil (mg/kg)	End-point	Industrial/ Occupational Soil (mg/kg)	End-point	Construction Worker Soil (mg/kg)	End-point	VOC	Tap Water (ug/L)	End-point	DAF 1 (mg/kg)	DAF 20 (mg/kg)
Trichlorofluoromethane	5.88E+02	nc	9.83E+02	sat	9.83E+02	sat	x	1.29E+03	nc	1.12E+00	2.23E+01
2,4,5-Trichlorophenol	6.11E+03	nc	6.84E+04	nc	2.33E+04	nc		3.65E+03	nc	7.13E+00	1.43E+02
2,4,6-Trichlorophenol	6.11E+00	nc	6.84E+01	nc	2.33E+01	nc		3.65E+00	nc	7.13E-03	1.43E-01
1,1,2-Trichloropropane	2.53E+01	nc	9.64E+01	nc	8.35E+01	nc	x	3.04E+01	nc	1.17E-02	2.35E-01
1,2,3-Trichloropropane	8.61E-02	ca	2.09E-01	ca	4.57E+00	ca	x	5.53E-02	ca	2.07E-05	4.14E-04
1,2,3-Trichloropropene	1.21E+00	nc	4.39E+00	nc	3.95E+00	nc	x	2.10E+00	nc	7.88E-04	1.58E-02
Triethylamine	4.90E+01	nc	2.33E+02	nc	1.69E+02	nc	x	1.21E+01	nc	2.14E-03	4.29E-02
1,2,4-Trimethylbenzene	5.80E+01	nc	2.13E+02	nc	1.90E+02	nc	x	1.23E+01	nc	7.09E-02	1.42E+00
1,3,5-Trimethylbenzene	2.48E+01	nc	6.92E+01	sat	6.92E+01	sat	x	1.23E+01	nc	1.77E-02	3.55E-01
2,4,6-Trinitrotoluene	3.06E+01	nc	3.42E+02	nc	1.17E+02	nc		1.83E+01	nc	5.34E-02	1.07E+00
Vanadium	7.82E+01	nc	1.14E+03	nc	3.10E+02	nc		3.65E+01	nc	3.65E+01	7.30E+02
Vinyl acetate	1.07E+03	nc	3.68E+03	sat	3.52E+03	nc	x	4.12E+02	nc	7.57E-02	1.51E+00
Vinyl bromide	2.85E+00	ca	6.84E+00	ca	1.93E+01	nc	x	1.18E+00	ca	4.71E-04	9.41E-03
Vinyl chloride (Child)	2.25E+00	ca					x	4.28E-01	ca	1.40E-04	2.80E-03
Vinyl chloride (adult)	4.37E+00	ca	1.40E+01	ca	1.82E+02	ca	x	8.33E-01	ca	2.72E-04	5.45E-03
m-Xylene	8.20E+01	sat	8.20E+01	sat	8.20E+01	sat	x	2.03E+02	nc	1.03E-01	2.06E+00
o-Xylene	9.95E+01	sat	9.95E+01	sat	9.95E+01	sat	x	7.30E+03	nc	4.07E+00	8.14E+01
Xylenes	8.20E+01	sat	8.20E+01	sat	8.20E+01	sat	x	2.03E+02	nc	1.03E-01	2.06E+00
Zinc	2.35E+04	nc	1.00E+05	max	9.29E+04	nc		1.10E+04	nc	6.82E+02	1.36E+04

RAILROAD RACK LAGOON OVERFLOW DITCH
AND FAN-OUT AREA, SWMU NO. 8
SUBSURFACE INVESTIGATION
FINAL REPORT
WESTERN REFINING COMPANY
GALLUP REFINERY, GALLUP, NEW MEXICO

~~January 6, 2010~~Revised September 27, 2010

Project #: 697-~~017-002~~039-001

SUBMITTED BY: Trihydro Corporation

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EXECUTIVE SUMMARY

In June 2006, the New Mexico Environment Department (NMED) requested that the Gallup Refinery (Gallup), located near Gallup, New Mexico, investigate the presence of residual contamination in the Railroad Rack Lagoon Overflow Ditch and Fan-out Area. These two areas are considered to be part of Solid Waste Management Unit No. 8 (SWMU No. 8). A soil sampling work plan was submitted to NMED on August 29, 2006. After minor modifications to the work plan at NMED's request, a subsurface soil investigation of the Railroad Rack Lagoon Overflow Ditch and Fan-out Area was conducted in October 2006.

This investigation resulted in the discovery of two locations, Test Pits B-8 and B-9, which showed total petroleum hydrocarbon (TPH) diesel range organic (DRO) concentrations exceeding NMED's cleanup standard of 890 mg/kg. Further sampling was required to delineate the DRO contamination associated with these test pits. Three subsequent sampling events were conducted in May, August, and December 2007 in order to delineate the extent of the DRO contamination and approximate an estimated volume of material to be excavated.

After delineation activities were believed to be complete, plans for excavating and transporting the DRO contaminated soil were made. Excavation and confirmation sampling events were conducted from March 2009 through ~~October~~ August 2010~~09~~. These events continued until confirmation samples verified that soil with DRO concentrations exceeding the cleanup standard had been removed. Excavated soils met the Oil Conservation District's (OCD) acceptance criteria and were transported to Gallup's Northeast Land Farm.

This report describes the delineation, sampling, and excavation activities that have occurred since the October 2006 subsurface investigation. Gallup believes that the information presented in this report demonstrates that the soil in the Rail Road Rack Lagoon Overflow Ditch and Fan-out Area with DRO concentrations above the cleanup standard has been excavated. The excavations associated with Test Pits B-8 and B-9 currently remain open and will be promptly backfilled with clean fill material pending NMED approval of this report.

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1.0 INTRODUCTION

Western Refining (formerly known as Giant Industries, Arizona Inc.) requested that Trihydro Corporation (Trihydro) conduct a subsurface investigation at the Gallup Refinery (Gallup) near Gallup, New Mexico to characterize soil in the Railroad Rack Lagoon Overflow Ditch and Fan-out Area (Overflow Ditch and Fan-out Area) which are located within Solid Waste Management Unit No. 8 (SWMU No. 8). SWMU No. 8 is located on Gallup property northeast of the main refining process area. A topographic map of Gallup that shows the relative location of the Overflow Ditch and Fan-out Area is included as Figure 1. Figure 2 shows SWMU No. 8 and surrounding well locations as required by the New Mexico Environment Department (NMED). Trihydro's initial subsurface investigation was conducted in October 2006 (October 2006 Subsurface Investigation). As a result of this investigation and subsequent NMED correspondences, soil with diesel range organics (DRO) concentrations exceeding 890 mg/kg have been excavated from portions of the Overflow Ditch and Fan-out Area. This report is being submitted to NMED to summarize the subsurface investigation and remedial activities conducted at SWMU No. 8.

2.0 BACKGROUND

The Overflow Ditch and Fan-out Area were used to manage overflow when the Railroad Rack Lagoon was filled beyond capacity. The Railroad Rack Lagoon has not been used since the mid-1980's. Figure 3 shows the dimensions and relative location of the Overflow Ditch and Fan-out Area. Both of these areas are considered to be part of SWMU No. 8. The Fan-out area is generally surrounded by earthen berms approximately 2-3 feet (ft) high. The Railroad Rack Lagoon, Overflow Ditch, and Fan-out area were sampled during the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) in 1992. During this investigation, soil samples from these areas were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and total metals. The RFI concluded that VOCs/SVOCs were at minimal levels, and inorganic levels were below background contamination levels with the exception of chromium. However, chromium levels were below the RCRA Corrective Action levels, thus no remediation was required.

The October 2006 Subsurface Investigation was conducted in response to a letter that Gallup received from NMED, dated June 29, 2006. In this correspondence, comment # 26 requested information regarding the presence of residual contamination in the Overflow Ditch and Fan-out Area locations. A soil sampling work plan was submitted to NMED on August 29, 2006. Two sample location changes were requested by NMED in a letter titled *Approval with Modifications, Work Plan For Investigation of the Overflow Ditch and Fan-Out Area of Railroad Rack Lagoon, SWMU No. 8,* dated September 19, 2006. Gallup and Trihydro modified the sampling locations accordingly. The remainder of the work plan was approved by the NMED.

The results of this investigation were reported in the *Railroad Rack Lagoon Overflow Ditch and Fan-Out Area, SWMU 8 Subsurface Investigation* report (October 2006 Subsurface Investigation Report), dated February 8, 2007. Based on the findings of the October 2006 Subsurface Investigation, two areas were identified in the Overflow Ditch and Fan-out Area where NMED's DRO total petroleum hydrocarbon (TPH) guideline of 890 mg/kg (cleanup standard) was exceeded. As described in the October 2006 Subsurface Investigation Report, these areas are associated with Test Pits B-8 and B-9. Figure 3 shows the locations of these test pits. Several field events have been conducted since the initial subsurface investigation to delineate the extent of the DRO contamination, excavate DRO contaminated soil, and collect confirmation samples to demonstrate that soil with DRO concentrations exceeding the cleanup standard has been removed. This report describes the field activities conducted after the October 2006 Subsurface Investigation Report and presents the analytical data that demonstrates that DRO contaminated soil associated with Test Pits B-8 and B-9 has been removed.

3.0 SCOPE OF SERVICES

Based on the results of the October 2006 Subsurface Investigation, NMED required that Gallup develop and implement a plan for determining the extent of and removing DRO contaminated soil associated with Test Pits B-8 and B-9. Gallup subsequently requested Trihydro's assistance in delineating and excavating the DRO contamination associated with these locations. The remainder of this section details the activities that were implemented to achieve these project objectives.

3.1 DRO DELINEATION ACTIVITIES

May 2007

In May 2007, Test Pits B-8 and B-9 were increased in size, both horizontally and vertically, in an attempt to excavate DRO contaminated soil above the cleanup standard. Confirmation samples were collected from both of the newly expanded excavations. The updated test pit logs for the expanded test pits are included as Appendix A and sample forms are included in Appendix B.

The soil sample results from the excavation associated with Test Pit B-9 were below the DRO cleanup standard. Excavated soils have been transported to Gallup's Northeast Oil Conservation District (OCD) Land Farm. Gallup contacted OCD and verified that the excavated soil was permitted to be accepted by the Land Farm. Based on this data, DRO contaminated soil in the vicinity of Test Pit B-9 has been excavated.

The confirmation soil sample results from Test Pit B-8 remained higher than the cleanup standard for DRO (890 mg/kg). As a result, Gallup requested that Trihydro conduct another investigation to delineate the DRO contamination associated with Test Pit B-8. This investigation was conducted in August 2007.

August 2007

The objective of the August 2007 sampling event was to delineate the DRO contaminated soil associated with Test Pit B-8. Soil samples were collected during the week of August 20, 2007 and were located to accurately delineate DRO contamination and minimize the amount of soil that would potentially require excavation. Several of the August 2007 soil samples exceeded the DRO cleanup standard prompting additional field events. The sample forms from the August 2007 event are included in Appendix B.

December 2007

The objective of this field event was to further delineate DRO contamination associated with Test Pit B-8. The spacing and depths of sampling locations were increased during the December 2007 event to assist in efficiently delineating the extent of DRO contamination. Samples were collected in a radial pattern 20 feet away from the outermost DRO exceedances discovered during the August 2007 event using a hollow-stem auger drill rig. Borehole logs from this sampling event are provided as Appendix C. Sample forms were not completed for these locations because all relevant sampling information is recorded on the borehole logs. Results from samples collected during the December 2007 event showed DRO concentrations below the cleanup standard. Accordingly, preparations for excavation began. The analytical data reports along with data validation reports for DRO delineation activities are included in Appendix D. Analytical data is summarized in Table 1.

3.2 EXCAVATION ACTIVITIES

Following the DRO delineation activities, Gallup requested Trihydro's assistance to develop and implement an excavation plan to remove soil exceeding the DRO cleanup standard in the vicinity of Test Pit B-8. The remainder of this section summarizes the development and implementation of this plan.

A letter titled *Railroad Rack Lagoon Fan-out Area Excavation Work Plan* was submitted to NMED for approval on May 2, 2008. NMED commented on this work plan in a letter dated July 22, 2008 which is provided as Appendix E. The work plan was revised to address NMED's concerns and resubmitted in report format on September 17, 2008. This document, titled *Railroad Rack Overflow Ditch and Fan-Out Area Soil Investigation Work Plan* (2008 Excavation Work Plan), was approved with direction in a letter from NMED dated December 11, 2008 which is included as Appendix F. Excavation and confirmation sampling activities commenced in March 2009 in accordance with these documents.

Confirmation sample locations were strategically located to supplement existing DRO data. Confirmation samples were sent to Hall Environmental located in Albuquerque, NM for DRO analysis. Due to confirmation sample DRO exceedances, the size of the excavation, as proposed in the 2008 Excavation Work Plan, was increased. A comparison between the size of the excavation as proposed in the 2008 Excavation Work Plan and the actual size of the excavation area is shown on Figure 4. Excavation activities continued through October 2009 due to additional confirmation sample exceedances and visually impacted soil. During this timeframe, a total of 24 confirmation samples showing DRO concentrations below the cleanup standard were collected. ~~Test Pit B-8 confirmation sample locations and results~~

~~are illustrated on Figure 5.~~Figure 5 shows sample locations and results from throughout the investigation, including the delineation and confirmation sampling events. Area 1 was excavated to depth of 3 feet below ground surface (ft bgs), and excavation activities in this area were overseen by Trihydro. Area 2 was excavated to a depth of 5 ft bgs by Gallup personnel. Area 3 and 4 excavations were overseen by a combination of Trihydro and Gallup personnel and extend to 7 and 13 ft bgs, respectively.

Upon completion of the October 2009 excavating and confirmation sampling, the original *Railroad Rack Lagoon Overflow Ditch and Fan-Out Area, SWMU No. 8 Subsurface Investigation Final Report, Western Refining Company, Gallup Refinery, Gallup, New Mexico*, dated January 6, 2010, was submitted to NMED. NMED issued a *Notice of Disapproval, Railroad Rack Lagoon Overflow Ditch and Fan-Out Area, SWMU No. 8 Subsurface Investigation Final Report, Western Refining Company Southwest, Inc., Gallup Refinery, EPA ID # NMD000333211, HWB-WRG-10-002* (NOD), on May 12, 2010. This correspondence is provided as Appendix G. The NOD contained 9 comments that NMED requested to have addressed prior to approving the Report. Western submitted a response to NMED's comments on June 23, 2010 explaining how Western planned to address each the comments in a revised final report. This correspondence, titled *Re: NMED's Notice of Disapproval, Railroad Rack Lagoon Overflow Ditch and Fan-Out Area, SWMU No. 8 Subsurface Investigation Final Report, Western Refining Company Southwest, Inc., Gallup Refinery, EPA ID # NMD000333211, HWB-WRG-10-002* is provided as Appendix H. Western also had to request an extension for the submittal of the revised Report while waiting for NMED to respond to the June 23, 2010 correspondence. The extension request is included as Appendix I. In a correspondence titled, *Direction for Additional Soil Confirmation Sample Collection and Approval of Extension Request, Railroad Rack Lagoon Overflow Ditch and Fan-Out Area, SWMU No. 8 Subsurface Investigation Final Report, Western Refining Company Southwest, Inc., Gallup Refinery, EPA ID # NMD000333211, HWB-WRG-10-002*, dated July 28, 2010, NMED expressed dissatisfaction with the confirmation sampling density and requested that Western collect 11 additional confirmation samples at NMED-proposed locations. This correspondence is provided as Appendix J. Western agreed to collect the additional 11 confirmation samples in a correspondence dated August 9, 2010 which is provided as Appendix K. These samples were collected on August 23 and 25, 2010. Sample results for each of the 11 final confirmation samples were below the NMED cleanup standard of 890 mg/kg. Therefore, no additional excavation was required. This report has been revised to include the results of the additional confirmation samples.

4.0 FIELD INVESTIGATION METHODOLOGY

Excavation and confirmation sampling activities began in March 2009 and continued through ~~October 2009~~August 2010. The surface conditions, subsurface conditions, investigation methodologies, and the disposal of investigation derived waste are described in the following subsections.

4.1 SURFACE CONDITIONS

The surface topography of the investigation area is relatively flat with the Fan-out area being generally surrounded by earthen berms approximately 2-3 ft high. Vegetation at the site is sparse and consists mainly of sagebrush and natural grasses. The Railroad Rack Lagoon and Fan-out Areas are located on land owned and controlled by Gallup. The industrial property boundaries are shown on Figure 1.

4.2 SUBSURFACE CONDITIONS

As shown in the test pit and borehole logs, lithology in the excavations and boreholes installed since the October 2006 Subsurface Investigation did not differ significantly from the lithology described in the October 2006 Subsurface Investigation Report. Lithology was generally composed of silts and clays with the higher percentages of silts at shallower depths and higher percentages of clays at deeper depths. A moist to wet 0.75-inch layer of sand was noted at 22 ft bgs at Borehole B8-NEW-SE-S1; however, groundwater was not encountered during any of the field events. Test pit and borehole logs are presented as Appendices A and C, respectively.

A low density, black, asphalt-like material was identified during the October 2006 Subsurface Investigation and described in the October 2006 Subsurface Investigation Report. This material was noted on the surface around and in Test Pits B-1 and B-6 during the October 2006 Subsurface Investigation but was not seen in the subsequent events. However, a trace of black staining following the fractures in the silt and clay was noted in both the B-8 and B-9 excavations. Sample B8-EXTRA was collected from the southeast side of the original B-8 excavation at a depth of 2 ft bgs to characterize the stained soil. Laboratory analysis showed DRO concentrations of 140 mg/kg, which is below the DRO cleanup standard of 890 mg/kg.

Potentially impacted soil exhibiting dark staining and a hydrocarbon odor was identified during June 2009 by Gallup personnel in the western portion of Area 4 (see Figure 5). Visually impacted soil was removed and confirmation

samples CS-29, CS-30, CS-31, A-1, A-2, and A-3 were collected by Gallup personnel to verify that the DRO impacted soil had been removed. These samples all showed DRO concentrations below the cleanup standard of 890 mg/kg.

4.3 SOIL INVESTIGATION METHODOLOGY

Investigation methodologies varied for DRO delineation and excavation/confirmation sampling activities. Section 4.3.1 describes methodologies used for DRO contamination delineation and Section 4.3.2 details the excavation and confirmation sampling methodologies.

4.3.1 DELINEATION INVESTIGATION METHODOLOGY

Since the October 2006 Subsurface Investigation Report was submitted, three field events were conducted in May, August, and December 2007 to help delineate the extent of DRO contamination. A summary of these events is provided in Section 3.1. The investigation methodologies implemented during these three events are discussed below.

4.3.1.1 DELINEATION SAMPLE LOCATIONS

The original ten October 2006 Subsurface Investigation test pit/sample locations were selected based on the sample locations from the RFI in 1992. These locations were submitted to the NMED for approval in the soil sampling work plan submitted on August 29, 2006. Two sample locations were modified at the NMED's request. The sample locations were located in the field by Trihydro using the Overflow Ditch and the berms of the Fan-out Area as measurement reference points. The locations were staked and labeled with the applicable sample identification. Photographs of the staked locations are presented in the October 2006 Subsurface Investigation Report. Figure 3 illustrates the approximately measured dimensions of the Overflow Ditch, the Fan-out Area, and the test pit/sample locations.

The sampling locations in these three delineation sampling events (May, August, and December 2007) were determined based on the exceedances identified during the preceding sampling events. These locations are illustrated on Figures 5 and 6. Sample locations were located in the field and staked by Trihydro personnel. The stakes from each of the previous sampling events remained in the ground (as the excavation allowed) and were used as measurement reference points.

4.3.1.2 DELINEATION SOIL SAMPLING PROCEDURES

Information pertaining to soil sample collection including but not limited to, the sampler, the date, time, and depth that the sample was collected, and whether or not duplicate samples were collected is included on the soil sample forms and borehole logs included as Appendices B and C, respectively. Soil samples were transferred directly from the decontaminated sampling device to clean 4-ounce jars provided by the laboratory. The sample containers were completely filled to minimize headspace (by tamping during filling) and immediately sealed. Sample containers were immediately labeled and stored on ice until each day's sampling was complete. The samples were then hand delivered or shipped to Hall Environmental for DRO analysis. A chain-of-custody (CoC) was completed by Trihydro personnel. Copies of the CoCs are included along with the laboratory analytical reports in Appendix D. Samples were analyzed by Hall Environmental located in Albuquerque, NM. Samples collected after the October 2006 Subsurface Investigation were only analyzed for DRO by method 8015B. The only preservation requirement specified by Hall Environmental is to cool the samples to 4 degrees Celsius or less.

The sampling techniques varied for each of the three 2007 delineation events. During the May 2007 event, small excavations were installed in the locations of the original B-8 and B-9 test pits. Soil samples were collected utilizing a decontaminated trowel and a manual GeoProbe. DRO contaminated soil associated with Test Pit B-9 was delineated and excavated during this event as described in Section 6. However, the May 2007 event did not successfully delineate the DRO contamination associated with Test Pit B-8.

During the August 2007 event, additional soil samples were collected in the vicinity of Test Pit B-8 using the manual GeoProbe. No additional excavating was conducted during this event. The August 2007 event did not fully delineate the B-8 DRO contamination both horizontally and vertically.

To allow for deeper sample collection, Rodgers and Co. Drilling of Albuquerque, NM was contracted to assist with soil sample collection utilizing hollow-stem auger drilling techniques with a CME 75 drill rig. During the December 2007 event, soil samples were collected from decontaminated split spoons. Hollow-stem augers were advanced to the depth directly above the desired sample interval. The decontaminated split spoon sampling device was then hammered through the desired sample interval. Samples were collected directly from the split spoon as soon as it was retrieved. The data obtained during the December 2007 event suggested that the DRO contamination associated with Test Pit B-8 was delineated both horizontally and vertically. Excavation plans proceeded accordingly. Test Pit B-8 sample locations from these three delineation events are illustrated on Figure 5.

4.3.2 EXCAVATION AND CONFIRMATION SAMPLING METHODOLOGY

Excavation and confirmation sampling methodologies were performed in accordance with the 2008 Excavation Work Plan and NMED's approval with direction. Excavation and confirmation sampling activities took place between the months of March 2009 and ~~October 2009~~August 2010.

4.3.2.1 CONFIRMATION SAMPLE LOCATIONS

A total of ten sidewall and base confirmation sample locations were proposed in the 2008 Excavation Work Plan. Three additional locations were added at the suggestion of NMED in the December 11, 2008 Approval with Direction letter provided as Appendix F. These 13 locations, designated CS-1 through CS-13, were strategically located in areas where DRO delineation data was limited in an attempt to fill potential data gaps. Of the 13 approved confirmation sampling locations, 3 exceeded the DRO cleanup standard (CS-2, CS-4, and CS-8) prompting expansion of the excavation. As the excavation was expanded, additional confirmation samples were collected to verify that DRO contaminated soil had been removed. Excavation expansion and confirmation sampling took place from March 2009 through ~~October 2009~~August 2010 continuing until each of the deepest (vertical) and outermost (horizontal) confirmation samples showed DRO concentrations below the 890 mg/kg cleanup standard. By the completion of the August 2010~~October~~ event, a total of 44~~34~~ confirmation samples had been collected. The locations of the final confirmation samples are shown on Figure 7~~5~~. Final confirmation sample a~~A~~nalytical results from these events are summarized in Table 2~~1~~.

4.3.2.2 CONFIRMATION SOIL SAMPLING PROCEDURES

The basic soil sampling procedures used to collect delineation soil samples were utilized for confirmation sampling. These are discussed in detail in Section 4.3.1.2. Soil sample forms are included as Appendix B. Depending on location accessibility, samples were collected using a trowel, hand auger, or bucket of the excavator. If samples were collected from the excavator bucket, care was taken to obtain soil that did not come in contact with the excavator bucket.

4.3.3 FIELD SCREENING

As requested by NMED, field screening was to be performed at each confirmation sampling location and any other location that may be contaminated based on visual observations. During the October 2006 Subsurface Investigation, sample intervals were field screened for TOVs using a MiniRae 2000 photoionization detector (PID). Based on the PID readings recorded during this event, it became evident that a PID is not capable of detecting the DRO

contamination in the Fan-out Area. Therefore, a PID was not used during the subsequent sampling events and Gallup purchased a Magnetic Particle Immunoassay Rapid Assay Kit to field screen during confirmation sampling activities. However, comparisons between laboratory data and preliminary field screening results showed limited correlation. In addition, field screening equipment malfunctions were experienced. NMED was verbally contacted on May 13, 2009 to discuss these issues. As a result, NMED permitted Gallup to proceed with the excavation utilizing visual observations and confirmation sampling results in lieu of field screening to determine whether or not DRO contaminated soil has been removed.

4.3.4 FIELD DOCUMENTATION AND LOGGING

A qualified geologist was on site to log test pits and boreholes during the delineation activities. The logs were completed according to the work plan specifications. Test pit and borehole logs are included as Appendices A and C, respectively. Upon completion of delineation activities, the qualified geologist determined that the lithology of the area had been sufficiently characterized and additional lithologic logging would not be required. Information pertaining to sample collection (delineation and confirmation samples) was recorded on sample forms and borehole logs provided as Appendices B and C, respectively.

Photographs were also used to document field activities. Photographs of site conditions, sample locations, sampling activities, soil samples, and excavation activities were taken as necessary. Applicable photographs, along with a photo log that provides a description of each photograph, are included as Appendix L~~G~~.

4.3.5 EQUIPMENT DECONTAMINATION PROCEDURES

Sampling equipment that had the potential to come in contact with the soil samples was decontaminated before sampling commenced and after each sample was collected. This includes trowels, augers, the cutting shoe of the manual GeoProbe, and the split spoon sampling device used with the hollow-stem auger drill rig. The sampling devices were decontaminated using a non-phosphate detergent solution followed by two distilled water rinses. Prior to use, the equipment was either air-dried or dried with clean paper towels. Decontaminated sampling devices were stored in a contaminant-free location until use.

4.4 INVESTIGATION DERIVED WASTE

Excavated soils and soil cuttings produced during sampling events have been transported to Gallup's Land Farm as permitted by OCD. Other wastes associated with sampling, including personal protective equipment (PPE), rinse water from decontamination, and other sampling-associated disposables were disposed of appropriately at the refinery.

5.0 REGULATORY CRITERIA

After receiving the results from the October 2006 Subsurface Investigation, it was determined that the contaminant of concern in the Fan-out Area was DRO. The NMED-approved cleanup standard for DRO was originally 200 mg/kg (from "Unknown oil" on Table 2a of NMED's TPH Screening Guidelines for Potable Groundwater (GW-1)). However, in a correspondence with Gallup personnel in March 2007, NMED agreed to adjust the DRO cleanup level to 890 mg/kg (from "#3 and #6 fuel oil" on Table 2a of NMED's TPH Screening Guidelines for Potable Groundwater (GW-1)). The cleanup standards are included as Appendix M~~H~~. The only areas discovered during the October 2006 Subsurface Investigation that contained soils with DRO concentrations exceeding the 890 mg/kg cleanup standard were Test Pits B-8 and B-9. Accordingly, delineation and excavation efforts were focused on these two areas as described in Sections 3 and 4 of this report.

6.0 SOIL SAMPLING ANALYTICAL RESULTS

Analytical results of the soils samples collected near Test Pits B-8 and B-9 are discussed below. Quality Assurance and Quality Control procedures were verified through the data validation process which is detailed in Section 6.3.

6.1 TEST PIT B-9

The final Test Pit B-9 excavation measures approximately 6 feet in length (N-S) by 4 feet in width (E-W) and extends to approximately 5 ft bgs. Samples collected from each corner of the excavation at depths of 3 ft bgs and the center of the excavation at a depth of 5 ft bgs showed DRO concentrations below the cleanup standard. Figure 6 illustrates the sample locations and results. Base and sidewall samples are illustrated on Figure 6 in magenta and orange, respectively. A summary of the analytical data obtained from each of the delineation and confirmation sampling events is provided as Table 1. Final confirmation sample results are summarized in Table 2. These analytical results show that soils exceeding the DRO cleanup standard have been excavated from the vicinity of Test Pit B-9.

6.2 TEST PIT B-8

Over 110~~0~~ soil samples have been collected and analyzed in the vicinity of Test Pit B-8 to verify that DRO contaminated soil exceeding the cleanup standard has been removed. As delineation efforts identified DRO cleanup standard exceedances, the size of the excavation was increased horizontally and/or vertically in the direction of the exceedance, and additional confirmation samples were collected. This process was repeated until the outermost (horizontal) and deepest (vertical) sample locations showed DRO concentrations below the cleanup standard. As illustrated on Figure 7~~5~~, between delineation and confirmation sampling activities, a total of ~~67~~ 44 soil samples showing DRO concentrations below the cleanup standard surround the area that has been excavated. Base and sidewall samples are illustrated on Figure 7 in magenta and orange, respectively. Some samples, for example CS-14, can be considered both base and sidewall samples. CS-14 was collected at 7 ft bgs on the corner of Areas 3 and 4. With respect to Area 3, this is a base sample; with respect to Area 4, this is a sidewall sample. These “base/sidewall” samples are illustrated on Figure 7 in cyan. These analytical results show that soils exceeding the DRO cleanup standard have been excavated from the vicinity of Test Pit B-8. A summary of final confirmation sample ~~the~~ analytical data is provided as Table 2~~1~~.

Laboratory analytical reports for delineation and confirmation sampling events occurring subsequent to the submittal of the October 2006 Subsurface Investigation Report are provided in Appendix D.

6.3 QUALITY ASSURANCE/QUALITY CONTROL PROTOCOL

Analytical data ~~was~~ were validated through National Functional Guideline Tier I and Tier II data validation standards. Trihydro Tier II laboratory data validations were performed on the soil sampling data from Hall Environmental Analysis Laboratory, Inc. to determine method compliance, completeness, precision, and accuracy. This data review covered the following 15~~3~~ data sets: laboratory identification numbers 0705313, 0705361, 0706077, 0708284, 0708324, 0712257, 0903342, 0904327, 0904388, 0905343, 0906074, 0907447, ~~and~~ 0910112, 1008920, and 1008A31. Data validation reports are provided with the laboratory analytical reports in Appendix D.

The CoC records and analytical reports were reviewed as part of the data validation process. Samples were analyzed in accordance with the CoCs. The CoC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.

Preservation of samples is assessed by reviewing holding time and receipt temperatures. Preservation is important in preventing volatilization of samples. Three DRO data points were qualified as estimated values, one DRO point was rejected (R), and four motor oil range organics (MRO) data points were rejected (R) for high sample receipt temperatures and analysis past holding time. The rejected DRO datum was not re-sampled because additional data were collected at more extensive horizontal and vertical locations. The sample locations from which MRO data were rejected were not re-sampled because the MRO is not a contaminant of concern based on the October 2006 Subsurface Investigation.

Data validations performed were evaluated in general accordance with validation criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-07-003, July 2007 or the USEPA CLP National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-08-01, June 2008 with additional reference to USEPA ~~Contract Laboratory Program (~~CLP~~)~~ National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999. Review of duplicates is conducted in accordance with USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.

Field and laboratory blanks are used to assess accuracy in the field and in the laboratory. Method blank detections were not reported in any of the data sets with the exception of cyanide in data set 0610228. The method blank was only

associated with the equipment blank and the associated result was non-detect. Therefore, evidence of cross contamination was not present in the laboratory. There were no detections of target analytes in the trip blank or equipment blanks samples.

~~Eight~~ Ten blind duplicates were collected and analyzed with these data sets to assess field and laboratory precision by measuring the relative percent difference (RPD) between sample results. The duplicate samples were collected from B-8 Center (BD5212007), B8_8_20_E_3 (BD082007), B8_12_17_I1_3 (BD_12_17_07), CS-8 (BD042109), CS-19 (BD), CS-21 (BD051909), CS-23 (BD), ~~and~~ CS-26 (BD-072309), CS-38 (BD1), and CS-33 (BD2). The calculated RPD values were below the limit of 50% for soil indicating acceptable precision with one exception. The field duplicate RPD value for DRO was 74.3% for the duplicate pair from sample B8_8_20_E_3. As a result, DRO was qualified in the parent and duplicate samples to indicate possible poor repeatability.

Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) and matrix spike/matrix spike duplicate (MS/MSD) data are used to access sample bias (accuracy) as a result of instrumentation or matrix effect, respectively. These data can also be used to assess laboratory precision as a result of instrumentation or matrix effect. A total of 77 data points were qualified or "flagged" as a result of non-conformances with the ~~matrix spike/matrix spike duplicate (~~MS/MSD~~)~~ recoveries or RPD values. Of these 77 points, 53 were for DRO and 24 were for MRO data points.

The data met acceptance levels of precision, accuracy, and completeness. The data sets were complete with the exception of data set 0706077 in which five total data points (one DRO) were rejected as a result of the combination of high sample temperatures and analysis past seven days. Data qualification flag of J indicates an estimated quantified (i.e., detected) value and a UJ indicates an estimated result for non-quantified (i.e., non-detect) values. A data point that is flagged J or UJ indicates that the possible presence or absence of the analyte could be verified at an approximated value; therefore, estimated data is valid for use. Data which are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R, the data may be used for site evaluation, with the reasons for qualification being given consideration when interpreting sample concentrations. Data points which are assigned an R qualifier should not be used for any site evaluation purposes.

7.0 CONCLUSIONS

Based on the October 2006 Subsurface Investigation, DRO remained the only contaminant of concern exceeding NMED cleanup standards in the Overflow Ditch and Fan-out Area. Two locations, Test Pits B-8 and B-9, were identified where DRO concentrations exceeded NMED's cleanup standard.

A rectangular excavation measuring approximately 4 feet wide by 6 feet long by 5 feet deep was installed at the location of Test Pit B-9. Approximately 3 cubic yards of soil were excavated from the B-9 area and transported to Gallup's Northeast Landfarm as permitted by OCD. As shown on Figure 6, five samples were collected from the outermost extents of this excavation. Each of these samples showed DRO concentrations below the cleanup standard.

The final excavation installed in the vicinity of Test Pit B-8 is illustrated on Figures 5 and 7. Approximately 784 cubic yards of soil have been excavated from this area and transported to Gallup's Northeast Landfarm as permitted by OCD. A total of 44~~67~~ soil samples showing DRO concentrations below the cleanup standard surround the excavated area.

As shown by the analytical data, DRO contaminated soil exceeding NMED's cleanup standard has been excavated from the vicinity of Test Pits B-8 and B-9. Soils removed from both excavations have been transported to Gallup's Land Farm as permitted by OCD. The excavations currently remain open as Gallup is awaiting NMED's approval of this report prior to backfilling the excavations with clean backfill material. Upon NMED approval, Gallup intends to backfill the excavations in a timely manner. Once backfilled, Gallup believes that no further remediation activities need to be conducted in the Overflow Ditch and Fan-out Area.

TABLES

TABLE 1. DRO ANALYTICAL DATA SUMMARY
RAILROAD RACK LAGOON OVERFLOW DITCH AND FAN-OUT AREA
WESTERN REFINING COMPANY, GALLUP REFINERY, GALLUP, NEW MEXICO

Date	Sample ID	Depth (ft bgs)	Laboratory Result (mg/kg)
10/17/2006	B-7	2	360
10/18/2006	B-7	5	ND(10)
5/21/2007	B-8SW	3	88
5/21/2007	B-8SE	3	650
5/21/2007	B-8Center	3	1300*
10/17/2006	B-8Center	5	43
5/23/2007	B-8Extra	2	140
5/21/2007	B-8NW	3	610
5/21/2007	B-8NE	3	1300
8/20/2007	B-8NE	5	2200(J)
5/23/2007	B-8NEW-NW	3	130
5/23/2007	B-8NEW-NW	5	310
5/23/2007	B-8NEW-NE	3	130
5/23/2007	B-8NEW-NE	5	11
5/23/2007	B-8NEW-SE (aka "A")	3	5800
5/23/2007	B-8NEW-SE (aka "A")	5	5000
8/20/2007	B-8NEW-SE (aka "A")	7	5500(J)
8/20/2007	B-8NEW-SE (aka "A")	9	19000(J)
5/23/2007	B-8NEW-SE-S1 (aka "B")	3	9300(J)
5/23/2007	B-8NEW-SE-S1 (aka "B")	5	1300(J)
8/20/2007	B-8NEW-SE-S1 (aka "B")	7	2600(J)
12/17/2007	B-8NEW-SE-S1 (aka "B")	8	ND(10)
8/20/2007	B-8NEW-SE-S1 (aka "B")	9	ND(10)(UJ)
12/17/2007	B-8NEW-SE-S1 (aka "B")	13	ND(10)
12/17/2007	B-8NEW-SE-S1 (aka "B")	18	ND(10)
12/17/2007	B-8NEW-SE-S1 (aka "B")	23	ND(10)
5/23/2007	B-8NEW-SE-S2	3	1300(J)
5/23/2007	B-8NEW-SE-S2	5	ND(10)(R)
5/21/2007	B-9Center	3	2600
5/23/2007	B-9NEW-Center	5	150
5/21/2007	B-9SE	3	210
5/21/2007	B-9SW	3	210
5/21/2007	B-9NE	3	200
5/21/2007	B-9NW	3	130

Date	Sample ID	Depth (ft bgs)	Laboratory Result (mg/kg)
8/20/2007	C	3	3400(J)
8/20/2007	C	5	660(J)
8/20/2007	D	3	77(J)
8/20/2007	D	5	150(J)
8/20/2007	E	3	2200(J)
8/20/2007	E	5	ND(10)(UJ)
8/20/2007	F	3	3500(J)
8/20/2007	F	5	ND(10)(UJ)
8/20/2007	G	3	440(J)
8/21/2007	H	3	3100(J)
8/21/2007	H	5	ND(10)(UJ)
8/21/2007	I	3	8600(J)
8/21/2007	I	5	ND(10)(UJ)
8/21/2007	J	3	250(J)
8/21/2007	J	5	ND(10)(UJ)
8/20/2007	K	3	4700(J)
8/20/2007	K	5	ND(10)(UJ)
8/21/2007	L	3	42(J)
8/21/2007	L	5	71(J)
8/20/2007	M	3	4000(J)
8/20/2007	M	5	ND(10)(UJ)
12/17/2007	K-1	3	ND(10)(UJ)
12/17/2007	K-1	8	ND(10)
12/17/2007	K-1	13	ND(10)(UJ)
12/17/2007	G-1	3	ND(10)
12/17/2007	G-1	8	ND(10)(UJ)
12/17/2007	G-1	13	ND(10)
12/17/2007	I-1	3	ND(10)(UJ)
12/17/2007	I-1	8	ND(10)(UJ)
12/17/2007	I-1	13	ND(10)(UJ)
12/17/2007	M-1	3	ND(10)
12/17/2007	M-1	8	ND(10)
12/17/2007	M-1	13	ND(10)

Date	Sample ID	Depth (ft bgs)	Laboratory Result (mg/kg)
3/17/2009	CS-1	13	320
3/17/2009	CS-2	9	11000
3/18/2009	CS-3	5	320
3/18/2009	CS-4	4	6000
4/22/2009	CS-5	3	34
3/18/2009	CS-6	3	ND(10)
4/22/2009	CS-7	3	400
4/21/2009	CS-8	3	6100(J)
3/18/2009	CS-9	3	ND(10)
4/22/2009	CS-10	3	24
4/22/2009	CS-11	3	380
4/22/2009	CS-12	3	490
4/23/2009	CS-13	3	ND(10)
4/21/2009	CS-14	7	130(J)
4/21/2009	CS-15	3.5	5000(J)
4/22/2009	CS-16	13	ND(10)
4/21/2009	CS-17	9	73
4/22/2009	CS-18	3	330
4/23/2009	CS-19	3	1700*
5/19/2009	CS-20	3.5	13000
5/19/2009	CS-21	3.5	3000
6/3/2009	CS-22	7	170(J)
6/3/2009	CS-23	3	ND(10)(UJ)
6/3/2009	CS-24	3	ND(10)(UJ)
7/23/2009	CS-25	10	6800(J)
7/23/2009	CS-26	10	17000(J)
7/23/2009	CS-27	10	1800(J)
7/23/2009	CS-28	5	110(J)
10/1/2009	CS-29	5	ND(10)
10/1/2009	CS-30	5	ND(10)
10/1/2009	CS-31	5	150
10/2/2009	A-1	13	ND(10)
10/2/2009	A-2	13	ND(10)
10/2/2009	A-3	13	ND(10)
8/23/2010	CS-32	2.5	55
8/23/2010	CS-33	5	58
8/23/2010	CS-34	5	ND(10)
8/25/2010	CS-35	13	ND(10)
8/23/2010	CS-36	7	21
8/23/2010	CS-37	2.5	36
8/23/2010	CS-38	7	ND(10)
8/23/2010	CS-39	5	ND(10)
8/23/2010	CS-40	5	ND(10)
8/23/2010	CS-41	2.5	210
8/23/2010	CS-42	2.5	21

Notes:
Results exceeding the NMED DRO Cleanup Standard of 890 mg/kg are shown in red.
ND(10)(UJ): Nondetect (limit)(Data Validation Qualifier).
*Blind duplicate result used since it was the most conservative.
J = Estimated concentration.
UJ = Estimated reporting limit.
R = rejected data.

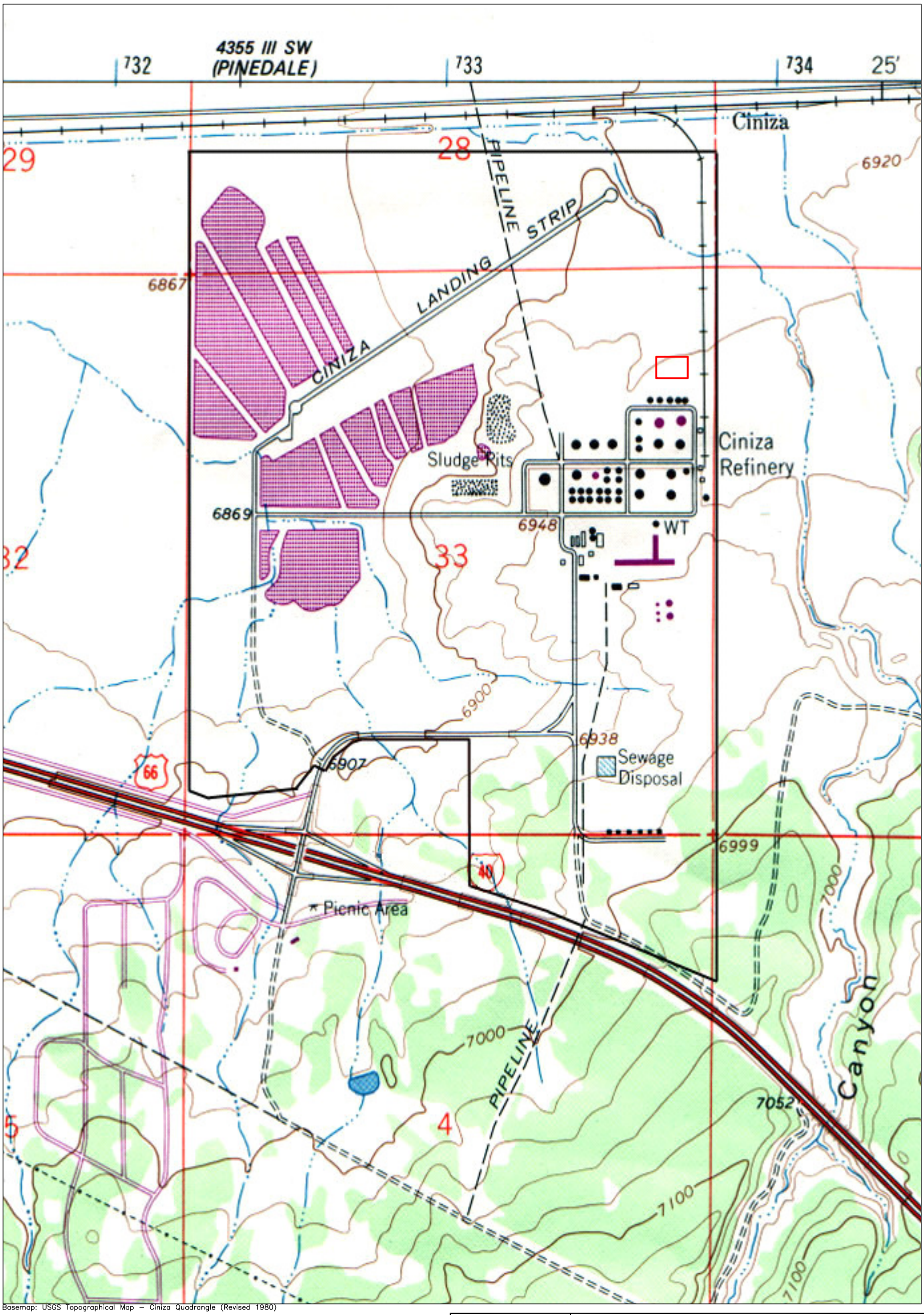
TABLE 2. FINAL CONFIRMATION SAMPLE ANALYTICAL DATA SUMMARY
RAILROAD RACK LAGOON OVERFLOW DITCH AND FAN-OUT AREA
WESTERN REFINING COMPANY, GALLUP REFINERY, GALLUP, NEW MEXICO

Excavation B-8				
Date	**Sample ID**	**Base Sample/ Sidewall Sample (Area)**	**Depth (ft bgs)**	**Laboratory DRO Result (mg/kg)**
10/18/2006	B-7	BS (Area 2)	5	ND(10)
10/17/2006	B-8Center	SS (Area 4)	5	43
5/23/2007	B-8NEW-NW	BS (Area 1); SS (Area 2)	3	130
5/23/2007	B-8NEW-NW	BS (Area 2)	5	310
5/23/2007	B-8NEW-NE	BS (Area 1)	3	130
12/17/2007	B-8NEW-SE-S1 (aka "B")	BS (Area 4)	13	ND(10)
8/20/2007	E	SS (Area 4)	5	ND(10)(UJ)
8/21/2007	J	BS (Area 1); SS (Area 2)	3	250(J)
8/21/2007	J	BS (Area 2)	5	ND(10)(UJ)
8/20/2007	K	SS (Area 4)	5	ND(10)(UJ)
8/21/2007	L	BS (Area 1)	3	42(J)
8/20/2007	M	SS (Area 3); SS (Area 4)	5	ND(10)(UJ)
12/17/2007	K-1	BS (Area 1)	3	ND(10)(UJ)
12/17/2007	G-1	BS (Area 1)	3	ND(10)
12/17/2007	I-1	BS (Area 1)	3	ND(10)(UJ)
12/17/2007	M-1	BS (Area 1)	3	ND(10)
3/17/2009	CS-1	BS (Area 4)	13	320
4/22/2009	CS-5	BS (Area 1)	3	34
3/18/2009	CS-6	BS (Area 1)	3	ND(10)
4/22/2009	CS-7	BS (Area 1)	3	400
3/18/2009	CS-9	BS (Area 1)	3	ND(10)
4/22/2009	CS-10	BS (Area 1)	3	24
4/22/2009	CS-11	BS (Area 1)	3	380
4/22/2009	CS-12	BS (Area 1)	3	490
4/23/2009	CS-13	BS (Area 1)	3	ND(10)
4/21/2009	CS-14	BS (Area 3); SS (Area 4)	7	130(J)
4/22/2009	CS-16	BS (Area 4)	13	ND(10)
10/1/2009	CS-29	BS (Area 2)	5	ND(10)
10/1/2009	CS-30	BS (Area 2)	5	ND(10)
10/1/2009	CS-31	BS (Area 2)	5	150
10/2/2009	A-1	BS (Area 4)	13	ND(10)
10/2/2009	A-2	BS (Area 4)	13	ND(10)
10/2/2009	A-3	BS (Area 4)	13	ND(10)
8/23/2010	CS-32	SS (Area 2)	2.5	55
8/23/2010	CS-33	BS (Area 2)	5	58
8/23/2010	CS-34	BS (Area 2)	5	ND(10)
8/25/2010	CS-35	BS (Area 4)	13	ND(10)
8/23/2010	CS-36	BS (Area 3)	7	21
8/23/2010	CS-37	SS (Area 2)	2.5	36
8/23/2010	CS-38	BS (Area 3)	7	ND(10)
8/23/2010	CS-39	BS (Area 2)	5	ND(10)
8/23/2010	CS-40	BS (Area 2)	5	ND(10)
8/23/2010	CS-41	SS (Area 2)	2.5	210
8/23/2010	CS-42	SS (Area 2)	2.5	21

Excavation B-9				
Date	**Sample ID**	**Base Sample/ Sidewall Sample (Area)**	**Depth (ft bgs)**	**Laboratory Result (mg/kg)**
5/23/2007	B-9NEW-Center	BS (B9 Excavation)	5	150
5/21/2007	B-9SE	SS (B9 Excavation)	3	210
5/21/2007	B-9SW	SS (Excavation)	3	210
5/21/2007	B-9NE	SS (Excavation)	3	200
5/21/2007	B-9NW	SS (Excavation)	3	130

Notes:
DRO = Diesel Range Organics
ND(10)(UJ): Nondetect (limit)(Data Validation Qualifier)
BS = Base Sample
SS = Sidewall Sample
J = Estimated concentration
UJ = Estimated reporting limit
ft bgs = feet below ground surface

FIGURES



Basemap: USGS Topographical Map – Ciniza Quadrangle (Revised 1980)

EXPLANATION

PROPERTY BOUNDARY

SOIL INVESTIGATION AREA

N

0 ~1,000'

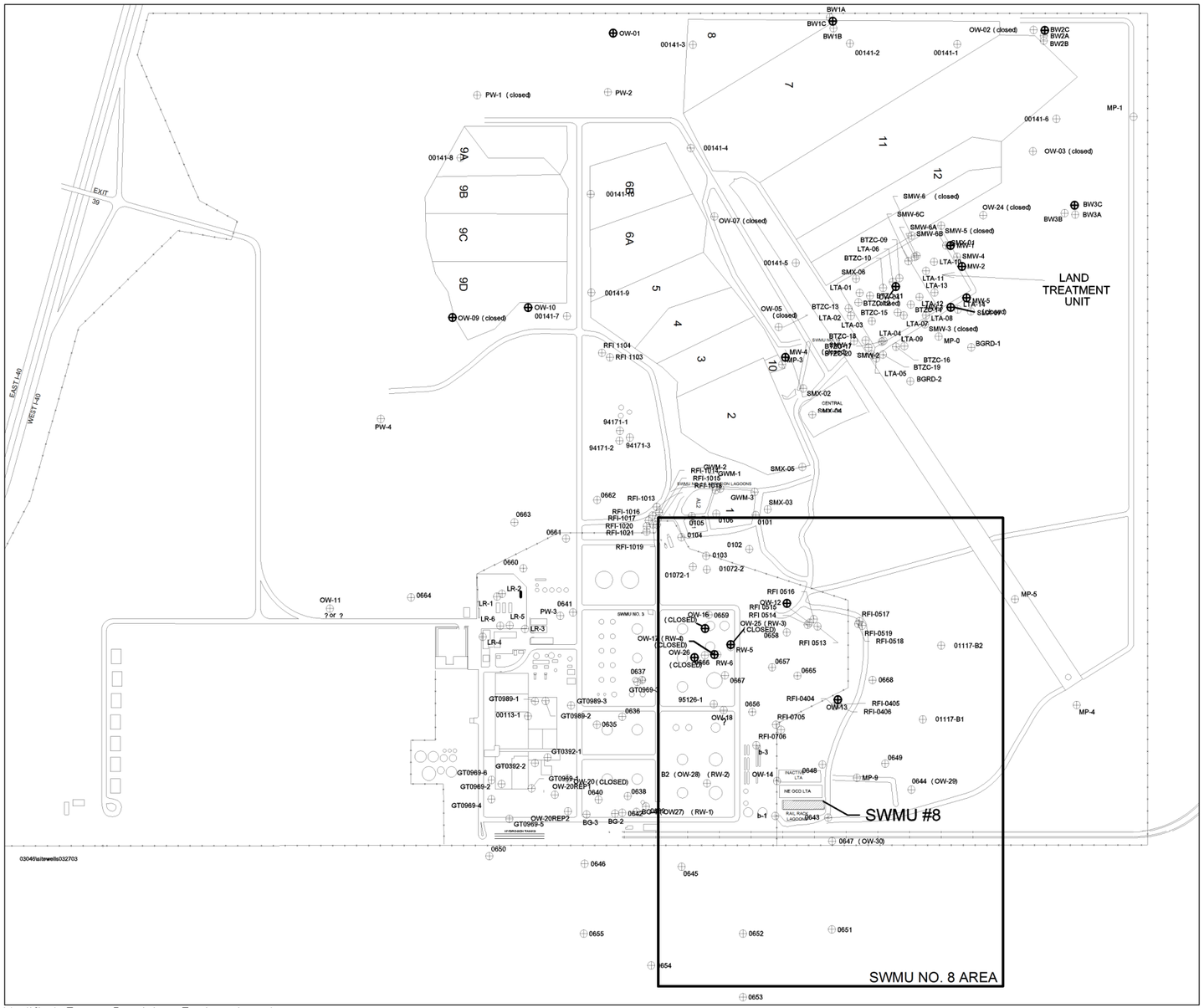
Trihydro CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 1

TOPOGRAPHIC MAP OF GALLUP REFINERY SITE

WESTERN REFINING
GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: REP	Checked By: RM	Scale: 1" = ~1,000'	Date: 12/28/09	File: 072TOPO-200912

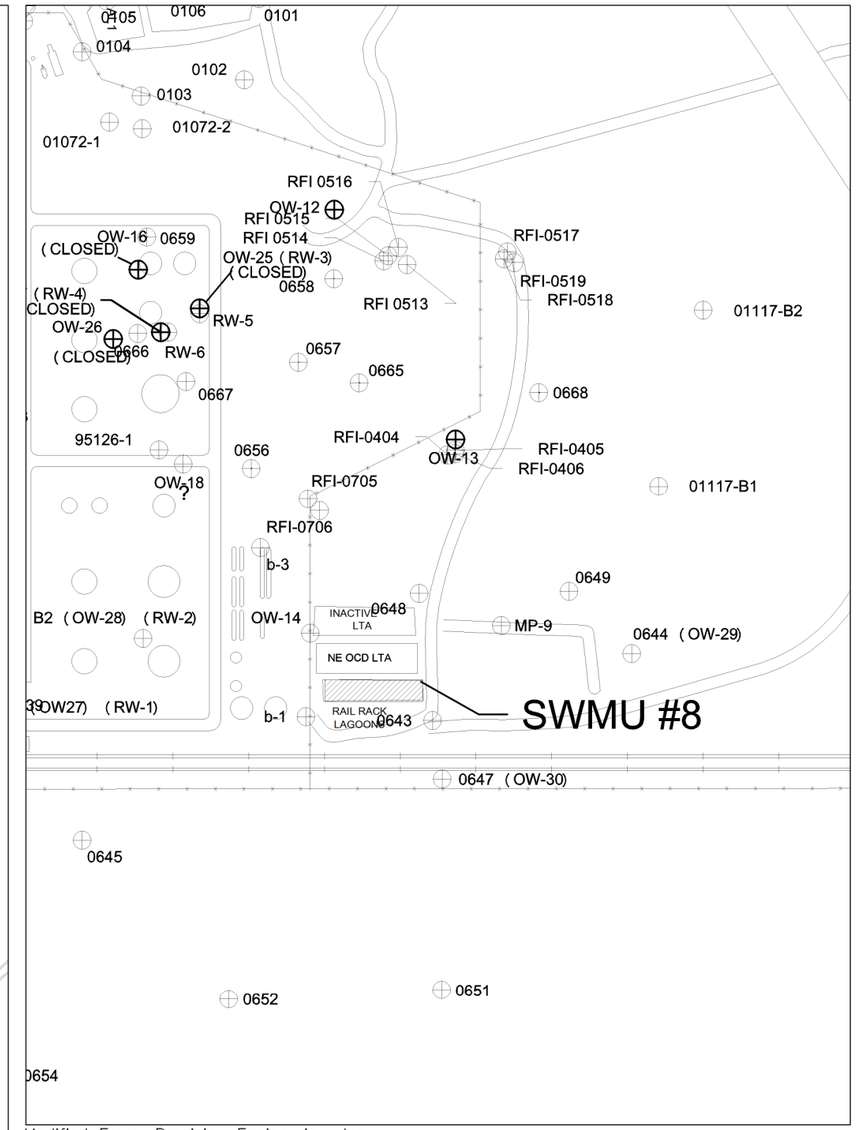


Modified From: Precision Engineering, Inc.

1 OVERALL PLAN VIEW
SCALE 1" = 800'

0 800'

N



Modified From: Precision Engineering, Inc.

2 SWMU NO. 8 AREA
SCALE 1" = 400'

0 400'

N

EXPLANATION

COLOR CODE:
SONSELA WELLS
CHINLE/ALLUVIUM INTERFACE WELLS
UPPER SAND WELLS
RAW WATER PRODUCTION WELL
ALL OTHER EXPLORATORY BORINGS

NOTE: CLOSED = ABANDONED

Well Locations Updated Through 12/18/06

NOTE:

BASE CADD FILE PROVIDED BY PRECISION ENGINEERING, DATED DECEMBER 18, 2006

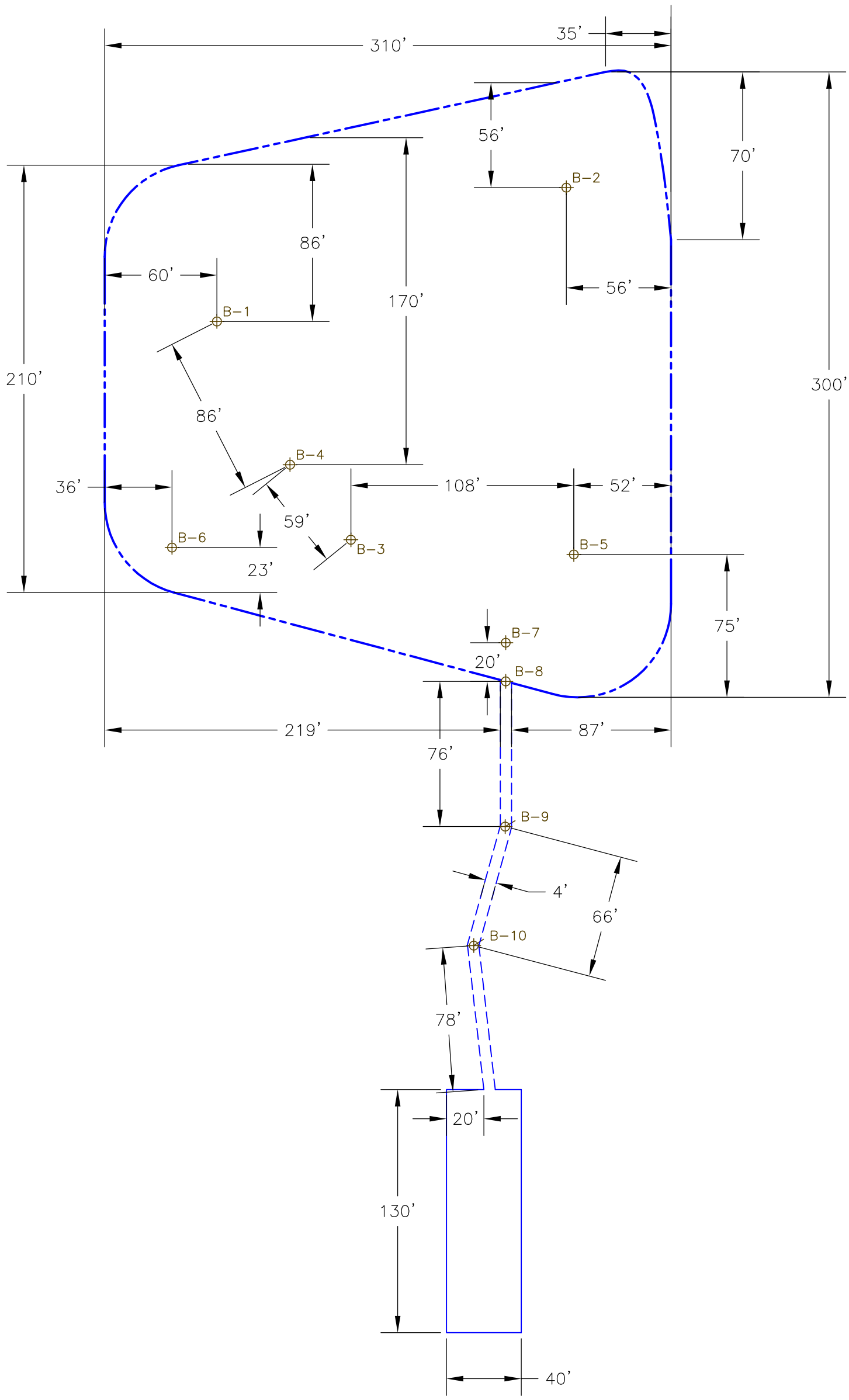
Trihydro CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 2

SWMU NO. 8 AND SURROUNDING WELLS

WESTERN REFINING
GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: SV	Checked By: RA	Scale: AS SHOWN	Date: 12/28/09	File: 072LOCSFROMOTHR



EXPLANATION

B-10 SOIL BORING LOCATION AND DESIGNATION

OUTFLOW DITCH

FAN-OUT AREA

RAIL ROAD RACK LAGOON

N

0 60'

Trihydro CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 3

RAILROAD RACK LAGOON
OVERFLOW DITCH AND FAN-OUT AREA
SOIL SAMPLE LOCATIONS

WESTERN REFINING
GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: REP	Checked By: JE	Scale: 1" = 60'	Date: 12/28/09	File: 072RROVERFLOW200912

AREA 1
(EXCAVATED TO 3 FEET)

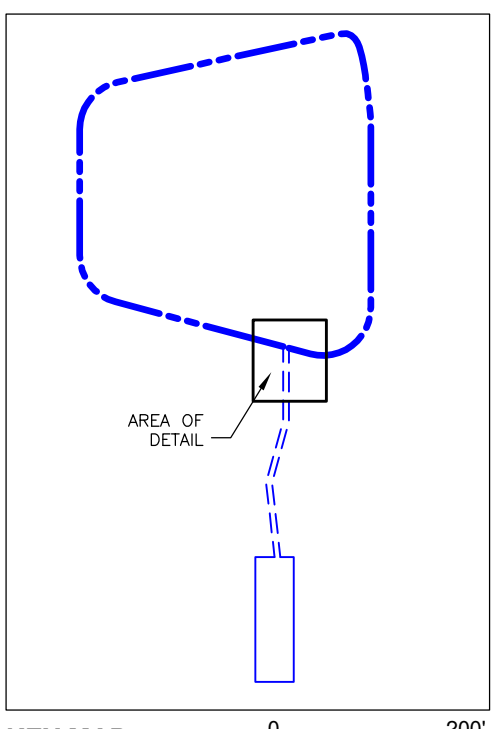
AREA 4
(EXCAVATED TO 13 FEET)

AREA 3
(EXCAVATED TO 7 FEET)

AREA 2
(EXCAVATED TO 5 FEET)

N

0 8'



KEY MAP

0 200'

N

EXPLANATION

- OUTFLOW DITCH
- FAN-OUT AREA
- RAILROAD RACK LAGOON
- ACTUAL EXCAVATION BOUNDARY
- PREVIOUSLY EXCAVATED AREA
- EXCAVATE TO 3 FEET - PROPOSED
- EXCAVATE TO 5 FEET - PROPOSED
- EXCAVATE TO 13 FEET - PROPOSED

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Laramie, Wyoming 82070
www.trihydro.com
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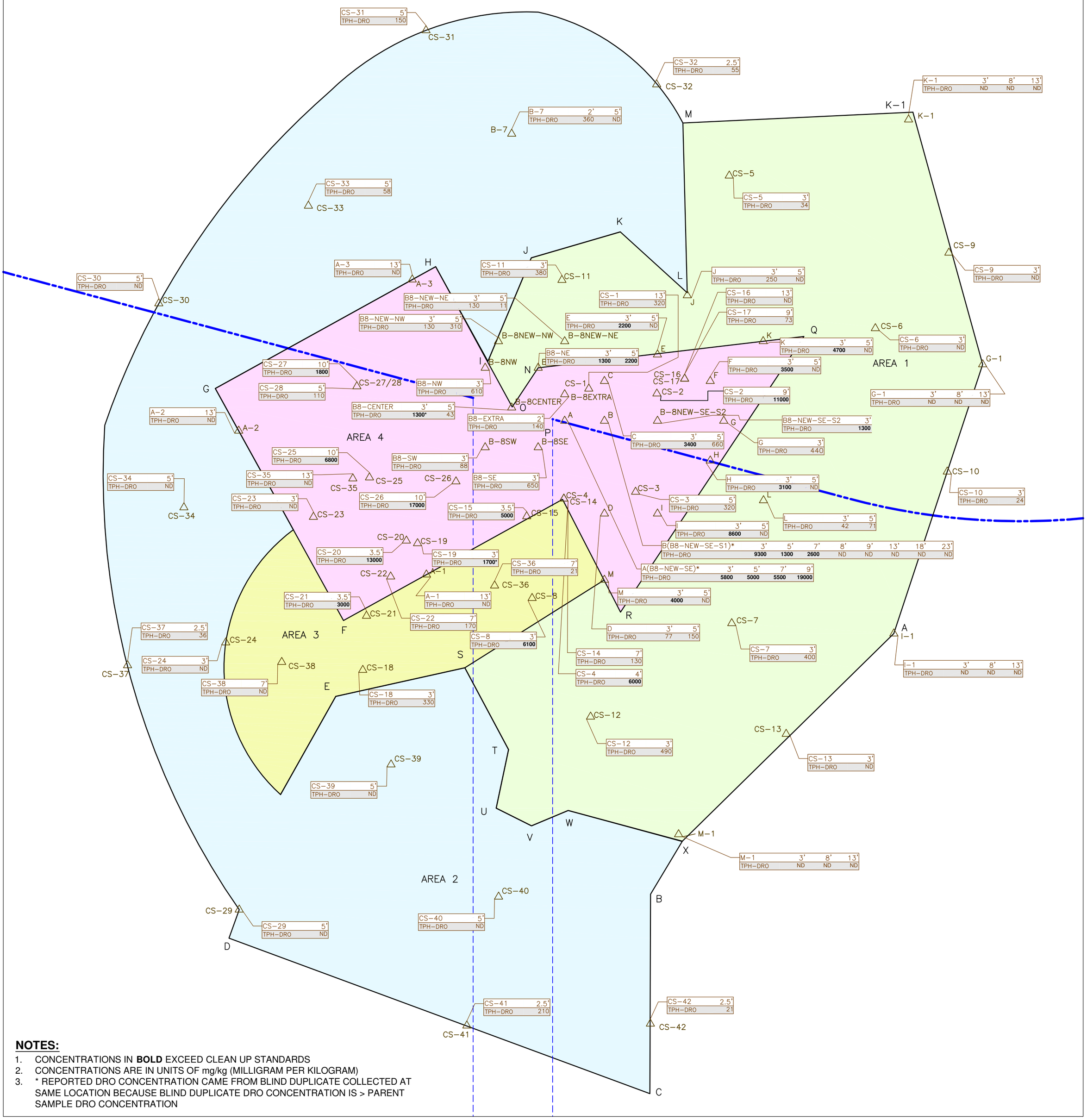
FIGURE 4

RAILROAD RACK LAGOON OVERFLOW DITCH PROPOSED AND ACTUAL EXCAVATION COMPARISON

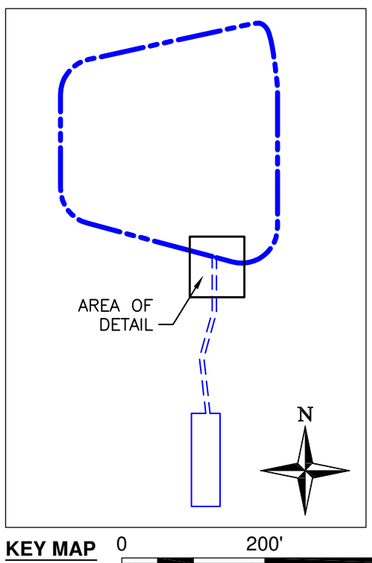
**WESTERN REFINING
GALLUP REFINERY
GALLUP, NEW MEXICO**

Drawn By: REP	Checked By: GP	Scale: AS SHOWN	Date: 12/21/09	File: 072SOILEXCAV200912



NOTES:

1. CONCENTRATIONS IN **BOLD** EXCEED CLEAN UP STANDARDS
2. CONCENTRATIONS ARE IN UNITS OF mg/kg (MILLIGRAM PER KILOGRAM)
3. * REPORTED DRO CONCENTRATION CAME FROM BLIND DUPLICATE COLLECTED AT SAME LOCATION BECAUSE BLIND DUPLICATE DRO CONCENTRATION IS > PARENT SAMPLE DRO CONCENTRATION



KEY MAP 0 200' 400'

EXPLANATION

- AREA 1 — EXCAVATED TO 3 FEET
- AREA 2 — EXCAVATED TO 5 FEET
- AREA 3 — EXCAVATED TO 7 FEET
- AREA 4 — EXCAVATED TO 13 FEET
- ACTUAL EXCAVATION BOUNDARY
- OUTFLOW DITCH
- FAN-OUT AREA
- RAILROAD RACK LAGOON
- ND — NON DETECT
- * — A(B8-NEW-SE) = MAY EVENT(AUGUST EVENT); B(B8-NEW-SE-S1) = MAY EVENT(AUGUST EVENT)
- △M-1 — SAMPLE LOCATION AND DESIGNATION

N

0 5' 10'

CONSTITUENT TABLE EXPLANATION

SAMPLE ID → M-1 3' 8' 13' ← SAMPLE DEPTH
TOTAL PETROLEUM HYDROCARBONS AS DIESEL RANGE ORGANICS → TPH-DRO ND ND ND ← CONCENTRATION

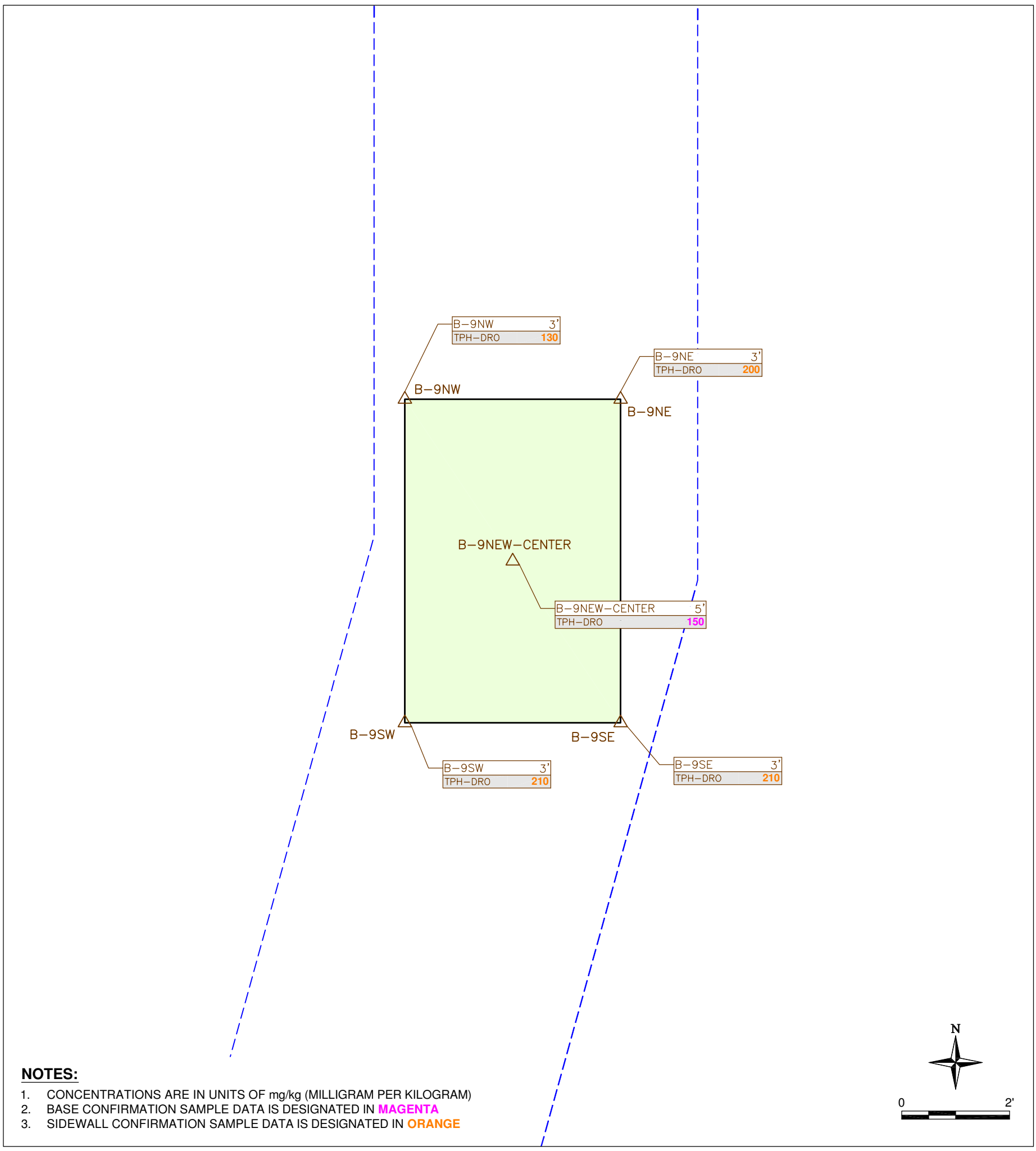
Trihydro CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 5

RAILROAD RACK LAGOON OVERFLOW DITCH B-8 FINAL EXCAVATION AREAS AND DRO RESULTS

WESTERN REFINING
GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: REP	Checked By: GP	Scale: AS SHOWN	Date: 8/30/2010	File: 697-SOIL-SAMPAREA-201008

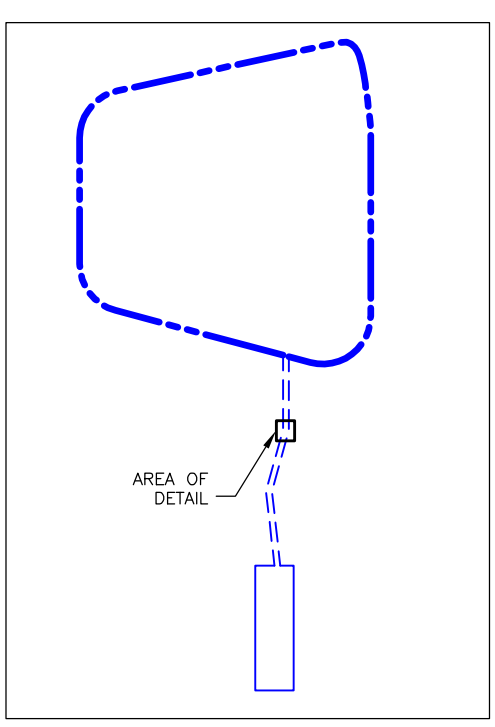


NOTES:

1. CONCENTRATIONS ARE IN UNITS OF mg/kg (MILLIGRAM PER KILOGRAM)
2. BASE CONFIRMATION SAMPLE DATA IS DESIGNATED IN **MAGENTA**
3. SIDEWALL CONFIRMATION SAMPLE DATA IS DESIGNATED IN **ORANGE**

EXPLANATION

△B-9SE	SAMPLE LOCATION AND DESIGNATION
	EXCAVATION DELINEATION BOUNDARY
	OUTFLOW DITCH
	FAN-OUT AREA
	RAILROAD RACK LAGOON
	EXCAVATED TO 5 FEET
ND	NON DETECT



KEY MAP

CONSTITUENT TABLE EXPLANATION

SAMPLE ID → B-9SE 3' ← SAMPLE DEPTH

TOTAL PETROLEUM HYDROCARBONS AS DIESEL RANGE ORGANICS → TPH-DRO ND ← CONCENTRATION

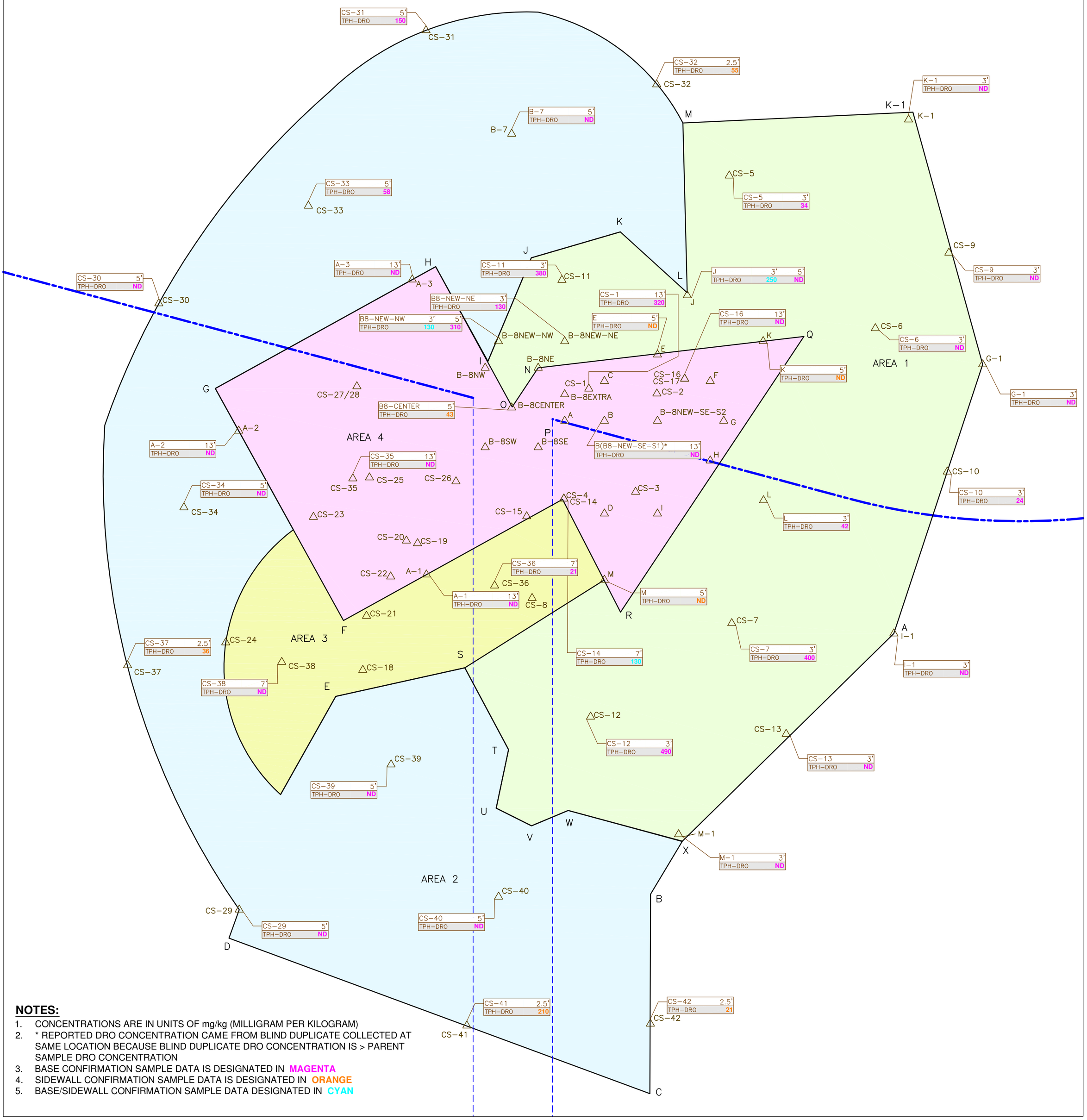
Trihydro CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 6

RAILROAD RACK LAGOON OVERFLOW DITCH
B-9 FINAL EXCAVATION AREA
AND SAMPLE RESULTS

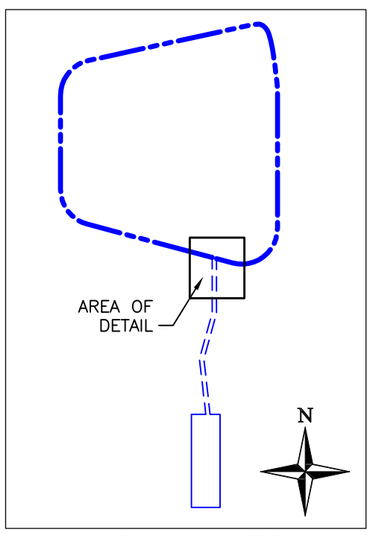
WESTERN REFINING
GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: REP	Checked By: GP	Scale: AS SHOWN	Date: 9/13/2010	File: 072SOILSAMP-B9-201009



NOTES:

1. CONCENTRATIONS ARE IN UNITS OF mg/kg (MILLIGRAM PER KILOGRAM)
2. * REPORTED DRO CONCENTRATION CAME FROM BLIND DUPLICATE COLLECTED AT SAME LOCATION BECAUSE BLIND DUPLICATE DRO CONCENTRATION IS > PARENT SAMPLE DRO CONCENTRATION
3. BASE CONFIRMATION SAMPLE DATA IS DESIGNATED IN **MAGENTA**
4. SIDEWALL CONFIRMATION SAMPLE DATA IS DESIGNATED IN **ORANGE**
5. BASE/SIDEWALL CONFIRMATION SAMPLE DATA DESIGNATED IN **CYAN**



KEY MAP 0 200' 400'

EXPLANATION

AREA 1	EXCAVATED TO 3 FEET
AREA 2	EXCAVATED TO 5 FEET
AREA 3	EXCAVATED TO 7 FEET
AREA 4	EXCAVATED TO 13 FEET
	ACTUAL EXCAVATION BOUNDARY
	OUTFLOW DITCH
	FAN-OUT AREA
	RAILROAD RACK LAGOON
ND	NON DETECT
*	A(B8-NEW-SE) = MAY EVENT(AUGUST EVENT) B(B8-NEW-SE-S1) = MAY EVENT(AUGUST EVENT)
M-1	SAMPLE LOCATION AND DESIGNATION

N

0 5' 10'

CONSTITUENT TABLE EXPLANATION

SAMPLE ID → M-1 3' ← SAMPLE DEPTH
TOTAL PETROLEUM HYDROCARBONS → TPH-DRO ND ← CONCENTRATION
AS DIESEL RANGE ORGANICS

Trihydro CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 7

RAILROAD RACK LAGOON OVERFLOW DITCH
B-8 FINAL BASE AND SIDEWALL CONFIRMATION
SAMPLE DRO RESULTS

WESTERN REFINING
GALLUP REFINERY
GALLUP, NEW MEXICO

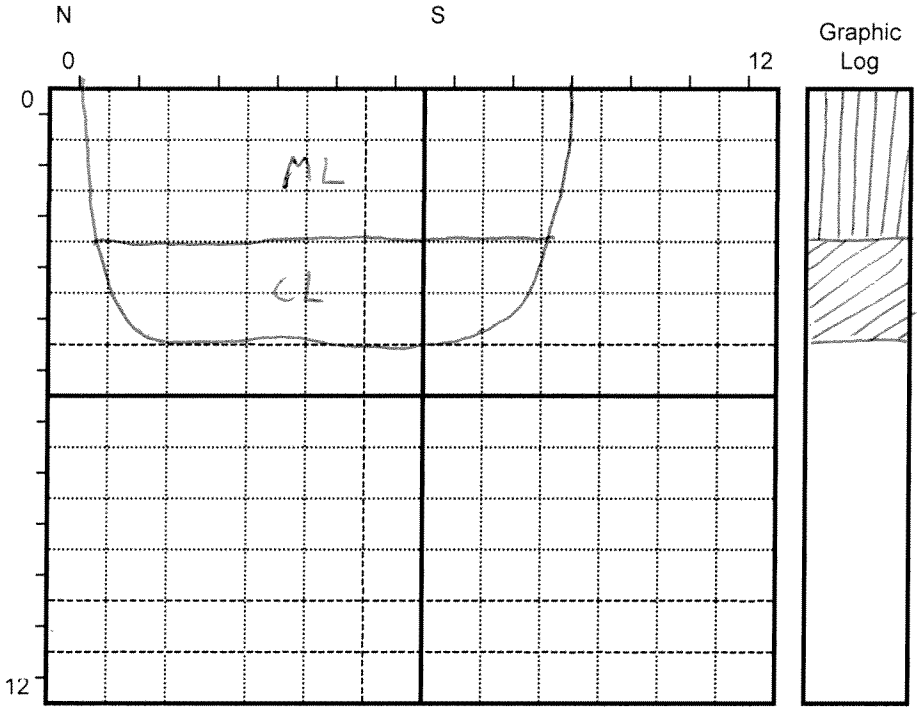
Drawn By: REP	Checked By: GP	Scale: AS SHOWN	Date: 8/31/2010	File: 697-SOIL-BS-201008

APPENDIX A

TEST PIT LOGS

FIGURE 3a. TEST PIT LOG
Ciniza Refinery, Gallup, New Mexico

Project/Job#:	072-013-001	Logged By:	Grant Price	Date:	5/21/2007 - 5/24/2007
Contractor:		Operator:	Steve Morris	Test Pit:	B-8
Location:	B8 Overflow Ditch	Elevation:		Equipment:	Case Backhoe
Photographs:	684, 686, 688, 720	Coordinates(x,y,z):			



Field Measures

Depth	TOV	pH
	none taken	none taken

Excavation deminsions:

6' N-S
4' E-W
3' Deep (5/21/2007)

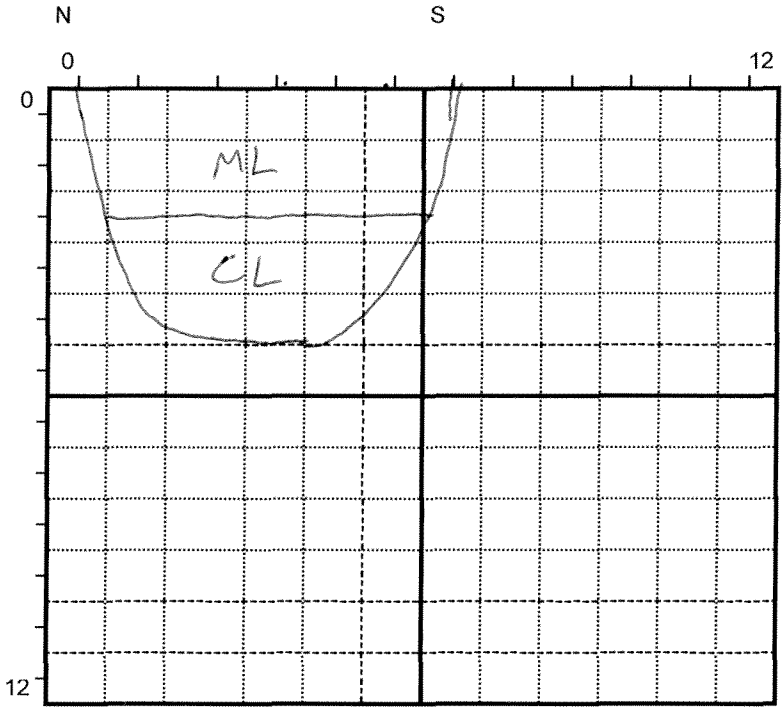
8' N-S
6' E-W
5' Deep (5/21/2007) (see figure B8new)

Depth to Water/ Liquid	
Depth	Type
None encountered	

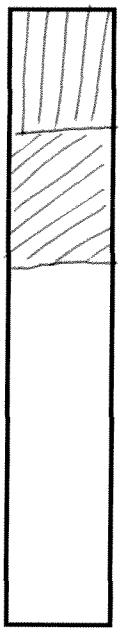
Depth (ft-bgs)	Description
0 - 3	Brown silt, some clay, dry/damp, mostly loose, low plasticity, no odor. Trace of black staining, follows fractures, soil is not saturated, see photos 690 and 691, no odor.
3 - 5	Brown silty clay, damp to moist, low plasticity, stiff to very stiff, same staining as above, no odor.

FIGURE 3a. TEST PIT LOG
Ciniza Refinery, Gallup, New Mexico

Project/Job#:	072-013-001	Logged By:	Grant Price	Date:	5/21/2007 - 5/24/2007
Contractor:		Operator:	Steve Morris	Test Pit:	B-9
Location:	B8 Overflow Ditch	Elevation:		Equipment:	Case Backhoe
Photographs:	685, 687, 689, 721	Coordinates(x,y,z):			



Graphic Log



Field Measures

Depth	TOV	pH
	none taken	none taken

Excavation deminsions:

6' N-S
4' E-W
3' Deep (5/21/2007)

TD increased to 5 ft bgs on 5/24/2007

Depth to Water/ Liquid	
Depth	Type
None encountered	

Depth (ft-bgs)	Description
0 - 2.5	Brown clayey silt, damp, mostly loose, low plasticity, no staining, no odor.
2.5 - 5	Brown silty clay, damp/moist, low plasticity, stiff, slightly siltier in center of excavation. Some black staining noted, very faint odor. Odor does not seem to be associated with staining.

APPENDIX B

SAMPLE FORMS

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification:	B7 - 2 ft	Logged by:	Grant Price
Sample Location:	B-7	Project/Job#:	072-006-001
Date:	10/17/2006	Samplers:	Grant Price/Regina Allen
Time:	15:45	Associated Test Pit:	B-7
Weather:	clearing up, about 55	If Duplicate List Original Source:	
Site Description:	N of out-flow ditch		
Photographs:	105-508, 105-509, 105-524	Coordinates(x,y,z):	

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: ML
Color: Brown
Texture: Silt, some clay
Moisture Content: Dry to damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness):
Mostly loose
Grain Size and Shape: NA
Analysis Required: DRO, VOCs, Metals, Mercury, Cyanide
Number of Sample Bottles: 3
Notes:

Brown silt, some clay, dry to damp, very low plasticity, mostly loose, some chunks up to 1.0", no staining, no odor, background TOV = 0.5 ppm.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (ft-bgs)	PID/FID Reading (ppm)	Description
2	2.8	See notes/testpit logs

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification:	B7 - 5 ft	Logged by:	Grant Price
Sample Location:	B-7	Project/Job#:	072-006-001
Date:	10/18/2006	Samplers:	Grant Price/Regina Allen
Time:	09:50	Associated Test Pit:	B-7
Weather:	Sunny, about 55	If Duplicate List Original Source:	
Site Description:	N of overflow ditch		
Photographs:	105-524	Coordinates(x,y,z):	

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: CL
Color: Brown
Texture: Silty clay
Moisture Content: Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness):
Medium stiff, low plasticity
Grain Size and Shape: NA
Analysis Required: DRO, VOCs, Metals, Mercury, Cyanide
Number of Sample Bottles: 3
Notes:

Brown silty clay, damp, very few unconsolidated fines, almost all chunks (0.2" to 1.0"), medium stiff, low plasticity, no odor, no staining. Background TOV = 0.2 ppm.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (ft-bgs)	PID/FID Reading (ppm)	Description
5	5.8	See notes/testpit logs

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8 SW Logged by: Grant Price
Sample Location: SW corner of B8 Project/Job#: 072-013-001
Date: 5/21/2007 Samplers: Grant Price Regina Allen
Time: 12:42 PM Associated Test Pit: B8
Weather: Sunny, windy, about 75 If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 684, 686, 688 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey Silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey silt, damp, low plasticity, no staining, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes: field screening test kit showed no contamination

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8 SE
Logged by: Grant Price
Sample Location: SE corner of B8
Project/Job#: 072-013-001
Date: 5/21/2007
Samplers: Grant Price Regina Allen
Time: 12:47 PM
Associated Test Pit: B8
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 684, 686, 688
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey Silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey silt, damp, low plasticity, no staining, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes: field screening test kit showed no contamination

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8 Center
Logged by: Grant Price
Sample Location: center of B8
Project/Job#: 072-013-001
Date: 5/21/2007
Samplers: Grant Price Regina Allen
Time: 12:30 PM
Associated Test Pit: B8
Weather: Sunny, windy, about 75
If Duplicate List Original Source: BD05212007, MS, and
Site Description: North end of overflow ditch
Photographs: 684, 686, 688
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey Silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey silt, damp, low plasticity, no staining, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes: field screening test kit showed no contamination

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification:	B8 - 5 ft (B8-Center)	Logged by:	Grant Price
Sample Location:	B-8	Project/Job#:	072-006-001
Date:	10/17/2006	Samplers:	Grant Price/Regina Allen
Time:	10:50	Associated Test Pit:	B-8
Weather:	Cloudy, windy, about 45	If Duplicate List Original Source:	
Site Description:	N end of overflow ditch		
Photographs:	105-515	Coordinates(x,y,z):	

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger
[_] Other (Describe):

Sample Type: Soil
USCS Group: CL
Color: Brown
Texture: Silty clay
Moisture Content: Moist
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness):
Stiff to very stiff, low plasticity
Grain Size and Shape: NA
Analysis Required: DRO, VOCs, Metals, Mercury, Cyanide
Number of Sample Bottles: 3
Notes:

Brown silty clay, damp to moist, low plasticity, stiff to very stiff, no odor, no staining.
Background TOV = 1.0 ppm.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (ft-bgs)	PID/FID Reading (ppm)	Description
5	1.5	See notes/testpit logs

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8extra 2' Logged by: Grant Price
Sample Location: E side of B8new Project/Job#: 072-013-001
Date: 5/23/2007 Samplers: Grant Price Regina Allen
Time: 11:25 AM Associated Test Pit: B8
Weather: Sunny, windy, about 75 If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 690, 691 show similar staining Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey Silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey silt, damp, low plasticity, black staining in fractures, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
2'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8 NW Logged by: Grant Price
Sample Location: NW corner of B8 Project/Job#: 072-013-001
Date: 5/21/2007 Samplers: Grant Price Regina Allen
Time: 12:30 PM Associated Test Pit: B8
Weather: Sunny, windy, about 75 If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 684, 686, 688 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey Silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey silt, damp, low plasticity, no staining, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes: field screening test kit showed no contamination

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8 NE
Logged by: Grant Price
Sample Location: NE corner of B8
Project/Job#: 072-013-001
Date: 5/21/2007
Samplers: Grant Price Regina Allen
Time: 12:37 PM
Associated Test Pit: B8
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 684, 686, 688
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey Silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey silt, damp, low plasticity, no staining, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes: field screening test kit showed no contamination

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8-NE-8_20_5 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 14:45:00 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: none Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Silty clay, trace sand
Moisture Content: Dry / Moist / Wet Moist
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silty clay, trace sand, moist, high plasticity, medium soft, slight HC odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
5-6'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8newNW 3'
Logged by: Grant Price
Sample Location: NW corner of B8new
Project/Job#: 072-013-001
Date: 5/23/2007
Samplers: Grant Price Regina Allen
Time: 11:53 AM
Associated Test Pit: B8
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 719
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey Silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey silt, damp, low plasticity, no staining, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8newNW 5'
Logged by: Grant Price
Sample Location: NW corner of B8new
Project/Job#: 072-013-001
Date: 5/23/2007
Samplers: Grant Price Regina Allen
Time: 12:55 PM
Associated Test Pit: B8
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 697, 719
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: Cl
Color: Brown
Texture: Silty clay
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silty clay, damp to moist, low plasticity, very stiff, no staining, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
5'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8newNE 3'
Logged by: Grant Price
Sample Location: NE corner of B8new
Project/Job#: 072-013-001
Date: 5/23/2007
Samplers: Grant Price Regina Allen
Time: 11:42 AM
Associated Test Pit: B8
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 693, 694, 719
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey Silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey silt, damp, low plasticity, no staining, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8newNE 5'
Logged by: Grant Price
Sample Location: NE corner of B8new
Project/Job#: 072-013-001
Date: 5/23/2007
Samplers: Grant Price Regina Allen
Time: 12:25 PM
Associated Test Pit: B8
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 696, 719
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Silty Clay
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silty clay, damp to moist, low plasticity, very stiff, no staining, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
5'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8newSE 3' Logged by: Grant Price
Sample Location: SE corner of B8new Project/Job#: 072-013-001
Date: 5/23/2007 Samplers: Grant Price Regina Allen
Time: 12:00 PM Associated Test Pit: B8
Weather: Sunny, windy, about 75 If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 719 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey Silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey silt, damp, low plasticity, no staining, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8newSE 5'
Logged by: Grant Price
Sample Location: SE corner of B8new
Project/Job#: 072-013-001
Date: 5/23/2007
Samplers: Grant Price Regina Allen
Time: 1:15 PM
Associated Test Pit: B8
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 698, 719
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Clay, tracy of silt, trace of sand
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clay, trace of silt, trace of sand, moist, very low plasticity, no staining, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
5'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_A_7 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 14:50:00 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 830 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown/dark brown
Texture: Clay, some silt
Moisture Content: Dry / Moist / Wet Damp/moist
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): brown/dark brown clay some silt, damp/moist, moderate/high plasticity, HC odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
6-8'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_A_9 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 15:20:00 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 831 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey silt, some sand
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey silt, damp, slight plasticity, HC odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
8-10'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8newSE-S1 3'
Logged by: Grant Price
Sample Location: 3' E of SE corner of B8new
Project/Job#: 072-013-001
Date: 5/23/2007
Samplers: Grant Price Regina Allen
Time: 5:30 PM
Associated Test Pit: B8
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 714, 719
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Silt, some clay
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silt, some clay, moist, low plasticity, no staining, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8newSE-S1 5'
Logged by: Grant Price
Sample Location: 3' E of SE corner of B8new
Project/Job#: 072-013-001
Date: 5/23/2007
Samplers: Grant Price Regina Allen
Time: 5:42 PM
Associated Test Pit: B8
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 715, 719
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Clay, tracy of silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clay, trace of silt, damp, very low plasticity, no staining, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
5'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_B_7 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 11:15 AM Associated Test Pit: B8
Weather: If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 819 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Dark brown
Texture: Clay, trace sand
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Dark brown clay, trace sand, damp, medium to high plasticity, medium stiff, slight HC odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
6-8'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_B_9 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 11:50 AM Associated Test Pit: B8
Weather: If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 820 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Dark brown
Texture: Clay, trace sand, trace silt
Moisture Content: Dry / Moist / Wet Dry
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Dark brown clay, trace sand, trace silt, dry, low plasticity, stiff, slight HC odor (less than B_8_20_B_7).
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
8-10'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8newSE-S2 3'
Logged by: Grant Price
Sample Location: 7' E of SE corner of B8new
Project/Job#: 072-013-001
Date: 5/23/2007
Samplers: Grant Price Regina Allen
Time: 6:05 PM
Associated Test Pit: B8
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 717, 719
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Silt, some clay
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silt, some clay, damp, low plasticity, no staining, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8newSE-S2 5'
Logged by: Grant Price
Sample Location: 7' E of SE corner of B8new
Project/Job#: 072-013-001
Date: 5/23/2007
Samplers: Grant Price Regina Allen
Time: 6:28 PM
Associated Test Pit: B8
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 718, 719
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Clay, tracy of silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clay, trace of silt, damp, very low plasticity, no staining, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
5'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B9 Center
Logged by: Grant Price
Sample Location: Center of B9
Project/Job#: 072-013-001
Date: 5/21/2007
Samplers: Grant Price Regina Allen
Time: 13:37:00 PM
Associated Test Pit: B9
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: Middle of overflow ditch
Photographs: 685, 687, 689
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Clay, some silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clay, some silt damp/moist, low plasticity, no staining, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes: field screening test kit showed no contamination

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B9new Center 5' Logged by: Grant Price
Sample Location: Center of B9 Project/Job#: 072-013-001
Date: 5/23/2007 Samplers: Grant Price Regina Allen
Time: 1:30 PM Associated Test Pit: B9
Weather: Sunny, windy, about 75 If Duplicate List Original Source: None
Site Description: Middle of overflow ditch
Photographs: 699, 700 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Clay, some silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clay, some silt damp, very low plasticity, no staining, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes: field screening test kit showed no contamination

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
5'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B9 SE
Logged by: Grant Price
Sample Location: SE corner of B9
Project/Job#: 072-013-001
Date: 5/21/2007
Samplers: Grant Price Regina Allen
Time: 13:30:00 PM
Associated Test Pit: B9
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: Middle of overflow ditch
Photographs: 685, 687, 689
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Clay, trace of silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clay, trace of silt, damp/moist, low plasticity, no staining, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes: field screening test kit showed no contamination

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B9 SW
Logged by: Grant Price
Sample Location: SW corner of B9
Project/Job#: 072-013-001
Date: 5/21/2007
Samplers: Grant Price Regina Allen
Time: 13:23:00 PM
Associated Test Pit: B9
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: Middle of overflow ditch
Photographs: 685, 687, 689
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Clay, trace of silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clay, trace of silt, damp/moist, low plasticity, trace of rust colored staining, trace of dark brown/black organics, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes: field screening test kit showed no contamination

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B9 NE
Logged by: Grant Price
Sample Location: NE corner of B9
Project/Job#: 072-013-001
Date: 5/21/2007
Samplers: Grant Price Regina Allen
Time: 13:18:00 PM
Associated Test Pit: B9
Weather: Sunny, windy, about 75
If Duplicate List Original Source: None
Site Description: Middle of overflow ditch
Photographs: 685, 687, 689
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Clay, trace of silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clay, trace of silt, damp/moist, low plasticity, trace of rust colored staining, trace of dark brown/black organics, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes: field screening test kit showed no contamination

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B9 NW Logged by: Grant Price
Sample Location: NW corner of B9 Project/Job#: 072-013-001
Date: 5/21/2007 Samplers: Grant Price Regina Allen
Time: 13:09:00 PM Associated Test Pit: B9
Weather: Sunny, windy, about 75 If Duplicate List Original Source: None
Site Description: Middle of overflow ditch
Photographs: 685, 687, 689 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Clay, trace of silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clay, trace of silt, damp/moist, low plasticity, trace of rust colored staining, trace of dark brown/black organics, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes: field screening test kit showed no contamination

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
3'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_C_3 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 13:35:00 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 826 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey silt, trace sand
Moisture Content: Dry / Moist / Wet Dry/damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey silt, trace sand, dry/damp, slight plasticity, medium stiff, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
2-4'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_C_5 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 13:50:00 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 827 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Silty clay, trace sand
Moisture Content: Dry / Moist / Wet Dry/damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silty clay, trace sand, dry/damp, no plasticity, stiff/very stiff.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
4-6'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_D_3 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 12:15 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 822 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Silty clay, some sand
Moisture Content: Dry / Moist / Wet Dry
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silty clay, some sand, dry, crumbles easily, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
2-4'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_D_5 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 12:30 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 823 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Silty clay
Moisture Content: Dry / Moist / Wet Dry/damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silty clay, dry/damp, very low plasticity (crumbles easily), no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
4-6'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_E_3 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 16:00:00 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source: 8-20-07 Duplicate
Site Description: North end of overflow ditch
Photographs: 833 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Clay, some silt, some sand
Moisture Content: Dry / Moist / Wet Dry/damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clay, some silt, some sand, dry/damp, very low plasticity, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes: Blind duplicate collected here.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
2-4'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_E_5 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 16:15:00 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 834 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Silt, some clay, some sand
Moisture Content: Dry / Moist / Wet Dry/damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silt, some clay, some sand, dry/damp, very low plasticity, very dense, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
4-6'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_F_3 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 17:00:00 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 836 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey silt
Moisture Content: Dry / Moist / Wet Dry
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey silt, dry, low plasticity, no odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
2-4'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_F_5 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 17:25:00 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source: None
Site Description: North end of overflow ditch
Photographs: 837 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: ML
Color: Light brown
Texture: Silt, some clay
Moisture Content: Dry / Moist / Wet Dry
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Light brown silt, some some clay, dry, no plasticity, very stiff, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
4-6'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_G_3 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 17:40:00 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source: MS/MSD
Site Description: North end of overflow ditch
Photographs: 839 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Silty clay
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silty clay, damp, low plasticity, very slight HC odor
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes: MS/MSD collected here.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
2-4'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_21_H_3 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/21/2007 Samplers: Grant Price Regina Allen
Time: 11:40 AM Associated Test Pit: B8
Weather: If Duplicate List Original Source:
Site Description: North end of overflow ditch
Photographs: 856 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey silt
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey silt, damp, low plasticity, medium stiff, slight HC odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
2-4'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_21_H_5 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/21/2007 Samplers: Grant Price Regina Allen
Time: 11:45 AM Associated Test Pit: B8
Weather: If Duplicate List Original Source:
Site Description: North end of overflow ditch
Photographs: 857 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Silty clay
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silty clay, damp, very low plasticity, stiff, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
4-6'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_21_I_3 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/21/2007 Samplers: Grant Price Regina Allen
Time: 11:15 AM Associated Test Pit: B8
Weather: If Duplicate List Original Source:
Site Description: North end of overflow ditch
Photographs: 853 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Silty clay, some sand
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silty clay, damp, medium plasticity, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
2-4'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_21_I_5 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/21/2007 Samplers: Grant Price Regina Allen
Time: 11:25 AM Associated Test Pit: B8
Weather: If Duplicate List Original Source:
Site Description: North end of overflow ditch
Photographs: 854 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Silty clay
Moisture Content: Dry / Moist / Wet Damp
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silty clay, damp, low plasticity, medium soft/medium hard, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
4-6'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_21_J_3 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/21/2007 Samplers: Grant Price Regina Allen
Time: 9:20 AM Associated Test Pit: B8
Weather: If Duplicate List Original Source:
Site Description: North end of overflow ditch
Photographs: 849 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Silty clay, trace sand
Moisture Content: Dry / Moist / Wet Dry
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silty clay, trace sand, dry, low plasticity, medium stiff, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
2-4'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_21_J_5 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/21/2007 Samplers: Grant Price Regina Allen
Time: 9:30 AM Associated Test Pit: B8
Weather: If Duplicate List Original Source:
Site Description: North end of overflow ditch
Photographs: 850 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Clay, some silt, trace sand
Moisture Content: Dry / Moist / Wet Dry
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clay, some silt, trace sand, dry, very low plasticity, stiff/very stiff, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
4-6'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_K_3 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 19:00:00 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source:
Site Description: North end of overflow ditch
Photographs: 845 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey, sandy silt
Moisture Content: Dry / Moist / Wet Dry
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey, sandy silt, dry, non-plastic, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
2-4'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_K_5 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 19:20:00 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source:
Site Description: North end of overflow ditch
Photographs: 846 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Silty clay, trace sand
Moisture Content: Dry / Moist / Wet Dry
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown silty clay, trace sand, dry, very low plasticity, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
4-6'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_21_L_3 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/21/2007 Samplers: Grant Price Regina Allen
Time: 12:05 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source:
Site Description: North end of overflow ditch
Photographs: 859 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: ML
Color: Brown
Texture: Clayey silt
Moisture Content: Dry / Moist / Wet Dry
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clayey silt, dry, non-plastic, medium stiff, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
2-4'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_21_L_5 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/21/2007 Samplers: Grant Price Regina Allen
Time: 12:12 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source:
Site Description: North end of overflow ditch
Photographs: 860 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: ML/CL
Color: Brown
Texture: Upper foot = clayey silt, lower foot = clay, some silt
Moisture Content: Dry / Moist / Wet Dry
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Upper foot brown clayey silt, lower foot clay, some silt, dry, non-plastic, medium stiff/stiff, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
4-6'	None taken	See notes/test pit log

FIGURE 3b. SOIL / WASTE SAMPLE LOG
Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_M_3 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 18:20:00 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source:
Site Description: North end of overflow ditch
Photographs: 842 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Brown
Texture: Clay, some silt, trace sand
Moisture Content: Dry / Moist / Wet Dry
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Brown clay, some silt, trace sand, dry, non-plastic, stiff, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
2-4'	None taken	See notes/test pit log

Ciniza Refinery, Gallup New Mexico

Sample Identification: B8_8_20_M_5 Logged by: Grant Price
Sample Location: see figure Project/Job#: 072-013-001
Date: 8/20/2007 Samplers: Grant Price Regina Allen
Time: 18:40:00 PM Associated Test Pit: B8
Weather: If Duplicate List Original Source:
Site Description: North end of overflow ditch
Photographs: 843 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Manual Geoprobe
Sample Type: Soil / Waste
USCS Group: CL
Color: Light brown/brown
Texture: Clay, some silt, trace sand
Moisture Content: Dry / Moist / Wet Dry
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): Light brown/brown clay, some silt, trace sand, dry, non-plastic, stiff, no odor.
Grain Size and Shape: NA
Analysis Required: DRO
Number of Sample Bottles: one 4 OZ
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
4-6'	None taken	See notes/test pit log

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: CS-1 (C-1) Logged by: **Regina Mitchell**
Sample Location: **Fan Out Area** Project/Job#: **072-013-001**
Date: 2/17/09 Samplers: **Regina Mitchell**
Time: @ 1610 Associated Test F **Not Applicable**
Weather: Sunny 65-70°F If Duplicate List Original Source: N/A
Site Description: **Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**
Photographs: 1116 - 1622 Coordinates(x,y,z): N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [✓] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: Brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs

Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: • one 4oz Jar
Notes:
• Collected field screening in 4oz jar as well
• Collected @ bottom of 13' excavation
• Used hand auger
• Denoted as "C-1" in photo

Discreet Soil Interval Description

Graphic Log

Depth = 13 feet = base

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
	visually	
	determined	
N/A	clean by	N/A
	director	

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: CS-2 Logged by: Regina Mitchell
Sample Location: Fan Out Area Project/Job#: 072-013-001
Date: 3/17/09 Samplers: Regina Mitchell
Time: 1450 Associated Test F Not Applicable
Weather: sunny 65°F If Duplicate List Original Source: N/A
Site Description: Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area
Photographs: 116-1618 Coordinates(x,y,z): N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [✓] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: Brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 1 5oz (4oz)
Notes:
- MS/MSD collected here
- collected field screening in 4oz jar as well
- collected at bottom of 9' excavation on way to excavating to 13' feet.
- used Hand auger 2

Discreet Soil Interval Description

Graphic Log Depth = 9 feet Sidewall

0'
6'
12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
N/A	visually determined "clean" by instructor Spectrometer was inoperable/	N/A

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: CS-3
Logged by: Regina Mitchell
Sample Location: Fan Out Area
Project/Job#: 072-013-001
Date: 3/18/09
Samplers: Regina Mitchell
Time: 1355
Associated Test F Not Applicable
Weather: Sunny
If Duplicate List Original Source: N/A
Site Description: Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area
Photographs: 1116 - 1624
Coordinates(x,y,z): N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [✓] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: Brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: • 1 4 oz jar
Notes: • collected field screening in 4 oz jar also
• used hand auger (after collecting EBI-031809 equipment blank)
• collected from sidewall base of excavation @ 5 ft bgs

Discreet Soil Interval Description

Graphic Log

Depth = 5 feet base

Depth (in / ft)	PID/FID Reading (ppm)	Description
	ND (0.60) ppm	320 ppm (mg/kg)
N/A		

0'
6'
12'

spectrometer
Lab result

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-4	Logged by:	Regina Mitchell
Sample Location:	Fan Out Area	Project/Job#:	072-013-001
Date:	3/18/09	Samplers:	Regina Mitchell
Time:	1405	Associated Test F	Not Applicable
Weather:	sunny	If Duplicate List Original Source:	N/A
Site Description:	Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area		
Photographs:	1116 - 1625	Coordinates(x,y,z):	N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [✓] Auger

[_] Other (Describe):

Sample Type: Soil

USCS Group: See Previous test pit/bore hole logs

Color: Brown

Texture: See Previous test pit/bore hole logs

Moisture Content: Dry / Moist / Wet

Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs

Grain Size and Shape: See Previous test pit/bore hole logs

Analysis Required: 8015B

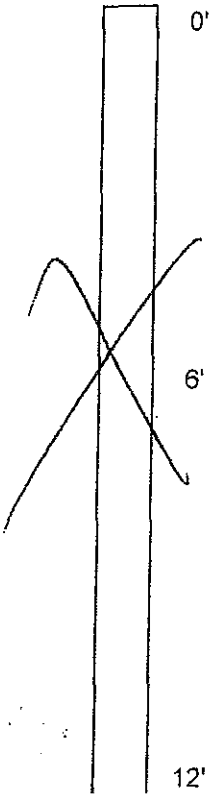
Number of Sample Bottles:

Notes:
- collected in 4oz jar
- collected field screening in 4oz jar also
- used hand auger (after collecting EB2-031809)
- collected from sidewall w/ auger @ 4 ft bgs

Discreet Soil Interval Description

Graphic Log

Depth = 4 ft sidewall



Depth (in / ft)	PID/FID Reading (ppm)	Description
	Spectrometer:	Lab result
	44.62 (High) ppm	6,000 ppm (mg/kg)

WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-5	Logged by:	Regina Mitchell
Sample Location:	Fan Out Area	Project/Job#:	072-013-001
Date:	4/22/09	Samplers:	Regina Mitchell
Time:	1540	Associated Test F	Not Applicable
Weather:	Sunny	If Duplicate List Original Source:	N/A
Site Description:	Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area		
Photographs:	1657	Coordinates(x,y,z):	N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger

[_] Other (Describe):

Sample Type: Soil

USCS Group: See Previous test pit/bore hole logs

Color: Brown

Texture: See Previous test pit/bore hole logs

Moisture Content: Dry / Moist / Wet

Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs

Grain Size and Shape: See Previous test pit/bore hole logs

Analysis Required: 8015B

Number of Sample Bottles: collected one 4oz jar sample

Notes: collected one 4oz jar for FS/CS-5
Sample collected from depth of 3 ft bgs (Base)

Discreet Soil Interval Description

Graphic Log

Depth = 3 feet, Base

0'

6'

12'

~~Depth (in / ft)~~	~~PID/FID Reading (ppm)~~ SPECTROMETER	~~Description~~ LAB RESULT
	2.294	34 mg/kg

X

WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-6	Logged by:	Regina Mitchell
Sample Location:	Fan Out Area	Project/Job#:	072-013-001
Date:	3/18/09	Samplers:	Regina Mitchell
Time:	1705	Associated Test F	Not Applicable
Weather:	Sunny	If Duplicate List Original Source:	N/A
Site Description:	Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area		
Photographs:	116-01629	Coordinates(x,y,z):	N/A

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger

[_] Other (Describe): scoop was distilled water jug cut in half

Sample Type: Soil

USCS Group: See Previous test pit/bore hole logs

Color: Brown

Texture: See Previous test pit/bore hole logs

Moisture Content: Dry / Moist / Wet

Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs

Grain Size and Shape: See Previous test pit/bore hole logs

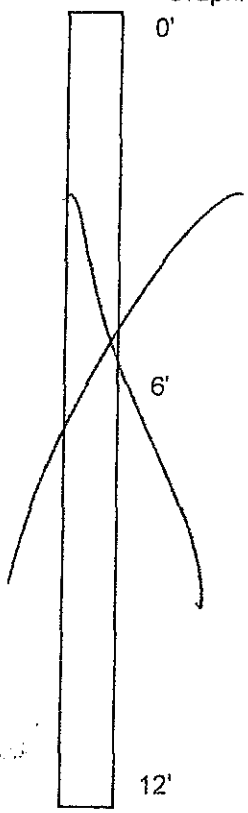
Analysis Required: 8015B

Number of Sample Bottles: • one 4-oz jar

Notes: • collected one 4oz jar for field screening
• Sample collected from base @ 3 ft bgs

Discreet Soil Interval Description

Graphic Log



Depth = 3 feet; Base

~~Depth (in / ft)~~	~~PID/FID Reading (ppm)~~ Spectrometer	~~Description~~ Lab result
N/A	ND (0.36) ppm	ND (10 ppm) (mg/kg)

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

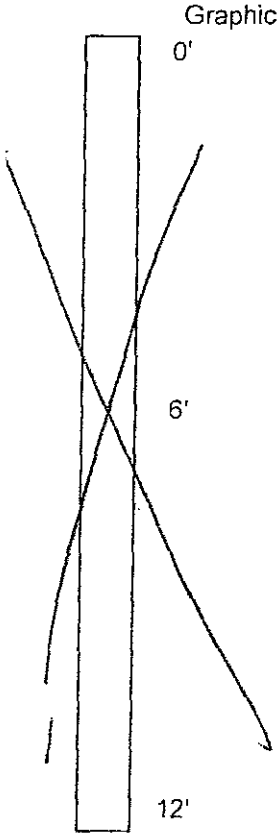
Sample Identification: CS-7 Logged by: Regina Mitchell
Sample Location: Fan Out Area Project/Job#: 072-013-001
Date: 4/22/09 Samplers: Regina Mitchell
Time: 1715 Associated Test F Not Applicable
Weather: partly cloudy If Duplicate List Original Source: N/A
Site Description: Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area
Photographs: 1606D Coordinates(x,y,z): N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: Brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles:
Notes: Collected one 4oz jar for Sample
collected one 4oz jar for FS/CS-7
collected MS/MSD CS7 here
Sample collected from depth of 3 ft bgs (Base)

Discreet Soil Interval Description

Graphic Log Depth = 3 ft, Base



Depth (in / ft)	PID/FID Reading (ppm) SPECTROMETER	Description LAB RESULT
	3.343	400 mg/kg

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: CS-8
Logged by: Regina Mitchell
Sample Location: Fan Out Area
Project/Job#: 072-013-001
Date: 4/21/09
Samplers: Regina Mitchell
Time: 1305
Associated Test F Not Applicable
Weather:
If Duplicate List Original Source: BD 042109
Site Description: Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area
Photographs: 1649
Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: Brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles:
Notes: Took 4 oz jar for sample and FS/CS-8 in separate 4 oz jar
Took
BD042109 here in separate 4 oz jar
3' Base sample

Discreet Soil Interval Description

Graphic Log Depth=3 feet; Base

0'
6'
12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
	SPECTROMETER	LAB RESULT
	113.16 (Hi)	6,100 mg/kg

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

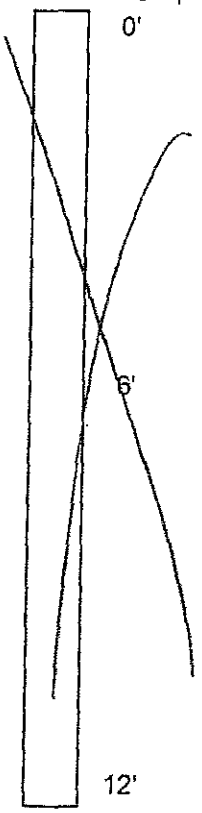
Sample Identification:	CS-9	Logged by:	Regina Mitchell
Sample Location:	Fan Out Area	Project/Job#:	072-013-001
Date:	3/18/09	Samplers:	Regina Mitchell
Time:	1707	Associated Test F	Not Applicable
Weather:	Sunny	If Duplicate List Original Source:	N/A
Site Description:	Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area		
Photographs:	1116 - 1630	Coordinates(x,y,z):	N/A

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe): Scoop was distilled water jug cut in half
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: Brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: One 4oz jar - no preservative
Notes: One 4oz jar used to collect field screening sample
Sample collected from base @ 3 ft bgs

Discreet Soil Interval Description

Graphic Log



Depth = 3 feet; Base

Depth (in / ft)	Spectrometer RID/FID Reading (ppm)	Lab result Description
N/A	ND(0.40) ppm	ND(10 ppm) mg/kg

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

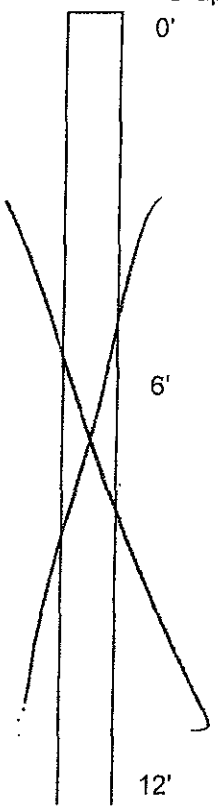
Sample Identification: CS-10 Logged by: **Regina Mitchell**
Sample Location: **Fan Out Area** Project/Job#: **072-013-001**
Date: 4/22/09 Samplers: **Regina Mitchell**
Time: ~~0800~~ 1630 Associated Test F **Not Applicable**
Weather: Sunny If Duplicate List Original Source: N/A
Site Description: **Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**
Photographs: 11658 Coordinates(x,y,z): N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: Brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / (Moist) / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: collected one 4oz jar for sample
Notes: collected one 4oz jar for FS/CS-10
Sample collected from depth of 3 ft bgs (bore)

Discreet Soil Interval Description

Graphic Log Depth = 3 feet; Bak



~~Depth (in / ft)~~	~~PID/FID Reading (ppm)~~ SPECTROMETER	Description LAB RESULT
	1,957	24 mg/kg

SOIL / WASTE SAMPLE LOG

WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-11	Logged by:	Regina Mitchell
Sample Location:	Fan Out Area	Project/Job#:	072-013-001
Date:	4/22/09	Samplers:	Regina Mitchell
Time:	1520	Associated Test F	Not Applicable
Weather:	Sunny	If Duplicate List Original Source:	N/A
Site Description:	Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area		
Photographs:	16576	Coordinates(x,y,z):	N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger

[_] Other (Describe):

Sample Type: Soil

USCS Group: See Previous test pit/bore hole logs

Color: Brown

Texture: See Previous test pit/bore hole logs

Moisture Content: Dry / Moist / Wet

Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs

Grain Size and Shape: See Previous test pit/bore hole logs

Analysis Required: 8015B

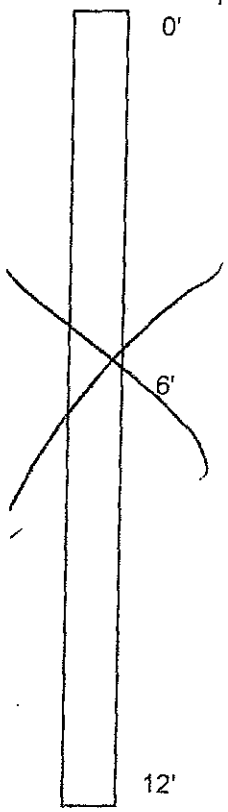
Number of Sample Bottles: collected one 4 oz jar for sample

Notes: collected one 4 oz jar for FS/CS-11
Sample collected from depth of 3 ft bgs (base)

Discreet Soil Interval Description

Graphic Log

Depth = 3 feet, Base



Depth (in / ft)	SPECTROMETER PID/FID Reading (ppm)	LAB RESULT Description
	29.615	380 mg/kg

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

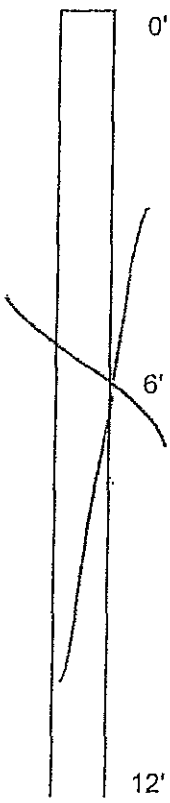
Sample Identification:	CS-12	Logged by:	Regina Mitchell
Sample Location:	Fan Out Area	Project/Job#:	072-013-001
Date:	4/22/09	Samplers:	Regina Mitchell
Time:	1733	Associated Test F	Not Applicable
Weather:	partly cloudy	If Duplicate List Original Source:	N/A
Site Description:	Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area		
Photographs:	1 to 2	Coordinates(x,y,z):	N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: Brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / (Moist) / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: Collected one 4oz jar for Sample
Notes: collected one 4oz jar for Field Screening
Sample collected from depth of 3 ft bgs
(base)

Discreet Soil Interval Description

Graphic Log



Depth = 3 feet, Base

~~Depth (in / ft)~~	~~PID/FID Reading (ppm)~~ Spectrometer	~~Description~~ Lab Result
N/A		
	6.416	490 mg/kg

WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-13	Logged by:	Regina Mitchell
Sample Location:	Fan Out Area	Project/Job#:	072-013-001
Date:	4/23/09	Samplers:	Regina Mitchell
Time:	1515	Associated Test F	Not Applicable
Weather:	Sunny	If Duplicate List Original Source:	N/A
Site Description:	Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area		
Photographs:	1664	Coordinates(x,y,z):	N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger

[_] Other (Describe):

Sample Type: Soil

USCS Group: See Previous test pit/bore hole logs

Color: Brown

Texture: See Previous test pit/bore hole logs

Moisture Content: Dry / Moist / Wet

Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs

Grain Size and Shape: See Previous test pit/bore hole logs

Analysis Required: 8015B

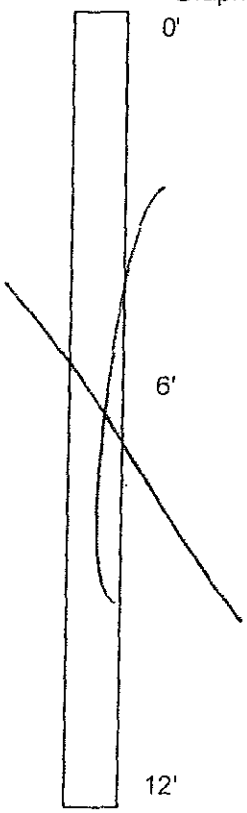
Number of Sample Bottles: collected one 4 oz jar for sample

Notes: collected one 4 oz jar for field screening

Sample collected @ depth of 3 ft bgs (base)

Discreet Soil Interval Description

Graphic Log



Depth = 3 feet ; Base

~~Depth (in / ft)~~	Spectrometer ~~PID/FID Reading (ppm)~~	LAB RESULT ~~Description~~
	8.172	ND(10) mg/kg

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

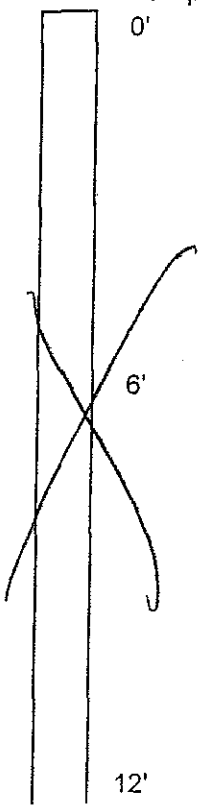
Sample Identification: CS-14 Logged by: Regina Mitchell
Sample Location: Fan Out Area Project/Job#: 072-013-001
Date: 4/21/09 Samplers: Regina Mitchell
Time: 1328 Associated Test F Not Applicable
Weather: Sunny If Duplicate List Original Source: N/A
Site Description: Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area
Photographs: 1151 Coordinates(x,y,z): N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles:
Notes: 4oz jar
FS/CS-14 in separate 4oz jar
collected at 7' base sample

Discreet Soil Interval Description

Graphic Log Depth = 7 feet, Base



Depth (in / ft)	SPECTOMETER PID/FID Reading (ppm)	LAB RESULT Description
	20.103	130 mg/kg

WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: CS-15 Logged by: Regina Mitchell
Sample Location: Fan Out Area Project/Job#: 072-013-001
Date: 4/21/09 Samplers: Regina Mitchell
Time: 1312 Associated Test F Not Applicable
Weather: Sunny If Duplicate List Original Source: N/A
Site Description: Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area
Photographs: 1165D Coordinates(x,y,z): N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: Brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles:
Notes: TOC 4oz jar for sample + FS/CS-15 in separate 4oz jar
+ 500ml MS/MSD here in separate 4oz jar

Collected from 3.5' bgs sidewall

Discreet Soil Interval Description

Graphic Log Depth= 3.5 feet; sidewall

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm) Squadrometer	Description LAB RESULT
	162.63 (Hi)	5,000 mg/kg

N/A

SOIL / WASTE SAMPLE LOG

WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-16	Logged by:	Regina Mitchell
Sample Location:	Fan Out Area	Project/Job#:	072-013-001
Date:	4/22/09	Samplers:	Regina Mitchell
Time:	1325	Associated Test F	Not Applicable
Weather:	Sunny/windy	If Duplicate List Original Source:	N/A
Site Description:	Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area		
Photographs:	1654	Coordinates(x,y,z):	N/A

Composite Sample Description

Sampling Method: [ ] Direct Push [ ] Scoop [X] Auger

[ ] Other (Describe): collected from backhoe scoop using distilled water rinse (RM) Took several locations from backhoe scoop.

Sample Type: Soil

USCS Group: See Previous test pit/bore hole logs

Color: Brown

Texture: See Previous test pit/bore hole logs

Moisture Content: Dry / Moist / Wet

Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs

Grain Size and Shape: See Previous test pit/bore hole logs

Analysis Required: 8015B

Number of Sample Bottles: 4oz jar for sample

Notes: 4oz jar for FS sample (FS/CS-16)

Sample collected from depth of 13 ft bgs (base)

Discreet Soil Interval Description

Graphic Log depth = 13 feet; base

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm) (SPECTROMETER)	Description (LAB RESULT)
	4,558	ND(10) mg/kg

N/A

WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: CS-17 Logged by: Regina Mitchell
Sample Location: Fan Out Area Project/Job#: 072-013-001
Date: 4/21/09 Samplers: Regina Mitchell
Time: 1610 Associated Test F Not Applicable
Weather: sunny If Duplicate List Original Source: N/A
Site Description: Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area
Photographs: 1652 Coordinates(x,y,z): N/A

Composite Sample Description

Sampling Method: [ ] Direct Push [ ] Scoop [X] Auger
[ ] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: Brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / (Moist) / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles:
Notes: Collected in 4oz jar ; collected FS/CS-17 in separate 4oz Jar collected @ 9' sidewall

Discreet Soil Interval Description

Graphic Log Depth = 9 feet ; Sidewall

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm) SPECTROMETER	Description LAB RESULT
	20.972	73 mg/kg

N/A

WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-18	Logged by:	Regina Mitchell
Sample Location:	Fan Out Area	Project/Job#:	072-013-001
Date:	4/23/09	Samplers:	Regina Mitchell
Time:	1615	Associated Test F	Not Applicable
Weather:	Sunny but windy	If Duplicate List Original Source:	N/A
Site Description:	Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area		
Photographs:	1605	Coordinates(x,y,z):	N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger

[_] Other (Describe):

Sample Type: Soil

USCS Group: See Previous test pit/bore hole logs

Color: Brown

Texture: See Previous test pit/bore hole logs

Moisture Content: Dry / Moist / Wet

Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs

Grain Size and Shape: See Previous test pit/bore hole logs

Analysis Required: 8015B

Number of Sample Bottles: collected one 4 oz jar for sample

Notes: collected one 4 oz jar for field screening. Sample collected @ ~~depth~~ of 3 ft bgs (Sidewall)

Discreet Soil Interval Description

Graphic Log Depth = 3 feet sidewall

0'

6'

12'

~~Depth (in ft)~~	SPECTROMETER PID/FID Reading (ppm)	LAB RESULTS ~~Description~~
	13.943	330 mg/kg

SOIL / WASTE SAMPLE LOG

WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-19	Logged by:	Regina Mitchell
Sample Location:	Fan Out Area	Project/Job#:	072-013-001
Date:	4/23/09	Samplers:	Regina Mitchell
Time:	1625	Associated Test F	Not Applicable
Weather:	sunny but windy	If Duplicate List Original Source:	BD was collected here,
Site Description:	Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area		
Photographs:	16616	Coordinates(x,y,z):	N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger

[_] Other (Describe):

Sample Type: Soil

USCS Group: See Previous test pit/bore hole logs

Color: Brown

Texture: See Previous test pit/bore hole logs

Moisture Content: Dry / Moist / Wet

Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs

Grain Size and Shape: See Previous test pit/bore hole logs

Analysis Required: 8015B

Number of Sample Bottles:

Notes: Collected one 4oz jar for sample
Collected BD here in 4oz jar
Collected one 4oz jar for field screening
slight odor,
Sample collected @ 3 ft bgs side

Discreet Soil Interval Description

Graphic Log

Depth=3 feet; Sidewall

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm) (SPECTROMETER)	Description (LAB RESULT)
	130.2 (Hi)	1600 mg/kg

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: CS20
Logged by: John Pietz
Sample Location: Fan Out Area
Project/Job#: 072-013-001
Date: 5-19-09
Samplers: John Pietz
Time: 10:50
Associated Test F: Not Applicable
Weather: clr 78F
If Duplicate List Original Source:
Site Description: Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area
Photographs:
Coordinates(x,y,z): Seem up 2.5' BGS

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Sample from back hoe bucket
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color:
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B Diesel
Number of Sample Bottles: 2 – CS-20, MS/MSD-CS20
Notes:

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in./ ft)	PID/FID Reading (ppm)	Description

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: CS-21 Logged by: Josh Pietz
Sample Location: Fan Out Area Project/Job#: 072-013-001
Date: 5-14-09 Samplers: John Pietz
Time: 1056 Associated Test F Not Applicable
Weather: clr 78F If Duplicate List Original Source:
Site Description: Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area
Photographs. Coordinates(x,y,z): ~~see map~~ 3,5 B65

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe). sample from backhoe bucket
Sample Type. Soil
USCS Group See Previous test pit/bore hole logs
Color
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characteristics (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape. See Previous test pit/bore hole logs
Analysis Required. 8015B Diesel
Number of Sample Bottles: 2
Notes: CS-21 BD051409

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

SOIL / WASTE SAMPLE LOG

WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-22	Logged by:	Regina Mitchell
Sample Location:	Fan Out Area	Project/Job#:	072-013-001
Date:	6/3/09	Samplers:	Regina Mitchell
Time:	1440	Associated Test F	Not Applicable
Weather:	Sunny	If Duplicate List Original Source:	
Site Description:	Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area		
Photographs:	1711	Coordinates(x,y,z):	N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger

[X] Other (Describe): Backhoe Scoop

Sample Type: Soil

USCS Group: See Previous test pit/bore hole logs

Color: Brown

Texture: See Previous test pit/bore hole logs

Moisture Content: (Dry) / Moist / Wet

Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): ~~See Previous test pit/bore hole logs~~ N/A

Grain Size and Shape: See Previous test pit/bore hole logs

Analysis Required: 8015B

Number of Sample Bottles: Collected sample in one 4-oz jar

Notes: Collected CS-22 MS/MSD in one 4 oz jar

Sample collected from Depth of 7 feet bgs @ same location as CS-19 (Base)

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

N/A

Depth (in / ft)	PID/FID Reading (ppm)	Description

N/A

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-23	Logged by:	Regina Mitchell
Sample Location:	Fan Out Area	Project/Job#:	072-013-001
Date:	6/3/09	Samplers:	Regina Mitchell
Time:	1500	Associated Test F	Not Applicable
Weather:	Sunny	If Duplicate List Original Source:	
Site Description:	Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area		
Photographs:	1712	Coordinates(x,y,z):	N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[✓] Other (Describe): Bucket scoop
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: Brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): ~~See Previous test pit/bore hole logs~~ RM
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 1
Notes: Collected one 4-oz jar for CS-23
Collected one 4-oz jar for BD-
collected @ 3 ft bgs @ sidewall

Discreet Soil Interval Description

Graphic Log

0'

N/A

12'

Depth (in / ft)	PID/FID Reading (ppm)	RM Description
	N	A

WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-24	Logged by:	Regina Mitchell
Sample Location:	Fan Out Area	Project/Job#:	072-013-001
Date:	6/3/09	Samplers:	Regina Mitchell
Time:	1515	Associated Test F	Not Applicable
Weather:	Sunny	If Duplicate List Original Source:	
Site Description:	Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area		
Photographs:	17/3	Coordinates(x,y,z):	N/A

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [_] Auger
[X] Other (Describe): Backhoe scoop
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: Brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): ~~See Previous test pit/bore hole logs~~ RM

Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 1
Notes: collected one 4oz jar for CS-24 sample
collected @ 3ft bgs @ sidewall

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

N/A RM

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: CS-25 Logged by: J. Pietz
Sample Location: Fan Out Area Project/Job#: 072-013-001
Date: 7/23/04 Samplers: J. Pietz
Time: 1501 Associated Test F Not Applicable
Weather: clr 85 If Duplicate List Original Source:
Site Description: Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area
Photographs: yes Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color:
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles:
Notes: Sample 10 feet BGS
CS-25

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: CS-26 Logged by: JPietz
Sample Location: Fan Out Area Project/Job#: 072-013-001
Date: 7/23/09 Samplers: J Pietz
Time: 1536 Clr 45 Associated Test F Not Applicable
Weather: clr ~85 If Duplicate List Original Source:
Site Description: Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area
Photographs: Yes Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color:
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 2 - CS-26 BD-072309
Notes: 10' BGS

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
10'		

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: C527 Logged by: Johnfletcher
Sample Location: **Fan Out Area** Project/Job#: **072-013-001**
Date: 7/23/09 Samplers: Johnfletcher
Time: 1555 Associated Test F **Not Applicable**
Weather: Clr 85 If Duplicate List Original Source:
Site Description: **Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**
Photographs: YES Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color:
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles:
Notes: C527 10 feet BGS

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: CS-28 Logged by: J. Pietz
Sample Location: Fan Out Area Project/Job#: 072-013-001
Date: 7/23/04 Samplers: J. Pietz
Time: 1405 Associated Test F Not Applicable
Weather: Clear If Duplicate List Original Source:
Site Description: Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area
Photographs: Yes Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [_] Scoop [X] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color:
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles:
Notes: 5 foot sample, side wall (BGS)
CS-28
MS/MSD-CS-28

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: **CS-29** Logged by: **Loretta, Beck, Alvin (Gallup)**
Sample Location: **Fan Out Area** Project/Job#: **072-013-001 / 697-017-002**
Date: **10/1/2009** Samplers: **Loretta, Beck, Alvin (Gallup)**
Time: **15:10** Associated Test Pit: **Not Applicable**
Weather: **Not Recorded** If Duplicate List Original Source: **Not Applicable**
Site Description: **Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**
Photographs: **No** Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: See Previous test pit/bore hole logs
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles:
Notes: Sample collected from 5 ft bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
5 ft	Not taken	See previous test pit/borehole logs

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: **CS-30** Logged by: **Loretta, Beck, Alvin (Gallup)**
Sample Location: **Fan Out Area** Project/Job#: **072-013-001 / 697-017-002**
Date: **10/1/2009** Samplers: **Loretta, Beck, Alvin (Gallup)**
Time: **15:15** Associated Test Pit: **Not Applicable**
Weather: **Not Recorded** If Duplicate List Original Source: **Not Applicable**
Site Description: **Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**
Photographs: **No** Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: See Previous test pit/bore hole logs
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles:
Notes: Sample collected from 5 ft bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
5 ft	Not taken	See previous test pit/borehole logs

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: **CS-31** Logged by: **Loretta, Beck, Alvin (Gallup)**
Sample Location: **Fan Out Area** Project/Job#: **072-013-001 / 697-017-002**
Date: **10/1/2009** Samplers: **Loretta, Beck, Alvin (Gallup)**
Time: **15:20** Associated Test Pit: **Not Applicable**
Weather: **Not Recorded** If Duplicate List Original Source: **Not Applicable**
Site Description: **Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**
Photographs: **No** Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: See Previous test pit/bore hole logs
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles:
Notes: Sample collected from 5 ft bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
5 ft	Not taken	See previous test pit/borehole logs

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: **A-1** Logged by: **Loretta, Beck, Alvin (Gallup)**
Sample Location: **Fan Out Area** Project/Job#: **072-013-001 / 697-017-002**
Date: **10/2/2009** Samplers: **Loretta, Beck, Alvin (Gallup)**
Time: **14:45** Associated Test Pit: **Not Applicable**
Weather: **Not Recorded** If Duplicate List Original Source: **Not Applicable**
Site Description: **Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**
Photographs: **No** Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: See Previous test pit/bore hole logs
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles:
Notes: Sample collected from 13 ft bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
13 ft	Not taken	See previous test pit/borehole logs

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: **A-2** Logged by: **Loretta, Beck, Alvin (Gallup)**
Sample Location: **Fan Out Area** Project/Job#: **072-013-001 / 697-017-002**
Date: **10/2/2009** Samplers: **Loretta, Beck, Alvin (Gallup)**
Time: **14:50** Associated Test Pit: **Not Applicable**
Weather: **Not Recorded** If Duplicate List Original Source: **Not Applicable**
Site Description: **Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**
Photographs: **No** Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: See Previous test pit/bore hole logs
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles:
Notes: Sample collected from 13 ft bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
13 ft	Not taken	See previous test pit/borehole logs

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: **A-3** Logged by: **Loretta, Beck, Alvin (Gallup)**
Sample Location: **Fan Out Area** Project/Job#: **072-013-001 / 697-017-002**
Date: **10/2/2009** Samplers: **Loretta, Beck, Alvin (Gallup)**
Time: **14:55** Associated Test Pit: **Not Applicable**
Weather: **Not Recorded** If Duplicate List Original Source: **Not Applicable**
Site Description: **Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**
Photographs: **No** Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: See Previous test pit/bore hole logs
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles:
Notes: Sample collected from 13 ft bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description
13 ft	Not taken	See previous test pit/borehole logs

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-32	Logged by:	**G. Price**
Sample Location:	**Fan Out Area**	Project/Job#:	**072-013-001 / 697-017-002**
Date:	8/23/2010	Samplers:	Grant Price and Alvin Dorsey
Time:	11:50	Associated Test Pit	**Not Applicable**
Weather:	~80 degrees f., calm	If Duplicate List Original Source:	None
Site Description:	**Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**		
Photographs:	015	Coordinates(x,y,z):	

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: Light brown
Texture: See Previous test pit/bore hole logs
Moisture Content: **Dry** / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
loose, non-plastic
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 1 - 8 oz.
Notes: No odor, sidewall sample collected from 2.5' bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-33	Logged by:	**G. Price**
Sample Location:	**Fan Out Area**	Project/Job#:	**072-013-001 / 697-017-002**
Date:	8/23/2010	Samplers:	Grant Price and Alvin Dorsey
Time:	11:40	Associated Test Pit	**Not Applicable**
Weather:	~80 degrees f., calm	If Duplicate List Original Source:	BD2
Site Description:	**Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**		
Photographs:	014	Coordinates(x,y,z):	

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / **Moist** / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
soft, high plasticity
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 2 - 8 oz.
Notes: Moderate unidentifiable odor, sample collect from 5' bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-34	Logged by:	**G. Price**
Sample Location:	**Fan Out Area**	Project/Job#:	**072-013-001 / 697-017-002**
Date:	8/23/2010	Samplers:	Grant Price and Alvin Dorsey
Time:	12:00	Associated Test Pit	**Not Applicable**
Weather:	~80 degrees f., calm	If Duplicate List Original Source:	NA
Site Description:	**Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**		
Photographs:	016	Coordinates(x,y,z):	

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / **Moist** / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
soft, moderate plasticity, some fine grain sand.
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 1 - 8 oz.
Notes: No odor, sample collected from 5' bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-35	Logged by:	**G. Price**
Sample Location:	**Fan Out Area**	Project/Job#:	**072-013-001 / 697-017-002**
Date:	8/25/2010	Samplers:	Grant Price and Alvin Dorsey
Time:	10:30	Associated Test Pit	**Not Applicable**
Weather:	SE wind, ~75 degrees f.	If Duplicate List Original Source:	None
Site Description:	**Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**		
Photographs:	031	Coordinates(x,y,z):	

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / Moist / **Wet**
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Medium stiff, moderate plasticity, no odor.
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 1 - 8 oz.
Notes: Sample collected from 13' bgs with trackhoe.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-36	Logged by:	**G. Price**
Sample Location:	**Fan Out Area**	Project/Job#:	**072-013-001 / 697-017-002**
Date:	8/23/2010	Samplers:	Grant Price and Alvin Dorsey
Time:	10:00	Associated Test Pit	**Not Applicable**
Weather:	~80 degrees f.	If Duplicate List Original Source:	None
Site Description:	**Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**		
Photographs:	006	Coordinates(x,y,z):	

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry / **Moist / Wet**
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
soft, high plasticity
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 1 - 8 oz.
Notes: slight stale water odor, sample collected from 7' bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-37	Logged by:	**G. Price**
Sample Location:	**Fan Out Area**	Project/Job#:	**072-013-001 / 697-017-002**
Date:	8/23/2010	Samplers:	Grant Price and Alvin Dorsey
Time:	12:10	Associated Test Pit	**Not Applicable**
Weather:	~80 degrees f., calm	If Duplicate List Original Source:	None
Site Description:	**Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**		
Photographs:	017	Coordinates(x,y,z):	

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: light brown
Texture: See Previous test pit/bore hole logs
Moisture Content: **Dry** / Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
hard chunks, non-plastic.
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 1 - 8 oz.
Notes: No odor. Sidewall sample collected from 2.5' bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: CS-38 Logged by: **G. Price**
Sample Location: **Fan Out Area** Project/Job#: **072-013-001 / 697-017-002**
Date: 8/23/2010 Samplers: Grant Price and Alvin Dorsey
Time: 10:25 Associated Test Pit **Not Applicable**
Weather: ~80 degrees f., calm If Duplicate List Original Source: BD1
Site Description: **Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**
Photographs: 008 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: brown
Texture: See Previous test pit/bore hole logs
Moisture Content: Dry **/ Moist** / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
medium soft, high plasticity
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 2 - 8 oz.
Notes: No odor. Sample collected from 7' bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)		PID/FID Reading (ppm)	Description

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: CS-39 Logged by: **G. Price**
Sample Location: **Fan Out Area** Project/Job#: **072-013-001 / 697-017-002**
Date: 8/23/2010 Samplers: Grant Price and Alvin Dorsey
Time: 10:40 Associated Test Pit **Not Applicable**
Weather: ~80 degrees f., calm If Duplicate List Original Source: MS/MSD
Site Description: **Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**
Photographs: 009 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: brown
Texture: See Previous test pit/bore hole logs
Moisture Content: **Dry / Moist** / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Medium stiff, moderate plasticity
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 2 - 8 oz.
Notes: No odor. Sample collected from 5' bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification: CS-40 Logged by: **G. Price**
Sample Location: **Fan Out Area** Project/Job#: **072-013-001 / 697-017-002**
Date: 8/23/2010 Samplers: Grant Price and Alvin Dorsey
Time: 10:50 Associated Test Pit **Not Applicable**
Weather: ~80 degrees f., calm If Duplicate List Original Source: None
Site Description: **Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**
Photographs: 010 Coordinates(x,y,z):

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: brown
Texture: See Previous test pit/bore hole logs
Moisture Content: **Dry / Moist** / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Medium stiff, moderate plasticity
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 1 - 8 oz.
Notes: No odor. Sample collected from 5' bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-41	Logged by:	**G. Price**
Sample Location:	**Fan Out Area**	Project/Job#:	**072-013-001 / 697-017-002**
Date:	8/23/2010	Samplers:	Grant Price and Alvin Dorsey
Time:	11:10	Associated Test Pit	**Not Applicable**
Weather:	~80 degrees f., calm	If Duplicate List Original Source:	None
Site Description:	**Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**		
Photographs:	012	Coordinates(x,y,z):	

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: light brown
Texture: See Previous test pit/bore hole logs
Moisture Content: **Dry /** Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Hard, stiff, non-plastic
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 1 - 8 oz.
Notes: No odor. Some fine sand. Sample collected from 2.5' bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

SOIL / WASTE SAMPLE LOG
WESTERN REFINING, GALLUP REFINERY, GALLUP, NEW MEXICO

Sample Identification:	CS-42	Logged by:	**G. Price**
Sample Location:	**Fan Out Area**	Project/Job#:	**072-013-001 / 697-017-002**
Date:	8/23/2010	Samplers:	Grant Price and Alvin Dorsey
Time:	11:00	Associated Test Pit	**Not Applicable**
Weather:	~80 degrees f., calm	If Duplicate List Original Source:	None
Site Description:	**Western Refining, Gallup Refinery Railroad Rack Lagoon Fanout Area**		
Photographs:	011	Coordinates(x,y,z):	

Composite Sample Description

Sampling Method: [_] Direct Push [X] Scoop [_] Auger
[_] Other (Describe):
Sample Type: Soil
USCS Group: See Previous test pit/bore hole logs
Color: light brown
Texture: See Previous test pit/bore hole logs
Moisture Content: **Dry /** Moist / Wet
Density Characterisitcs (Stiffness / Plasticity, Cementation and Hardness): See Previous test pit/bore hole logs
Medium stiff to stiff, non-plastic.
Grain Size and Shape: See Previous test pit/bore hole logs
Analysis Required: 8015B
Number of Sample Bottles: 1 - 8 oz.
Notes: No odor. Sidewall sample collected from 2.5' bgs.

Discreet Soil Interval Description

Graphic Log

0'

6'

12'

Depth (in / ft)	PID/FID Reading (ppm)	Description

APPENDIX C

BOREHOLE LOGS

TRIHYDRO CORPORATION

FIELD BORING LOG

Project & Project Number:	072-013-001	Date:	12/17/2007
Project Location/Address:	Gallup Refinery	Drilling Company:	Rodgers and Co.
Client:	Western	Driller:	John and Nick
Weather:	Calm, ~ 35 degrees F.	Rig Type / Method:	CME-75 HSA 6 3/4" (OD)
Logged by:	Grant Price	Sample Method (circle one):	Direct Push **Split Spoon** Shelby Tube Other:
		Surface Elevation:	Casing Elevation: GE Elevation:
Logger's Signature:		Equipment List:	

BORING ID: B8_12_17_B **Boring Location: Fan-Out Area**

Interval (ft bgs)	Texture - Grain Size Major	Texture - Grain Size Minor	Color Major	Color Modifier	Plasticity	Consistency	Moisture	Odor	PID Interval/Reading	Additional Comments (Odor descriptor, sheen, nodules, structure, vegitation, etc.)
0 - 7										See previous sample log.
7 - 9	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 9-16-28-42.
	Sand - F M C	**Some Sand**	Gray - L M D		Moderate	Soft	**Moist**	Moderate		
	Silt	Silty	**Brn - L M D**		**Low**	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		Non	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
7 - 12	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Logged from cuttings. Sand decreases with depth.
	Sand - F M C	**Trace Sand**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	Silty	**Brn - L M D**		**Low**	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		Non	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
12 - 14	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 13-14-20-21.
	Sand - F M C	**Sandy**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	Silty	**Brn - L M D**		Low	Firm	Saturated	Slight		
	Clay	**Trace Clay**	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
14 - 17	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Logged from cuttings.
	Sand - F M C	**Sandy**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	Silty	**Brn - L M D**		Low	Firm	Saturated	Slight		
	Clay	**Trace Clay**	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
17 - 19	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 9-16-20-21. 75 percent recovery. Sand and silt content decrease with depth.
	Sand - F M C	**Trace Sand**	Gray - L M D		**Moderate**	Soft	**Moist**	Moderate		
	Silt	**Trace Silt**	**Brn - L M D**		**Low**	**Firm**	Saturated	Slight		
	Clay	Clayey	Red - L M D		Non	Hard	--	**None Noted**		
			Other		--	Very Hard	--	--		
19 - 22	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Logged from cuttings.
	Sand - F M C	**Trace Sand**	Gray - L M D		**Moderate**	Soft	Moist	Moderate		
	Silt	**Trace Silt**	**Brn - L M D**		Low	**Firm**	Saturated	Slight		
	Clay	Clayey	Red - L M D		Non	Hard	--	**None Noted**		
			Other		--	Very Hard	--	--		
22 - 22.75	GVL - F M C	Grvlly	Black		High		Dry	Strong		Logged from split spoon, blow count = 4-6-9-13. Moist to wet, medium loose.
	Sand - F M C	Sandy	Gray - L M D		Moderate		**Moist**	Moderate		
	Silt	Silty	**Brn - L M D**		Low		Saturated	Slight		
	Clay	**Trace Clay**	Red - L M D		**Non**		--	**None Noted**		
			Other		--		--	--		
22.75 - 24	GVL - F M C	Grvlly	Black		High	Very Soft	Dry	Strong		Same split spoon as above interval. Total depth = 24 ft bgs.
	Sand - F M C	**Trace Sand**	Gray - L M D		**Moderate**	Soft	**Moist**	Moderate		
	Silt	Silty	**Brn - L M D**		Low	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		Non	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		

Sample Collected: Samples collected at 8, 13, 18, and 23 ft bgs

Sample ID: Location ID = "B" (formerly B8-NEW-SE-S1)

Date: 12/17/2007

Time: 11:30, 11:45, 11:55, and 12:05, respectively

Depth: 8, 13, 18, and 23 ft bgs

Number/Size of Containers: One 4-oz per sample

Analysis to be Performed: TPH-DRO by 8015B

Duplicate Collected: No.

Notes:

TRIHYDRO CORPORATION

FIELD BORING LOG

Project & Project Number:	072-013-001	Date:	12/17/2007
Project Location/Address:	Gallup Refinery	Drilling Company:	Rodgers and Co.
Client:	Western	Driller:	John and Nick
Weather:	Breezy, ~ 45 degrees F.	Rig Type / Method:	CME-75 HSA 6 3/4" (OD)
Logged by:	Grant Price	Sample Method (circle one):	Direct Push **Split Spoon** Shelby Tube Other:
		Surface Elevation:	Casing Elevation: GE Elevation:
Logger's Signature:		Equipment List:	

BORING ID: B8_12_17_K1 **Boring Location: Fan-Out Area**

Interval (ft bgs)	Texture - Grain Size Major	Texture - Grain Size Minor	Color Major	Color Modifier	Plasticity	Consistency	Moisture	Odor	PID Interval/Reading	Additional Comments (Odor descriptor, sheen, nodules, structure, vegitation, etc.)
0 - 2	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Logged from cuttings, wet at surface.
	Sand - F M C	Sandy	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	**Silty**	**Brn - L** M D		Low	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
2- 4	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 13-28-32-42
	Sand - F M C	Sandy	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	**Silty**	**Brn** - L **M** D		Low	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
4 - 7	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Logged from cuttings.
	Sand - F M C	**Sandy**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	**Silty**	**Brn** - L **M** D		Low	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
7 - 9	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 12-32-35-48.
	Sand - F M C	**Sandy**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	Silty	**Brn** - L **M** D		Low	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		**Non**	Hard	--	**None Noted**		
			Other		--	**Very Hard**	--	--		
9 - 12	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Logged from cuttings.
	Sand - F M C	**Some Sand**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	Silty	**Brn** - L **M** D		Low	Firm	Saturated	**Slight**		
	Clay	**Some Clay**	Red - L M D		**Non**	**Hard**	--	None Noted		
			Other		--	Very Hard	--	--		
12 - 14	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 12-19-22-31. TD = 14 ft bgs.
	Sand - F M C	Sandy	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	Silty	**Brn - L M** D		Low	**Firm**	Saturated	Slight		
	Clay	**Some Clay**	Red - L M D		**Non**	Hard	--	**None Noted**		
			Other		--	Very Hard	--	--		

Sample Collected: Samples collected at 3, 8, and 13 ft bgs

Sample ID: Location ID = "K1"

Date: 12/17/2007

Time: 15:50, 16:00, and 16:15, respectively

Depth: 3, 8, and 13 ft bgs

Number/Size of Containers: One 4-oz per sample

Analysis to be Performed: TPH-DRO by 8015B

Duplicate Collected: No.

Notes:

TRIHYDRO CORPORATION

FIELD BORING LOG

Project & Project Number:	072-013-001	Date:	12/17/2007
Project Location/Address:	Gallup Refinery	Drilling Company:	Rodgers and Co.
Client:	Western	Driller:	John and Nick
Weather:	Windy, ~ 45 degrees F.	Rig Type / Method:	CME-75 HSA 6 3/4" (OD)
Logged by:	Grant Price	Sample Method (circle one):	Direct Push **Split Spoon** Shelby Tube Other:
		Surface Elevation:	Casing Elevation: GE Elevation:
Logger's Signature:		Equipment List:	

BORING ID: B8_12_17_I1 **Boring Location: Fan-Out Area**

Interval (ft bgs)	Texture - Grain Size Major	Texture - Grain Size Minor	Color Major	Color Modifier	Plasticity	Consistency	Moisture	Odor	PID Interval/Reading	Additional Comments (Odor descriptor, sheen, nodules, structure, vegitation, etc.)
0 - 2	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Logged from cuttings, wet at surface.
	Sand - F M C	**Trace Sand**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	Silty	**Brn - L M D**		Low	**Firm**	Saturated	Slight		
	Clay	**Some Clay**	Red - L M D		**Non**	Hard	--	**None Noted**		
			Other		--	Very Hard	--	--		
2- 4	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 15-18-19-21
	Sand - F M C	**Sandy**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	Silty	**Brn - L M D**		Low	Firm	Saturated	Slight		
	Clay	**Some Clay**	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
4 - 7	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Logged from cuttings.
	Sand - F M C	Sandy	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	**Silty**	**Brn - L M D**		Low	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
7 - 9	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 15-32-31-33
	Sand - F M C	**Sandy**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	**Silty**	**Brn - L M D**		Low	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
9 - 12	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Logged from cuttings.
	Sand - F M C	**Sandy**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	**Silty**	**Brn - L M D**		Low	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
12 - 14	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 12-13-17-20. TD = 14 ft bgs.
	Sand - F M C	**Sandy**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	Silty	**Brn - L M D**		Low	**Firm**	Saturated	Slight		
	Clay	**Trace Clay**	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		

Sample Collected: Samples collected at 3, 8, and 13 ft bgs

Sample ID: Location ID = "I1"

Date: 12/17/2007

Time: 13:55, 14:05, and 14:15, respectively

Depth: 3, 8, and 13 ft bgs

Number/Size of Containers: One 4-oz per sample

Analysis to be Performed: TPH-DRO by 8015B

Duplicate Collected: BD 12_17_07 collected at 3 ft bgs

Notes:

TRIHYDRO CORPORATION

FIELD BORING LOG

Project & Project Number:	072-013-001	Date:	12/17/2007
Project Location/Address:	Gallup Refinery	Drilling Company:	Rodgers and Co.
Client:	Western	Driller:	John and Nick
Weather:	Calm, ~ 45 degrees F.	Rig Type / Method:	CME-75 HSA 6 3/4" (OD)
Logged by:	Grant Price	Sample Method (circle one):	Direct Push **Split Spoon** Shelby Tube Other:
		Surface Elevation:	Casing Elevation: GE Elevation:
Logger's Signature:		Equipment List:	

BORING ID: B8_12_17_G1 **Boring Location: Fan-Out Area**

Interval (ft bgs)	Texture - Grain Size Major	Texture - Grain Size Minor	Color Major	Color Modifier	Plasticity	Consistency	Moisture	Odor	PID Interval/Reading	Additional Comments (Odor descriptor, sheen, nodules, structure, vegitation, etc.)
0 - 2	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Logged from cuttings, wet at surface.
	Sand - F M C	**Some Sand**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	Silty	**Brn - L** M D		Low	**Firm**	Saturated	Slight		
	Clay	**Clayey**	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
2- 4	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 17-38-49-50/5"
	Sand - F M C	Sandy	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	**Silty**	**Brn** - L **M** D		Low	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		**Non**	Hard	--	**None Noted**		
			Other		--	**Very Hard**	--	--		
4 - 7	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Logged from cuttings.
	Sand - F M C	Sandy	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	**Silty**	**Brn** - L **M** D		Low	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		**Non**	Hard	--	**None Noted**		
			Other		--	**Very Hard**	--	--		
7 - 9	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 20-49-50-50.
	Sand - F M C	**Some Sand**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	**Silty**	**Brn** - L **M** D		Low	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		**Non**	Hard	--	**None Noted**		
			Other		--	**Very Hard**	--	--		
9 - 12	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Logged from cuttings.
	Sand - F M C	Sandy	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	**Silty**	**Brn** - L **M** D		Low	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		**Non**	Hard	--	**None Noted**		
			Other		--	**Very Hard**	--	--		
12 - 14	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 13-20-39-50/5". TD = 14 ft bgs.
	Sand - F M C	Sandy	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	Silty	**Brn** - L **M** D		Low	Firm	Saturated	Slight		
	Clay	**Clayey**	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		

Sample Collected: Samples collected at 3, 8, and 13 ft bgs

Sample ID: Location ID = "G1"

Date: 12/17/2007

Time: 15:05, 15:20, and 15:35, respectively

Depth: 3, 8, and 13 ft bgs

Number/Size of Containers: One 4-oz per sample

Analysis to be Performed: TPH-DRO by 8015B

Duplicate Collected: MS/MSD collected at 3 ft bgs interval

Notes:

TRIHYDRO CORPORATION

FIELD BORING LOG

Project & Project Number:	072-013-001	Date:	12/17/2007
Project Location/Address:	Gallup Refinery	Drilling Company:	Rodgers and Co.
Client:	Western	Driller:	John and Nick
Weather:	Windy, ~ 40 degrees F.	Rig Type / Method:	CME-75 HSA 6 3/4" (OD)
Logged by:	Grant Price	Sample Method (circle one):	Direct Push **Split Spoon** Shelby Tube Other:
		Surface Elevation:	Casing Elevation: GE Elevation:
Logger's Signature:		Equipment List:	

BORING ID: B8_12_17_M1 **Boring Location: Fan-Out Area**

Interval (ft bgs)	Texture - Grain Size Major	Texture - Grain Size Minor	Color Major	Color Modifier	Plasticity	Consistency	Moisture	Odor	PID Interval/Reading	Additional Comments (Odor descriptor, sheen, nodules, structure, vegitation, etc.)
0 - 2	GVL - F M C	Grvlly	Black		High	Very Soft	Dry	Strong		Logged from cuttings, wet at surface.
	Sand - F M C	Sandy	Gray - L M D		Moderate	Soft	**Moist**	Moderate		
	Silt	Silty	**Brn - L M D**		**Low**	**Firm**	Saturated	Slight		
	Clay	**Clayey**	Red - L M D		Non	Hard	--	**None Noted**		
			Other		--	Very Hard	--	--		
2- 4	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 12-19-22-24
	Sand - F M C	Sandy	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	Silty	**Brn - L M D**		**Low**	Firm	Saturated	Slight		
	Clay	**Clayey**	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
4 - 7	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Logged from cuttings. Sand content increases with depth.
	Sand - F M C	**Some Sand**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	**Some Silt**	**Brn - L M D**		**Low**	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
7 - 9	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 17-31-34-40.
	Sand - F M C	**Sandy**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	Silty	**Brn - L M D**		Low	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	**Very Hard**	--	--		
9 - 12	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Logged from cuttings.
	Sand - F M C	**Some Sand**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	Silty	**Brn - L M D**		Low	Firm	Saturated	Slight		
	Clay	Clayey	Red - L M D		**Non**	**Hard**	--	**None Noted**		
			Other		--	Very Hard	--	--		
12 - 14	GVL - F M C	Grvlly	Black		High	Very Soft	**Dry**	Strong		Sampled from split spoon, blow count = 14-15-27-28. TD = 14 ft bgs.
	Sand - F M C	**Sandy**	Gray - L M D		Moderate	Soft	Moist	Moderate		
	Silt	**Silty**	**Brn - L M D**		**Low**	**Firm**	Saturated	Slight		
	Clay	Clayey	Red - L M D		Non	Hard	--	**None Noted**		
			Other		--	Very Hard	--	--		

Sample Collected: Samples collected at 3, 8, and 13 ft bgs

Sample ID: Location ID = "M1"

Date: 12/17/2007

Time: 12:50, 13:00, and 13:10, respectively

Depth: 3, 8, and 13 ft bgs

Number/Size of Containers: One 4-oz per sample

Analysis to be Performed: TPH-DRO by 8015B

Duplicate Collected: No.

Notes:

APPENDIX D

ANALYTICAL DATA AND DATA VALIDATIONS

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Tuesday, November 14, 2006

Regina Allen
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-3833
FAX (505) 722-0210

RE: Fan Out Area Sampling

Order No.: 0610228

Dear Regina Allen:

Hall Environmental Analysis Laboratory, Inc. received 26 sample(s) on 10/20/2006 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001

4901 Hawkins NE ■Suite D ■Albuquerque, NM 87109
505.345.3975 ■Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc. Date: *14-Nov-06*

CLIENT:	Giant Refining Co
Project:	Fan Out Area Sampling
Lab Order:	0610228

CASE NARRATIVE

Analytical Comments for METHOD 8015DRO_S, SAMPLE 0610228-05B: DNOP not recovered due to dilution. See Corrective Action: [391] Low recovery & RPD problems for Se in 10228-11 MS/MSD & 10228-24 MS/MSD.

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B7-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 3:45:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-01	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	360	10		mg/Kg	1	10/24/2006 3:03:47 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/24/2006 3:03:47 PM
Surr: DNOP	85.2	61.7-135		%REC	1	10/24/2006 3:03:47 PM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	10/31/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	13		mg/Kg	5	11/6/2006 4:18:57 PM
Barium	230	0.50		mg/Kg	5	11/6/2006 4:18:57 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 4:18:57 PM
Chromium	11	1.5		mg/Kg	5	11/6/2006 4:18:57 PM
Lead	8.6	1.2		mg/Kg	5	11/6/2006 4:18:57 PM
Selenium	ND	13		mg/Kg	5	11/7/2006 9:20:17 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 4:18:57 PM
EPA METHOD 8260B: VOLATILES						Analyst: **LMM**
Benzene	ND	0.050		mg/Kg	1	10/23/2006
Toluene	ND	0.050		mg/Kg	1	10/23/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/23/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/23/2006
Naphthalene	ND	0.10		mg/Kg	1	10/23/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
Acetone	ND	0.75		mg/Kg	1	10/23/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/23/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromoform	ND	0.050		mg/Kg	1	10/23/2006
Bromomethane	ND	0.10		mg/Kg	1	10/23/2006
2-Butanone	ND	0.50		mg/Kg	1	10/23/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/23/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/23/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Chloroethane	ND	0.10		mg/Kg	1	10/23/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B7-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 3:45:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-01	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/23/2006
Chloromethane	ND	0.050		mg/Kg	1	10/23/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/23/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/23/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/23/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/23/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/23/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/23/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/23/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/23/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Styrene	ND	0.050		mg/Kg	1	10/23/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/23/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/23/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B7-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 3:45:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-01	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/23/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/23/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/23/2006
Surr: 1,2-Dichloroethane-d4	79.0	62-127		%REC	1	10/23/2006
Surr: 4-Bromofluorobenzene	103	75.2-127		%REC	1	10/23/2006
Surr: Dibromofluoromethane	76.5	68.1-120		%REC	1	10/23/2006
Surr: Toluene-d8	94.6	74-119		%REC	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B7-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 9:50:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-02	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/24/2006 3:38:34 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/24/2006 3:38:34 PM
Surr: DNOP	81.6	61.7-135		%REC	1	10/24/2006 3:38:34 PM
EPA METHOD 7471: MERCURY						Analyst: MAP
Mercury	ND	0.033		mg/Kg	1	10/31/2006
EPA METHOD 6010B: SOIL METALS						Analyst: CMS
Arsenic	ND	12		mg/Kg	5	11/6/2006 4:22:03 PM
Barium	280	1.0		mg/Kg	10	11/6/2006 5:29:11 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 4:22:03 PM
Chromium	10	1.5		mg/Kg	5	11/6/2006 4:22:03 PM
Lead	6.3	1.2		mg/Kg	5	11/6/2006 4:22:03 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 9:22:57 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 4:22:03 PM
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Benzene	ND	0.050		mg/Kg	1	10/23/2006
Toluene	ND	0.050		mg/Kg	1	10/23/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/23/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/23/2006
Naphthalene	ND	0.10		mg/Kg	1	10/23/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
Acetone	ND	0.75		mg/Kg	1	10/23/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/23/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromoform	ND	0.050		mg/Kg	1	10/23/2006
Bromomethane	ND	0.10		mg/Kg	1	10/23/2006
2-Butanone	ND	0.50		mg/Kg	1	10/23/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/23/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/23/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Chloroethane	ND	0.10		mg/Kg	1	10/23/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B7-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 9:50:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-02	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/23/2006
Chloromethane	ND	0.050		mg/Kg	1	10/23/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/23/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/23/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/23/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/23/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/23/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/23/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/23/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/23/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Styrene	ND	0.050		mg/Kg	1	10/23/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/23/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/23/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B7-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 9:50:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-02	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/23/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/23/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/23/2006
Surr: 1,2-Dichloroethane-d4	84.0	62-127		%REC	1	10/23/2006
Surr: 4-Bromofluorobenzene	98.1	75.2-127		%REC	1	10/23/2006
Surr: Dibromofluoromethane	83.2	68.1-120		%REC	1	10/23/2006
Surr: Toluene-d8	91.1	74-119		%REC	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B8-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 2:15:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-03	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	2400	100		mg/Kg	10	10/24/2006 11:46:51 PM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	10/24/2006 11:46:51 PM
Surr: DNOP	129	61.7-135		%REC	10	10/24/2006 11:46:51 PM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	10/31/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	12		mg/Kg	5	11/6/2006 4:26:01 PM
Barium	270	1.0		mg/Kg	10	11/6/2006 5:39:33 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 4:26:01 PM
Chromium	9.6	1.5		mg/Kg	5	11/6/2006 4:26:01 PM
Lead	8.5	1.2		mg/Kg	5	11/6/2006 4:26:01 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 9:25:24 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 4:26:01 PM
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **BL**
Acenaphthene	ND	1.0		mg/Kg	5	11/1/2006
Acenaphthylene	ND	1.0		mg/Kg	5	11/1/2006
Aniline	ND	1.0		mg/Kg	5	11/1/2006
Anthracene	ND	1.0		mg/Kg	5	11/1/2006
Azobenzene	ND	1.0		mg/Kg	5	11/1/2006
Benz(a)anthracene	ND	1.2		mg/Kg	5	11/1/2006
Benzo(a)pyrene	ND	1.0		mg/Kg	5	11/1/2006
Benzo(b)fluoranthene	ND	1.0		mg/Kg	5	11/1/2006
Benzo(g,h,i)perylene	ND	1.5		mg/Kg	5	11/1/2006
Benzo(k)fluoranthene	ND	2.5		mg/Kg	5	11/1/2006
Benzoic acid	ND	2.5		mg/Kg	5	11/1/2006
Benzyl alcohol	ND	5.0		mg/Kg	5	11/1/2006
Bis(2-chloroethoxy)methane	ND	2.5		mg/Kg	5	11/1/2006
Bis(2-chloroethyl)ether	ND	1.2		mg/Kg	5	11/1/2006
Bis(2-chloroisopropyl)ether	ND	2.5		mg/Kg	5	11/1/2006
Bis(2-ethylhexyl)phthalate	ND	1.0		mg/Kg	5	11/1/2006
4-Bromophenyl phenyl ether	ND	1.2		mg/Kg	5	11/1/2006
Butyl benzyl phthalate	ND	1.0		mg/Kg	5	11/1/2006
Carbazole	ND	1.0		mg/Kg	5	11/1/2006
4-Chloro-3-methylphenol	ND	1.0		mg/Kg	5	11/1/2006
4-Chloroaniline	ND	1.0		mg/Kg	5	11/1/2006
2-Chloronaphthalene	ND	1.0		mg/Kg	5	11/1/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B8-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 2:15:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-03	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: BL
2-Chlorophenol	ND	1.0		mg/Kg	5	11/1/2006
4-Chlorophenyl phenyl ether	ND	1.0		mg/Kg	5	11/1/2006
Chrysene	ND	1.0		mg/Kg	5	11/1/2006
Di-n-butyl phthalate	ND	2.5		mg/Kg	5	11/1/2006
Di-n-octyl phthalate	ND	2.5		mg/Kg	5	11/1/2006
Dibenz(a,h)anthracene	ND	1.2		mg/Kg	5	11/1/2006
Dibenzofuran	ND	2.5		mg/Kg	5	11/1/2006
1,2-Dichlorobenzene	ND	1.0		mg/Kg	5	11/1/2006
1,3-Dichlorobenzene	ND	1.0		mg/Kg	5	11/1/2006
1,4-Dichlorobenzene	ND	1.0		mg/Kg	5	11/1/2006
3,3'-Dichlorobenzidine	ND	1.0		mg/Kg	5	11/1/2006
Diethyl phthalate	ND	1.0		mg/Kg	5	11/1/2006
Dimethyl phthalate	ND	1.0		mg/Kg	5	11/1/2006
2,4-Dichlorophenol	ND	1.0		mg/Kg	5	11/1/2006
2,4-Dimethylphenol	ND	1.0		mg/Kg	5	11/1/2006
4,6-Dinitro-2-methylphenol	ND	2.5		mg/Kg	5	11/1/2006
2,4-Dinitrophenol	ND	2.5		mg/Kg	5	11/1/2006
2,4-Dinitrotoluene	ND	1.0		mg/Kg	5	11/1/2006
2,6-Dinitrotoluene	ND	1.0		mg/Kg	5	11/1/2006
Fluoranthene	ND	1.0		mg/Kg	5	11/1/2006
Fluorene	ND	1.0		mg/Kg	5	11/1/2006
Hexachlorobenzene	ND	1.0		mg/Kg	5	11/1/2006
Hexachlorobutadiene	ND	1.0		mg/Kg	5	11/1/2006
Hexachlorocyclopentadiene	ND	1.2		mg/Kg	5	11/1/2006
Hexachloroethane	ND	2.5		mg/Kg	5	11/1/2006
Indeno(1,2,3-cd)pyrene	ND	1.0		mg/Kg	5	11/1/2006
Isophorone	ND	1.0		mg/Kg	5	11/1/2006
2-Methylnaphthalene	ND	1.0		mg/Kg	5	11/1/2006
2-Methylphenol	ND	1.0		mg/Kg	5	11/1/2006
3+4-Methylphenol	ND	1.0		mg/Kg	5	11/1/2006
N-Nitrosodi-n-propylamine	ND	1.0		mg/Kg	5	11/1/2006
N-Nitrosodiphenylamine	ND	1.0		mg/Kg	5	11/1/2006
Naphthalene	ND	1.0		mg/Kg	5	11/1/2006
2-Nitroaniline	ND	2.5		mg/Kg	5	11/1/2006
3-Nitroaniline	ND	2.5		mg/Kg	5	11/1/2006
4-Nitroaniline	ND	1.2		mg/Kg	5	11/1/2006
Nitrobenzene	ND	1.0		mg/Kg	5	11/1/2006
2-Nitrophenol	ND	1.0		mg/Kg	5	11/1/2006
4-Nitrophenol	ND	1.0		mg/Kg	5	11/1/2006
Pentachlorophenol	ND	2.5		mg/Kg	5	11/1/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B8-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 2:15:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-03	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: BL
Phenanthrene	ND	1.0		mg/Kg	5	11/1/2006
Phenol	ND	1.0		mg/Kg	5	11/1/2006
Pyrene	ND	1.0		mg/Kg	5	11/1/2006
Pyridine	ND	2.5		mg/Kg	5	11/1/2006
1,2,4-Trichlorobenzene	ND	1.0		mg/Kg	5	11/1/2006
2,4,5-Trichlorophenol	ND	1.0		mg/Kg	5	11/1/2006
2,4,6-Trichlorophenol	ND	1.0		mg/Kg	5	11/1/2006
Surr: 2,4,6-Tribromophenol	53.9	35.5-141		%REC	5	11/1/2006
Surr: 2-Fluorobiphenyl	54.7	30.4-128		%REC	5	11/1/2006
Surr: 2-Fluorophenol	48.4	28.1-129		%REC	5	11/1/2006
Surr: 4-Terphenyl-d14	42.3	34.6-151		%REC	5	11/1/2006
Surr: Nitrobenzene-d5	38.3	26.5-122		%REC	5	11/1/2006
Surr: Phenol-d5	47.9	37.6-118		%REC	5	11/1/2006
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Benzene	ND	0.050		mg/Kg	1	10/23/2006
Toluene	ND	0.050		mg/Kg	1	10/23/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/23/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/23/2006
Naphthalene	ND	0.10		mg/Kg	1	10/23/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
Acetone	ND	0.75		mg/Kg	1	10/23/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/23/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromoform	ND	0.050		mg/Kg	1	10/23/2006
Bromomethane	ND	0.10		mg/Kg	1	10/23/2006
2-Butanone	ND	0.50		mg/Kg	1	10/23/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/23/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/23/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Chloroethane	ND	0.10		mg/Kg	1	10/23/2006
Chloroform	ND	0.050		mg/Kg	1	10/23/2006
Chloromethane	ND	0.050		mg/Kg	1	10/23/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B8-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 2:15:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-03	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/23/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/23/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/23/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/23/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/23/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/23/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/23/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/23/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Styrene	ND	0.050		mg/Kg	1	10/23/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/23/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/23/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/23/2006
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/23/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B8-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 2:15:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-03	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Xylenes, Total	ND	0.10		mg/Kg	1	10/23/2006
Surr: 1,2-Dichloroethane-d4	81.6	62-127		%REC	1	10/23/2006
Surr: 4-Bromofluorobenzene	92.5	75.2-127		%REC	1	10/23/2006
Surr: Dibromofluoromethane	80.0	68.1-120		%REC	1	10/23/2006
Surr: Toluene-d8	100	74-119		%REC	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B8-5'
Lab Order:	0610228	**Collection Date:**	10/17/2006 4:50:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-04	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	43	10		mg/Kg	1	10/25/2006 1:31:13 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 1:31:13 AM
Surr: DNOP	88.2	61.7-135		%REC	1	10/25/2006 1:31:13 AM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	10/31/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	13		mg/Kg	5	11/6/2006 4:29:04 PM
Barium	260	1.0		mg/Kg	10	11/6/2006 5:42:29 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 4:29:04 PM
Chromium	8.2	1.5		mg/Kg	5	11/6/2006 4:29:04 PM
Lead	8.9	1.2		mg/Kg	5	11/6/2006 4:29:04 PM
Selenium	ND	13		mg/Kg	5	11/7/2006 9:27:54 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 4:29:04 PM
EPA METHOD 8260B: VOLATILES						Analyst: **LMM**
Benzene	ND	0.050		mg/Kg	1	10/23/2006
Toluene	ND	0.050		mg/Kg	1	10/23/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/23/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/23/2006
Naphthalene	ND	0.10		mg/Kg	1	10/23/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
Acetone	ND	0.75		mg/Kg	1	10/23/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/23/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromoform	ND	0.050		mg/Kg	1	10/23/2006
Bromomethane	ND	0.10		mg/Kg	1	10/23/2006
2-Butanone	ND	0.50		mg/Kg	1	10/23/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/23/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/23/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Chloroethane	ND	0.10		mg/Kg	1	10/23/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B8-5'
Lab Order:	0610228	**Collection Date:**	10/17/2006 4:50:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-04	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/23/2006
Chloromethane	ND	0.050		mg/Kg	1	10/23/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/23/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/23/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/23/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/23/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/23/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/23/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/23/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/23/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Styrene	ND	0.050		mg/Kg	1	10/23/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/23/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/23/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B8-5'
Lab Order:	0610228	**Collection Date:**	10/17/2006 4:50:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-04	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/23/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/23/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/23/2006
Surr: 1,2-Dichloroethane-d4	81.8	62-127		%REC	1	10/23/2006
Surr: 4-Bromofluorobenzene	92.8	75.2-127		%REC	1	10/23/2006
Surr: Dibromofluoromethane	80.7	68.1-120		%REC	1	10/23/2006
Surr: Toluene-d8	100	74-119		%REC	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B9-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 1:45:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-05	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	15000	200		mg/Kg	20	10/25/2006 2:06:04 AM
Motor Oil Range Organics (MRO)	ND	1000		mg/Kg	20	10/25/2006 2:06:04 AM
Surr: DNOP	0	61.7-135	S	%REC	20	10/25/2006 2:06:04 AM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	10/31/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	12		mg/Kg	5	11/6/2006 4:32:10 PM
Barium	220	0.50		mg/Kg	5	11/6/2006 4:32:10 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 4:32:10 PM
Chromium	8.5	1.5		mg/Kg	5	11/6/2006 4:32:10 PM
Lead	8.3	1.2		mg/Kg	5	11/6/2006 4:32:10 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 9:30:22 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 4:32:10 PM
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **BL**
Acenaphthene	ND	1.0		mg/Kg	5	11/1/2006
Acenaphthylene	ND	1.0		mg/Kg	5	11/1/2006
Aniline	ND	1.0		mg/Kg	5	11/1/2006
Anthracene	ND	1.0		mg/Kg	5	11/1/2006
Azobenzene	ND	1.0		mg/Kg	5	11/1/2006
Benz(a)anthracene	ND	1.2		mg/Kg	5	11/1/2006
Benzo(a)pyrene	ND	1.0		mg/Kg	5	11/1/2006
Benzo(b)fluoranthene	ND	1.0		mg/Kg	5	11/1/2006
Benzo(g,h,i)perylene	ND	1.5		mg/Kg	5	11/1/2006
Benzo(k)fluoranthene	ND	2.5		mg/Kg	5	11/1/2006
Benzoic acid	ND	2.5		mg/Kg	5	11/1/2006
Benzyl alcohol	ND	5.0		mg/Kg	5	11/1/2006
Bis(2-chloroethoxy)methane	ND	2.5		mg/Kg	5	11/1/2006
Bis(2-chloroethyl)ether	ND	1.2		mg/Kg	5	11/1/2006
Bis(2-chloroisopropyl)ether	ND	2.5		mg/Kg	5	11/1/2006
Bis(2-ethylhexyl)phthalate	ND	1.0		mg/Kg	5	11/1/2006
4-Bromophenyl phenyl ether	ND	1.2		mg/Kg	5	11/1/2006
Butyl benzyl phthalate	ND	1.0		mg/Kg	5	11/1/2006
Carbazole	ND	1.0		mg/Kg	5	11/1/2006
4-Chloro-3-methylphenol	ND	1.0		mg/Kg	5	11/1/2006
4-Chloroaniline	ND	1.0		mg/Kg	5	11/1/2006
2-Chloronaphthalene	ND	1.0		mg/Kg	5	11/1/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B9-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 1:45:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-05	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **BL**
2-Chlorophenol	ND	1.0		mg/Kg	5	11/1/2006
4-Chlorophenyl phenyl ether	ND	1.0		mg/Kg	5	11/1/2006
Chrysene	ND	1.0		mg/Kg	5	11/1/2006
Di-n-butyl phthalate	ND	2.5		mg/Kg	5	11/1/2006
Di-n-octyl phthalate	ND	2.5		mg/Kg	5	11/1/2006
Dibenz(a,h)anthracene	ND	1.2		mg/Kg	5	11/1/2006
Dibenzofuran	ND	2.5		mg/Kg	5	11/1/2006
1,2-Dichlorobenzene	ND	1.0		mg/Kg	5	11/1/2006
1,3-Dichlorobenzene	ND	1.0		mg/Kg	5	11/1/2006
1,4-Dichlorobenzene	ND	1.0		mg/Kg	5	11/1/2006
3,3'-Dichlorobenzidine	ND	1.0		mg/Kg	5	11/1/2006
Diethyl phthalate	ND	1.0		mg/Kg	5	11/1/2006
Dimethyl phthalate	ND	1.0		mg/Kg	5	11/1/2006
2,4-Dichlorophenol	ND	1.0		mg/Kg	5	11/1/2006
2,4-Dimethylphenol	ND	1.0		mg/Kg	5	11/1/2006
4,6-Dinitro-2-methylphenol	ND	2.5		mg/Kg	5	11/1/2006
2,4-Dinitrophenol	ND	2.5		mg/Kg	5	11/1/2006
2,4-Dinitrotoluene	ND	1.0		mg/Kg	5	11/1/2006
2,6-Dinitrotoluene	ND	1.0		mg/Kg	5	11/1/2006
Fluoranthene	ND	1.0		mg/Kg	5	11/1/2006
Fluorene	ND	1.0		mg/Kg	5	11/1/2006
Hexachlorobenzene	ND	1.0		mg/Kg	5	11/1/2006
Hexachlorobutadiene	ND	1.0		mg/Kg	5	11/1/2006
Hexachlorocyclopentadiene	ND	1.2		mg/Kg	5	11/1/2006
Hexachloroethane	ND	2.5		mg/Kg	5	11/1/2006
Indeno(1,2,3-cd)pyrene	ND	1.0		mg/Kg	5	11/1/2006
Isophorone	ND	1.0		mg/Kg	5	11/1/2006
2-Methylnaphthalene	ND	1.0		mg/Kg	5	11/1/2006
2-Methylphenol	ND	1.0		mg/Kg	5	11/1/2006
3+4-Methylphenol	ND	1.0		mg/Kg	5	11/1/2006
N-Nitrosodi-n-propylamine	ND	1.0		mg/Kg	5	11/1/2006
N-Nitrosodiphenylamine	ND	1.0		mg/Kg	5	11/1/2006
Naphthalene	ND	1.0		mg/Kg	5	11/1/2006
2-Nitroaniline	ND	2.5		mg/Kg	5	11/1/2006
3-Nitroaniline	ND	2.5		mg/Kg	5	11/1/2006
4-Nitroaniline	ND	1.2		mg/Kg	5	11/1/2006
Nitrobenzene	ND	1.0		mg/Kg	5	11/1/2006
2-Nitrophenol	ND	1.0		mg/Kg	5	11/1/2006
4-Nitrophenol	ND	1.0		mg/Kg	5	11/1/2006
Pentachlorophenol	ND	2.5		mg/Kg	5	11/1/2006

Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B9-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 1:45:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-05	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8270C: SEMIVOLATILES						Analyst: BL
Phenanthrene	ND	1.0		mg/Kg	5	11/1/2006
Phenol	ND	1.0		mg/Kg	5	11/1/2006
Pyrene	ND	1.0		mg/Kg	5	11/1/2006
Pyridine	ND	2.5		mg/Kg	5	11/1/2006
1,2,4-Trichlorobenzene	ND	1.0		mg/Kg	5	11/1/2006
2,4,5-Trichlorophenol	ND	1.0		mg/Kg	5	11/1/2006
2,4,6-Trichlorophenol	ND	1.0		mg/Kg	5	11/1/2006
Surr: 2,4,6-Tribromophenol	59.2	35.5-141		%REC	5	11/1/2006
Surr: 2-Fluorobiphenyl	43.6	30.4-128		%REC	5	11/1/2006
Surr: 2-Fluorophenol	39.7	28.1-129		%REC	5	11/1/2006
Surr: 4-Terphenyl-d14	27.6	34.6-151	S	%REC	5	11/1/2006
Surr: Nitrobenzene-d5	47.2	26.5-122		%REC	5	11/1/2006
Surr: Phenol-d5	36.6	37.6-118	S	%REC	5	11/1/2006
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Benzene	ND	0.050		mg/Kg	1	10/24/2006
Toluene	ND	0.050		mg/Kg	1	10/24/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/24/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/24/2006
Naphthalene	ND	0.10		mg/Kg	1	10/24/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/24/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/24/2006
Acetone	ND	0.75		mg/Kg	1	10/24/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/24/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/24/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/24/2006
Bromoform	ND	0.050		mg/Kg	1	10/24/2006
Bromomethane	ND	0.10		mg/Kg	1	10/24/2006
2-Butanone	ND	0.50		mg/Kg	1	10/24/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/24/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/24/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
Chloroethane	ND	0.10		mg/Kg	1	10/24/2006
Chloroform	ND	0.050		mg/Kg	1	10/24/2006
Chloromethane	ND	0.050		mg/Kg	1	10/24/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B9-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 1:45:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-05	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/24/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/24/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/24/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/24/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/24/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/24/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/24/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/24/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/24/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/24/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/24/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/24/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/24/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/24/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/24/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/24/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/24/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
Styrene	ND	0.050		mg/Kg	1	10/24/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/24/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/24/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/24/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/24/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/24/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/24/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/24/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/24/2006
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/24/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/24/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B9-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 1:45:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-05	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Xylenes, Total	ND	0.10		mg/Kg	1	10/24/2006
Surr: 1,2-Dichloroethane-d4	77.2	62-127		%REC	1	10/24/2006
Surr: 4-Bromofluorobenzene	97.8	75.2-127		%REC	1	10/24/2006
Surr: Dibromofluoromethane	76.9	68.1-120		%REC	1	10/24/2006
Surr: Toluene-d8	104	74-119		%REC	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B9-5'
Lab Order:	0610228	**Collection Date:**	10/17/2006 4:05:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-06	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/25/2006 2:40:50 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 2:40:50 AM
Surr: DNOP	87.0	61.7-135		%REC	1	10/25/2006 2:40:50 AM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	10/31/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	12		mg/Kg	5	11/6/2006 4:38:16 PM
Barium	310	1.0		mg/Kg	10	11/6/2006 5:45:25 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 4:38:16 PM
Chromium	9.1	1.5		mg/Kg	5	11/6/2006 4:38:16 PM
Lead	7.1	1.2		mg/Kg	5	11/6/2006 4:38:16 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 9:32:49 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 4:38:16 PM
EPA METHOD 8260B: VOLATILES						Analyst: **LMM**
Benzene	ND	0.050		mg/Kg	1	10/23/2006
Toluene	ND	0.050		mg/Kg	1	10/23/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/23/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/23/2006
Naphthalene	ND	0.10		mg/Kg	1	10/23/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
Acetone	ND	0.75		mg/Kg	1	10/23/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/23/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromoform	ND	0.050		mg/Kg	1	10/23/2006
Bromomethane	ND	0.10		mg/Kg	1	10/23/2006
2-Butanone	ND	0.50		mg/Kg	1	10/23/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/23/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/23/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Chloroethane	ND	0.10		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B9-5'
Lab Order:	0610228	**Collection Date:**	10/17/2006 4:05:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-06	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/23/2006
Chloromethane	ND	0.050		mg/Kg	1	10/23/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/23/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/23/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/23/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/23/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/23/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/23/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/23/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/23/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Styrene	ND	0.050		mg/Kg	1	10/23/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/23/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/23/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B9-5'
Lab Order:	0610228	**Collection Date:**	10/17/2006 4:05:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-06	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/23/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/23/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/23/2006
Surr: 1,2-Dichloroethane-d4	77.0	62-127		%REC	1	10/23/2006
Surr: 4-Bromofluorobenzene	98.8	75.2-127		%REC	1	10/23/2006
Surr: Dibromofluoromethane	77.1	68.1-120		%REC	1	10/23/2006
Surr: Toluene-d8	97.2	74-119		%REC	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B10-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 3:05:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-07	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	63	10		mg/Kg	1	10/25/2006 3:15:36 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 3:15:36 AM
Surr: DNOP	87.8	61.7-135		%REC	1	10/25/2006 3:15:36 AM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	10/31/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	12		mg/Kg	5	11/6/2006 4:41:15 PM
Barium	280	1.0		mg/Kg	10	11/6/2006 5:51:19 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 4:41:15 PM
Chromium	9.5	1.5		mg/Kg	5	11/6/2006 4:41:15 PM
Lead	8.4	1.2		mg/Kg	5	11/6/2006 4:41:15 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 9:35:35 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 4:41:15 PM
EPA METHOD 8260B: VOLATILES						Analyst: **LMM**
Benzene	ND	0.050		mg/Kg	1	10/23/2006
Toluene	ND	0.050		mg/Kg	1	10/23/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/23/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/23/2006
Naphthalene	ND	0.10		mg/Kg	1	10/23/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
Acetone	ND	0.75		mg/Kg	1	10/23/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/23/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromoform	ND	0.050		mg/Kg	1	10/23/2006
Bromomethane	ND	0.10		mg/Kg	1	10/23/2006
2-Butanone	ND	0.50		mg/Kg	1	10/23/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/23/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/23/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Chloroethane	ND	0.10		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B10-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 3:05:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-07	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/23/2006
Chloromethane	ND	0.050		mg/Kg	1	10/23/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/23/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/23/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/23/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/23/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/23/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/23/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/23/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/23/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Styrene	ND	0.050		mg/Kg	1	10/23/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/23/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/23/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B10-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 3:05:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-07	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/23/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/23/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/23/2006
Surr: 1,2-Dichloroethane-d4	81.9	62-127		%REC	1	10/23/2006
Surr: 4-Bromofluorobenzene	102	75.2-127		%REC	1	10/23/2006
Surr: Dibromofluoromethane	82.8	68.1-120		%REC	1	10/23/2006
Surr: Toluene-d8	92.8	74-119		%REC	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B10-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 9:15:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-08	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/25/2006 6:09:35 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 6:09:35 AM
Surr: DNOP	88.0	61.7-135		%REC	1	10/25/2006 6:09:35 AM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	10/31/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	12		mg/Kg	5	11/6/2006 4:54:20 PM
Barium	230	0.50		mg/Kg	5	11/6/2006 4:54:20 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 4:54:20 PM
Chromium	9.3	1.5		mg/Kg	5	11/6/2006 4:54:20 PM
Lead	6.3	1.2		mg/Kg	5	11/6/2006 4:54:20 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 9:47:10 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 4:54:20 PM
EPA METHOD 8260B: VOLATILES						Analyst: **LMM**
Benzene	ND	0.050		mg/Kg	1	10/23/2006
Toluene	ND	0.050		mg/Kg	1	10/23/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/23/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/23/2006
Naphthalene	ND	0.10		mg/Kg	1	10/23/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
Acetone	ND	0.75		mg/Kg	1	10/23/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/23/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromoform	ND	0.050		mg/Kg	1	10/23/2006
Bromomethane	ND	0.10		mg/Kg	1	10/23/2006
2-Butanone	ND	0.50		mg/Kg	1	10/23/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/23/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/23/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Chloroethane	ND	0.10		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B10-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 9:15:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-08	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/23/2006
Chloromethane	ND	0.050		mg/Kg	1	10/23/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/23/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/23/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/23/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/23/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/23/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/23/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/23/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/23/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Styrene	ND	0.050		mg/Kg	1	10/23/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/23/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/23/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B10-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 9:15:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-08	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/23/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/23/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/23/2006
Surr: 1,2-Dichloroethane-d4	83.8	62-127		%REC	1	10/23/2006
Surr: 4-Bromofluorobenzene	99.6	75.2-127		%REC	1	10/23/2006
Surr: Dibromofluoromethane	81.9	68.1-120		%REC	1	10/23/2006
Surr: Toluene-d8	97.1	74-119		%REC	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	BD101806
Lab Order:	0610228	**Collection Date:**	10/18/2006
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-11	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/25/2006 9:03:32 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 9:03:32 AM
Surr: DNOP	78.5	61.7-135		%REC	1	10/25/2006 9:03:32 AM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	10/31/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	12		mg/Kg	5	11/6/2006 5:10:31 PM
Barium	290	1.0		mg/Kg	10	11/6/2006 6:01:53 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 5:10:31 PM
Chromium	9.4	1.5		mg/Kg	5	11/6/2006 5:10:31 PM
Lead	10	1.2		mg/Kg	5	11/6/2006 5:10:31 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 9:54:39 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 5:10:31 PM
EPA METHOD 8260B: VOLATILES						Analyst: **LMM**
Benzene	ND	0.050		mg/Kg	1	10/23/2006
Toluene	ND	0.050		mg/Kg	1	10/23/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/23/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/23/2006
Naphthalene	ND	0.10		mg/Kg	1	10/23/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
Acetone	ND	0.75		mg/Kg	1	10/23/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/23/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromoform	ND	0.050		mg/Kg	1	10/23/2006
Bromomethane	ND	0.10		mg/Kg	1	10/23/2006
2-Butanone	ND	0.50		mg/Kg	1	10/23/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/23/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/23/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Chloroethane	ND	0.10		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	BD101806
Lab Order:	0610228	**Collection Date:**	10/18/2006
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-11	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/23/2006
Chloromethane	ND	0.050		mg/Kg	1	10/23/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/23/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/23/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/23/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/23/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/23/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/23/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/23/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/23/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Styrene	ND	0.050		mg/Kg	1	10/23/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/23/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/23/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	BD101806
Lab Order:	0610228	**Collection Date:**	10/18/2006
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-11	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/23/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/23/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/23/2006
Surr: 1,2-Dichloroethane-d4	84.8	62-127		%REC	1	10/23/2006
Surr: 4-Bromofluorobenzene	98.5	75.2-127		%REC	1	10/23/2006
Surr: Dibromofluoromethane	84.4	68.1-120		%REC	1	10/23/2006
Surr: Toluene-d8	99.9	74-119		%REC	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	Trip Blank
Lab Order:	0610228	**Collection Date:**	
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-12	**Matrix:**	TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Benzene	ND	1.0		µg/L	1	10/20/2006
Toluene	ND	1.0		µg/L	1	10/20/2006
Ethylbenzene	ND	1.0		µg/L	1	10/20/2006
Methyl tert-butyl ether (MTBE)	ND	1.5		µg/L	1	10/20/2006
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	10/20/2006
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	10/20/2006
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/20/2006
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/20/2006
Naphthalene	ND	2.0		µg/L	1	10/20/2006
1-Methylnaphthalene	ND	4.0		µg/L	1	10/20/2006
2-Methylnaphthalene	ND	4.0		µg/L	1	10/20/2006
Acetone	ND	10		µg/L	1	10/20/2006
Bromobenzene	ND	1.0		µg/L	1	10/20/2006
Bromochloromethane	ND	1.0		µg/L	1	10/20/2006
Bromodichloromethane	ND	1.0		µg/L	1	10/20/2006
Bromoform	ND	1.0		µg/L	1	10/20/2006
Bromomethane	ND	2.0		µg/L	1	10/20/2006
2-Butanone	ND	10		µg/L	1	10/20/2006
Carbon disulfide	ND	10		µg/L	1	10/20/2006
Carbon Tetrachloride	ND	2.0		µg/L	1	10/20/2006
Chlorobenzene	ND	1.0		µg/L	1	10/20/2006
Chloroethane	ND	2.0		µg/L	1	10/20/2006
Chloroform	ND	1.0		µg/L	1	10/20/2006
Chloromethane	ND	1.0		µg/L	1	10/20/2006
2-Chlorotoluene	ND	1.0		µg/L	1	10/20/2006
4-Chlorotoluene	ND	1.0		µg/L	1	10/20/2006
cis-1,2-DCE	ND	1.0		µg/L	1	10/20/2006
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/20/2006
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/20/2006
Dibromochloromethane	ND	1.0		µg/L	1	10/20/2006
Dibromomethane	ND	2.0		µg/L	1	10/20/2006
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/20/2006
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/20/2006
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/20/2006
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/20/2006
1,1-Dichloroethane	ND	2.0		µg/L	1	10/20/2006
1,1-Dichloroethene	ND	1.0		µg/L	1	10/20/2006
1,2-Dichloropropane	ND	1.0		µg/L	1	10/20/2006
1,3-Dichloropropane	ND	1.0		µg/L	1	10/20/2006
2,2-Dichloropropane	ND	2.0		µg/L	1	10/20/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	Trip Blank
Lab Order:	0610228	**Collection Date:**	
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-12	**Matrix:**	TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
1,1-Dichloropropene	ND	1.0		µg/L	1	10/20/2006
Hexachlorobutadiene	ND	2.0		µg/L	1	10/20/2006
2-Hexanone	ND	10		µg/L	1	10/20/2006
Isopropylbenzene	ND	1.0		µg/L	1	10/20/2006
4-Isopropyltoluene	ND	1.0		µg/L	1	10/20/2006
4-Methyl-2-pentanone	ND	10		µg/L	1	10/20/2006
Methylene Chloride	ND	3.0		µg/L	1	10/20/2006
n-Butylbenzene	ND	1.0		µg/L	1	10/20/2006
n-Propylbenzene	ND	1.0		µg/L	1	10/20/2006
sec-Butylbenzene	ND	2.0		µg/L	1	10/20/2006
Styrene	ND	1.5		µg/L	1	10/20/2006
tert-Butylbenzene	ND	1.0		µg/L	1	10/20/2006
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/20/2006
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	10/20/2006
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/20/2006
trans-1,2-DCE	ND	1.0		µg/L	1	10/20/2006
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/20/2006
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/20/2006
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/20/2006
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/20/2006
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/20/2006
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/20/2006
Trichlorofluoromethane	ND	1.0		µg/L	1	10/20/2006
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/20/2006
Vinyl chloride	ND	1.0		µg/L	1	10/20/2006
Xylenes, Total	ND	3.0		µg/L	1	10/20/2006
Surr: 1,2-Dichloroethane-d4	88.4	69.9-130		%REC	1	10/20/2006
Surr: 4-Bromofluorobenzene	113	75-139		%REC	1	10/20/2006
Surr: Dibromofluoromethane	89.7	57.3-135		%REC	1	10/20/2006
Surr: Toluene-d8	101	81.9-122		%REC	1	10/20/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B1-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 8:55:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-13	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	470	100		mg/Kg	10	10/25/2006 10:05:08 AM
Motor Oil Range Organics (MRO)	720	500		mg/Kg	10	10/25/2006 10:05:08 AM
Surr: DNOP	130	61.7-135		%REC	10	10/25/2006 10:05:08 AM
EPA METHOD 7471: MERCURY						Analyst: MAP
Mercury	ND	0.033		mg/Kg	1	10/31/2006
EPA METHOD 6010B: SOIL METALS						Analyst: CMS
Arsenic	ND	13		mg/Kg	5	11/6/2006 5:16:38 PM
Barium	280	1.0		mg/Kg	10	11/6/2006 6:04:49 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 5:16:38 PM
Chromium	11	1.5		mg/Kg	5	11/6/2006 5:16:38 PM
Lead	7.9	1.2		mg/Kg	5	11/6/2006 5:16:38 PM
Selenium	ND	13		mg/Kg	5	11/7/2006 9:57:07 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 5:16:38 PM
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Benzene	ND	0.050		mg/Kg	1	10/23/2006
Toluene	ND	0.050		mg/Kg	1	10/23/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/23/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/23/2006
Naphthalene	ND	0.10		mg/Kg	1	10/23/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
Acetone	ND	0.75		mg/Kg	1	10/23/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/23/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromoform	ND	0.050		mg/Kg	1	10/23/2006
Bromomethane	ND	0.10		mg/Kg	1	10/23/2006
2-Butanone	ND	0.50		mg/Kg	1	10/23/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/23/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/23/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Chloroethane	ND	0.10		mg/Kg	1	10/23/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B1-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 8:55:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-13	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/23/2006
Chloromethane	ND	0.050		mg/Kg	1	10/23/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/23/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/23/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/23/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/23/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/23/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/23/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/23/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/23/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Styrene	ND	0.050		mg/Kg	1	10/23/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/23/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/23/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B1-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 8:55:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-13	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/23/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/23/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/23/2006
Surr: 1,2-Dichloroethane-d4	79.8	62-127		%REC	1	10/23/2006
Surr: 4-Bromofluorobenzene	95.3	75.2-127		%REC	1	10/23/2006
Surr: Dibromofluoromethane	77.4	68.1-120		%REC	1	10/23/2006
Surr: Toluene-d8	92.4	74-119		%REC	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B1-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 11:40:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-14	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/25/2006 10:39:54 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 10:39:54 AM
Surr: DNOP	84.9	61.7-135		%REC	1	10/25/2006 10:39:54 AM
EPA METHOD 7471: MERCURY						Analyst: MAP
Mercury	ND	0.033		mg/Kg	1	11/1/2006
EPA METHOD 6010B: SOIL METALS						Analyst: CMS
Arsenic	ND	12		mg/Kg	5	11/6/2006 1:14:42 PM
Barium	300	1.0		mg/Kg	10	11/6/2006 2:36:55 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 1:14:42 PM
Chromium	8.8	1.5		mg/Kg	5	11/6/2006 1:14:42 PM
Lead	5.0	1.2		mg/Kg	5	11/6/2006 1:14:42 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 10:52:08 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 1:14:42 PM
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Benzene	ND	0.050		mg/Kg	1	10/23/2006
Toluene	ND	0.050		mg/Kg	1	10/23/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/23/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/23/2006
Naphthalene	ND	0.10		mg/Kg	1	10/23/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
Acetone	ND	0.75		mg/Kg	1	10/23/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/23/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromoform	ND	0.050		mg/Kg	1	10/23/2006
Bromomethane	ND	0.10		mg/Kg	1	10/23/2006
2-Butanone	ND	0.50		mg/Kg	1	10/23/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/23/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/23/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Chloroethane	ND	0.10		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B1-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 11:40:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-14	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/23/2006
Chloromethane	ND	0.050		mg/Kg	1	10/23/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/23/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/23/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/23/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/23/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/23/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/23/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/23/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/23/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Styrene	ND	0.050		mg/Kg	1	10/23/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/23/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/23/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B1-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 11:40:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-14	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/23/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/23/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/23/2006
Surr: 1,2-Dichloroethane-d4	80.5	62-127		%REC	1	10/23/2006
Surr: 4-Bromofluorobenzene	105	75.2-127		%REC	1	10/23/2006
Surr: Dibromofluoromethane	79.9	68.1-120		%REC	1	10/23/2006
Surr: Toluene-d8	101	74-119		%REC	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B2-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 2:00:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-15	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/25/2006 11:49:24 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 11:49:24 AM
Surr: DNOP	86.8	61.7-135		%REC	1	10/25/2006 11:49:24 AM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	11/1/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	13		mg/Kg	5	11/6/2006 1:17:38 PM
Barium	260	1.0		mg/Kg	10	11/6/2006 2:39:56 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 1:17:38 PM
Chromium	10	1.5		mg/Kg	5	11/6/2006 1:17:38 PM
Lead	7.0	1.2		mg/Kg	5	11/6/2006 1:17:38 PM
Selenium	ND	13		mg/Kg	5	11/7/2006 10:54:37 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 1:17:38 PM
EPA METHOD 8260B: VOLATILES						Analyst: **LMM**
Benzene	ND	0.050		mg/Kg	1	10/23/2006
Toluene	ND	0.050		mg/Kg	1	10/23/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/23/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/23/2006
Naphthalene	ND	0.10		mg/Kg	1	10/23/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
Acetone	ND	0.75		mg/Kg	1	10/23/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/23/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromoform	ND	0.050		mg/Kg	1	10/23/2006
Bromomethane	ND	0.10		mg/Kg	1	10/23/2006
2-Butanone	ND	0.50		mg/Kg	1	10/23/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/23/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/23/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Chloroethane	ND	0.10		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B2-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 2:00:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-15	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/23/2006
Chloromethane	ND	0.050		mg/Kg	1	10/23/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/23/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/23/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/23/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/23/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/23/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/23/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/23/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/23/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Styrene	ND	0.050		mg/Kg	1	10/23/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/23/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/23/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B2-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 2:00:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-15	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/23/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/23/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/23/2006
Surr: 1,2-Dichloroethane-d4	81.2	62-127		%REC	1	10/23/2006
Surr: 4-Bromofluorobenzene	95.9	75.2-127		%REC	1	10/23/2006
Surr: Dibromofluoromethane	81.7	68.1-120		%REC	1	10/23/2006
Surr: Toluene-d8	88.9	74-119		%REC	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B2-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 3:10:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-16	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/25/2006 12:24:12 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 12:24:12 PM
Surr: DNOP	86.6	61.7-135		%REC	1	10/25/2006 12:24:12 PM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	11/1/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	12		mg/Kg	5	11/6/2006 1:24:42 PM
Barium	290	1.0		mg/Kg	10	11/6/2006 2:42:52 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 1:24:42 PM
Chromium	9.3	1.5		mg/Kg	5	11/6/2006 1:24:42 PM
Lead	5.9	1.2		mg/Kg	5	11/6/2006 1:24:42 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 10:57:04 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 1:24:42 PM
EPA METHOD 8260B: VOLATILES						Analyst: **LMM**
Benzene	ND	0.050		mg/Kg	1	10/23/2006
Toluene	ND	0.050		mg/Kg	1	10/23/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/23/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/23/2006
Naphthalene	ND	0.10		mg/Kg	1	10/23/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
Acetone	ND	0.75		mg/Kg	1	10/23/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/23/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromoform	ND	0.050		mg/Kg	1	10/23/2006
Bromomethane	ND	0.10		mg/Kg	1	10/23/2006
2-Butanone	ND	0.50		mg/Kg	1	10/23/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/23/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/23/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Chloroethane	ND	0.10		mg/Kg	1	10/23/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B2-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 3:10:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-16	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/23/2006
Chloromethane	ND	0.050		mg/Kg	1	10/23/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/23/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/23/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/23/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/23/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/23/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/23/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/23/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/23/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Styrene	ND	0.050		mg/Kg	1	10/23/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/23/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/23/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B2-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 3:10:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-16	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/23/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/23/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/23/2006
Surr: 1,2-Dichloroethane-d4	80.9	62-127		%REC	1	10/23/2006
Surr: 4-Bromofluorobenzene	97.1	75.2-127		%REC	1	10/23/2006
Surr: Dibromofluoromethane	79.1	68.1-120		%REC	1	10/23/2006
Surr: Toluene-d8	99.5	74-119		%REC	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B3-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 10:50:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-17	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/25/2006 12:59:04 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 12:59:04 PM
Surr: DNOP	85.3	61.7-135		%REC	1	10/25/2006 12:59:04 PM
EPA METHOD 7471: MERCURY						Analyst: MAP
Mercury	ND	0.033		mg/Kg	1	11/1/2006
EPA METHOD 6010B: SOIL METALS						Analyst: CMS
Arsenic	ND	12		mg/Kg	5	11/6/2006 1:30:21 PM
Barium	260	1.0		mg/Kg	10	11/6/2006 2:45:50 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 1:30:21 PM
Chromium	9.0	1.5		mg/Kg	5	11/6/2006 1:30:21 PM
Lead	11	1.2		mg/Kg	5	11/6/2006 1:30:21 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 10:59:30 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 1:30:21 PM
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Benzene	ND	0.050		mg/Kg	1	10/23/2006
Toluene	ND	0.050		mg/Kg	1	10/23/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/23/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/23/2006
Naphthalene	ND	0.10		mg/Kg	1	10/23/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
Acetone	ND	0.75		mg/Kg	1	10/23/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/23/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromoform	ND	0.050		mg/Kg	1	10/23/2006
Bromomethane	ND	0.10		mg/Kg	1	10/23/2006
2-Butanone	ND	0.50		mg/Kg	1	10/23/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/23/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/23/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Chloroethane	ND	0.10		mg/Kg	1	10/23/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B3-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 10:50:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-17	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/23/2006
Chloromethane	ND	0.050		mg/Kg	1	10/23/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/23/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/23/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/23/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/23/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/23/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/23/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/23/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/23/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Styrene	ND	0.050		mg/Kg	1	10/23/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/23/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/23/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B3-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 10:50:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-17	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/23/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/23/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/23/2006
Surr: 1,2-Dichloroethane-d4	81.6	62-127		%REC	1	10/23/2006
Surr: 4-Bromofluorobenzene	96.0	75.2-127		%REC	1	10/23/2006
Surr: Dibromofluoromethane	80.9	68.1-120		%REC	1	10/23/2006
Surr: Toluene-d8	90.4	74-119		%REC	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B3-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 12:15:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-18	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/25/2006 1:34:07 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 1:34:07 PM
Surr: DNOP	89.1	61.7-135		%REC	1	10/25/2006 1:34:07 PM
EPA METHOD 7471: MERCURY						Analyst: MAP
Mercury	ND	0.033		mg/Kg	1	11/1/2006
EPA METHOD 6010B: SOIL METALS						Analyst: CMS
Arsenic	ND	12		mg/Kg	5	11/6/2006 1:33:18 PM
Barium	290	1.0		mg/Kg	10	11/6/2006 2:48:47 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 1:33:18 PM
Chromium	9.4	1.5		mg/Kg	5	11/6/2006 1:33:18 PM
Lead	8.3	1.2		mg/Kg	5	11/6/2006 1:33:18 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 11:01:58 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 1:33:18 PM
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Benzene	ND	0.050		mg/Kg	1	10/23/2006
Toluene	ND	0.050		mg/Kg	1	10/23/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/23/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/23/2006
Naphthalene	ND	0.10		mg/Kg	1	10/23/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/23/2006
Acetone	ND	0.75		mg/Kg	1	10/23/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/23/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/23/2006
Bromoform	ND	0.050		mg/Kg	1	10/23/2006
Bromomethane	ND	0.10		mg/Kg	1	10/23/2006
2-Butanone	ND	0.50		mg/Kg	1	10/23/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/23/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/23/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Chloroethane	ND	0.10		mg/Kg	1	10/23/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B3-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 12:15:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-18	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/23/2006
Chloromethane	ND	0.050		mg/Kg	1	10/23/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/23/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/23/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/23/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/23/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/23/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/23/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/23/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/23/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/23/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/23/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/23/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/23/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/23/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/23/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
Styrene	ND	0.050		mg/Kg	1	10/23/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/23/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/23/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/23/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/23/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/23/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/23/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/23/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B3-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 12:15:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-18	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/23/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/23/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/23/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/23/2006
Surr: 1,2-Dichloroethane-d4	82.8	62-127		%REC	1	10/23/2006
Surr: 4-Bromofluorobenzene	104	75.2-127		%REC	1	10/23/2006
Surr: Dibromofluoromethane	80.5	68.1-120		%REC	1	10/23/2006
Surr: Toluene-d8	92.9	74-119		%REC	1	10/23/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B4-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 8:40:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-19	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/25/2006 2:09:15 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 2:09:15 PM
Surr: DNOP	85.6	61.7-135		%REC	1	10/25/2006 2:09:15 PM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	11/1/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	12		mg/Kg	5	11/6/2006 1:37:13 PM
Barium	250	0.50		mg/Kg	5	11/6/2006 1:37:13 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 1:37:13 PM
Chromium	11	1.5		mg/Kg	5	11/6/2006 1:37:13 PM
Lead	8.1	1.2		mg/Kg	5	11/6/2006 1:37:13 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 11:04:25 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 1:37:13 PM
EPA METHOD 8260B: VOLATILES						Analyst: **LMM**
Benzene	ND	0.050		mg/Kg	1	10/24/2006
Toluene	ND	0.050		mg/Kg	1	10/24/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/24/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/24/2006
Naphthalene	ND	0.10		mg/Kg	1	10/24/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/24/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/24/2006
Acetone	ND	0.75		mg/Kg	1	10/24/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/24/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/24/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/24/2006
Bromoform	ND	0.050		mg/Kg	1	10/24/2006
Bromomethane	ND	0.10		mg/Kg	1	10/24/2006
2-Butanone	ND	0.50		mg/Kg	1	10/24/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/24/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/24/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
Chloroethane	ND	0.10		mg/Kg	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B4-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 8:40:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-19	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/24/2006
Chloromethane	ND	0.050		mg/Kg	1	10/24/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/24/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/24/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/24/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/24/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/24/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/24/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/24/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/24/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/24/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/24/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/24/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/24/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/24/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/24/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/24/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/24/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/24/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/24/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
Styrene	ND	0.050		mg/Kg	1	10/24/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/24/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/24/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/24/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/24/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/24/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/24/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/24/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B4-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 8:40:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-19	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/24/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/24/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/24/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/24/2006
Surr: 1,2-Dichloroethane-d4	80.2	62-127		%REC	1	10/24/2006
Surr: 4-Bromofluorobenzene	93.0	75.2-127		%REC	1	10/24/2006
Surr: Dibromofluoromethane	79.3	68.1-120		%REC	1	10/24/2006
Surr: Toluene-d8	100	74-119		%REC	1	10/24/2006

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B4-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 11:15:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-20	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/25/2006 2:44:22 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 2:44:22 PM
Surr: DNOP	86.7	61.7-135		%REC	1	10/25/2006 2:44:22 PM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	11/1/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	12		mg/Kg	5	11/6/2006 1:48:41 PM
Barium	230	0.50		mg/Kg	5	11/6/2006 1:48:41 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 1:48:41 PM
Chromium	11	1.5		mg/Kg	5	11/6/2006 1:48:41 PM
Lead	7.6	1.2		mg/Kg	5	11/6/2006 1:48:41 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 11:14:14 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 1:48:41 PM
EPA METHOD 8260B: VOLATILES						Analyst: **LMM**
Benzene	ND	0.050		mg/Kg	1	10/24/2006
Toluene	ND	0.050		mg/Kg	1	10/24/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/24/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/24/2006
Naphthalene	ND	0.10		mg/Kg	1	10/24/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/24/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/24/2006
Acetone	ND	0.75		mg/Kg	1	10/24/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/24/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/24/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/24/2006
Bromoform	ND	0.050		mg/Kg	1	10/24/2006
Bromomethane	ND	0.10		mg/Kg	1	10/24/2006
2-Butanone	ND	0.50		mg/Kg	1	10/24/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/24/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/24/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
Chloroethane	ND	0.10		mg/Kg	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B4-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 11:15:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-20	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/24/2006
Chloromethane	ND	0.050		mg/Kg	1	10/24/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/24/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/24/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/24/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/24/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/24/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/24/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/24/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/24/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/24/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/24/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/24/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/24/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/24/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/24/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/24/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/24/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/24/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/24/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
Styrene	ND	0.050		mg/Kg	1	10/24/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/24/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/24/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/24/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/24/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/24/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/24/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/24/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B4-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 11:15:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-20	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/24/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/24/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/24/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/24/2006
Surr: 1,2-Dichloroethane-d4	76.1	62-127		%REC	1	10/24/2006
Surr: 4-Bromofluorobenzene	99.4	75.2-127		%REC	1	10/24/2006
Surr: Dibromofluoromethane	74.4	68.1-120		%REC	1	10/24/2006
Surr: Toluene-d8	98.2	74-119		%REC	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B5-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 3:35:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-21	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	130	10		mg/Kg	1	10/25/2006 3:19:25 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 3:19:25 PM
Surr: DNOP	86.2	61.7-135		%REC	1	10/25/2006 3:19:25 PM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	11/1/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	12		mg/Kg	5	11/6/2006 1:52:37 PM
Barium	250	0.50		mg/Kg	5	11/6/2006 1:52:37 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 1:52:37 PM
Chromium	10	1.5		mg/Kg	5	11/6/2006 1:52:37 PM
Lead	7.3	1.2		mg/Kg	5	11/6/2006 1:52:37 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 11:16:41 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 1:52:37 PM
EPA METHOD 8260B: VOLATILES						Analyst: **LMM**
Benzene	ND	0.050		mg/Kg	1	10/24/2006
Toluene	ND	0.050		mg/Kg	1	10/24/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/24/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/24/2006
Naphthalene	ND	0.10		mg/Kg	1	10/24/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/24/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/24/2006
Acetone	ND	0.75		mg/Kg	1	10/24/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/24/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/24/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/24/2006
Bromoform	ND	0.050		mg/Kg	1	10/24/2006
Bromomethane	ND	0.10		mg/Kg	1	10/24/2006
2-Butanone	ND	0.50		mg/Kg	1	10/24/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/24/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/24/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
Chloroethane	ND	0.10		mg/Kg	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B5-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 3:35:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-21	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/24/2006
Chloromethane	ND	0.050		mg/Kg	1	10/24/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/24/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/24/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/24/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/24/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/24/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/24/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/24/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/24/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/24/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/24/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/24/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/24/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/24/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/24/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/24/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/24/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/24/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/24/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
Styrene	ND	0.050		mg/Kg	1	10/24/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/24/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/24/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/24/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/24/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/24/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/24/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/24/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/24/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B5-2'
Lab Order:	0610228	**Collection Date:**	10/17/2006 3:35:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-21	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/24/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/24/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/24/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/24/2006
Surr: 1,2-Dichloroethane-d4	76.7	62-127		%REC	1	10/24/2006
Surr: 4-Bromofluorobenzene	97.0	75.2-127		%REC	1	10/24/2006
Surr: Dibromofluoromethane	77.8	68.1-120		%REC	1	10/24/2006
Surr: Toluene-d8	96.3	74-119		%REC	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B5-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 10:25:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-22	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/25/2006 3:54:35 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 3:54:35 PM
Surr: DNOP	85.1	61.7-135		%REC	1	10/25/2006 3:54:35 PM
EPA METHOD 7471: MERCURY						Analyst: MAP
Mercury	ND	0.033		mg/Kg	1	11/1/2006
EPA METHOD 6010B: SOIL METALS						Analyst: CMS
Arsenic	ND	12		mg/Kg	5	11/6/2006 1:55:40 PM
Barium	290	1.0		mg/Kg	10	11/6/2006 2:51:43 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 1:55:40 PM
Chromium	10	1.5		mg/Kg	5	11/6/2006 1:55:40 PM
Lead	7.1	1.2		mg/Kg	5	11/6/2006 1:55:40 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 11:19:12 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 1:55:40 PM
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Benzene	ND	0.050		mg/Kg	1	10/24/2006
Toluene	ND	0.050		mg/Kg	1	10/24/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/24/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/24/2006
Naphthalene	ND	0.10		mg/Kg	1	10/24/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/24/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/24/2006
Acetone	ND	0.75		mg/Kg	1	10/24/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/24/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/24/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/24/2006
Bromoform	ND	0.050		mg/Kg	1	10/24/2006
Bromomethane	ND	0.10		mg/Kg	1	10/24/2006
2-Butanone	ND	0.50		mg/Kg	1	10/24/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/24/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/24/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
Chloroethane	ND	0.10		mg/Kg	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B5-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 10:25:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-22	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/24/2006
Chloromethane	ND	0.050		mg/Kg	1	10/24/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/24/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/24/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/24/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/24/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/24/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/24/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/24/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/24/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/24/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/24/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/24/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/24/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/24/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/24/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/24/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/24/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/24/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/24/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
Styrene	ND	0.050		mg/Kg	1	10/24/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/24/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/24/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/24/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/24/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/24/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/24/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/24/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B5-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 10:25:00 AM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-22	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/24/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/24/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/24/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/24/2006
Surr: 1,2-Dichloroethane-d4	83.3	62-127		%REC	1	10/24/2006
Surr: 4-Bromofluorobenzene	102	75.2-127		%REC	1	10/24/2006
Surr: Dibromofluoromethane	82.4	68.1-120		%REC	1	10/24/2006
Surr: Toluene-d8	97.4	74-119		%REC	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B6-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 2:45:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-23	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/25/2006 4:29:37 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 4:29:37 PM
Surr: DNOP	87.2	61.7-135		%REC	1	10/25/2006 4:29:37 PM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	11/1/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	12		mg/Kg	5	11/6/2006 1:59:38 PM
Barium	230	0.50		mg/Kg	5	11/6/2006 1:59:38 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 1:59:38 PM
Chromium	13	1.5		mg/Kg	5	11/6/2006 1:59:38 PM
Lead	6.8	1.2		mg/Kg	5	11/6/2006 1:59:38 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 11:21:44 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 1:59:38 PM
EPA METHOD 8260B: VOLATILES						Analyst: **LMM**
Benzene	ND	0.050		mg/Kg	1	10/24/2006
Toluene	ND	0.050		mg/Kg	1	10/24/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/24/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/24/2006
Naphthalene	ND	0.10		mg/Kg	1	10/24/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/24/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/24/2006
Acetone	ND	0.75		mg/Kg	1	10/24/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/24/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/24/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/24/2006
Bromoform	ND	0.050		mg/Kg	1	10/24/2006
Bromomethane	ND	0.10		mg/Kg	1	10/24/2006
2-Butanone	ND	0.50		mg/Kg	1	10/24/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/24/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/24/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
Chloroethane	ND	0.10		mg/Kg	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B6-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 2:45:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-23	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/24/2006
Chloromethane	ND	0.050		mg/Kg	1	10/24/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/24/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/24/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/24/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/24/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/24/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/24/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/24/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/24/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/24/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/24/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/24/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/24/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/24/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/24/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/24/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/24/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/24/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/24/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
Styrene	ND	0.050		mg/Kg	1	10/24/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/24/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/24/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/24/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/24/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/24/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/24/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/24/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/24/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B6-2'
Lab Order:	0610228	**Collection Date:**	10/18/2006 2:45:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-23	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/24/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/24/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/24/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/24/2006
Surr: 1,2-Dichloroethane-d4	75.8	62-127		%REC	1	10/24/2006
Surr: 4-Bromofluorobenzene	95.9	75.2-127		%REC	1	10/24/2006
Surr: Dibromofluoromethane	74.5	68.1-120		%REC	1	10/24/2006
Surr: Toluene-d8	97.0	74-119		%REC	1	10/24/2006

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B6-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 4:05:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-24	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/25/2006 5:04:44 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/25/2006 5:04:44 PM
Surr: DNOP	86.0	61.7-135		%REC	1	10/25/2006 5:04:44 PM
EPA METHOD 7471: MERCURY						Analyst: **MAP**
Mercury	ND	0.033		mg/Kg	1	11/1/2006
EPA METHOD 6010B: SOIL METALS						Analyst: **CMS**
Arsenic	ND	12		mg/Kg	5	11/6/2006 2:03:42 PM
Barium	260	1.0		mg/Kg	10	11/6/2006 2:54:39 PM
Cadmium	ND	0.50		mg/Kg	5	11/6/2006 2:03:42 PM
Chromium	9.6	1.5		mg/Kg	5	11/6/2006 2:03:42 PM
Lead	5.8	1.2		mg/Kg	5	11/6/2006 2:03:42 PM
Selenium	ND	12		mg/Kg	5	11/7/2006 11:24:12 AM
Silver	ND	1.2		mg/Kg	5	11/6/2006 2:03:42 PM
EPA METHOD 8260B: VOLATILES						Analyst: **LMM**
Benzene	ND	0.050		mg/Kg	1	10/24/2006
Toluene	ND	0.050		mg/Kg	1	10/24/2006
Ethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	10/24/2006
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	10/24/2006
Naphthalene	ND	0.10		mg/Kg	1	10/24/2006
1-Methylnaphthalene	ND	0.20		mg/Kg	1	10/24/2006
2-Methylnaphthalene	ND	0.20		mg/Kg	1	10/24/2006
Acetone	ND	0.75		mg/Kg	1	10/24/2006
Bromobenzene	ND	0.050		mg/Kg	1	10/24/2006
Bromochloromethane	ND	0.050		mg/Kg	1	10/24/2006
Bromodichloromethane	ND	0.050		mg/Kg	1	10/24/2006
Bromoform	ND	0.050		mg/Kg	1	10/24/2006
Bromomethane	ND	0.10		mg/Kg	1	10/24/2006
2-Butanone	ND	0.50		mg/Kg	1	10/24/2006
Carbon disulfide	ND	0.50		mg/Kg	1	10/24/2006
Carbon tetrachloride	ND	0.10		mg/Kg	1	10/24/2006
Chlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
Chloroethane	ND	0.10		mg/Kg	1	10/24/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B6-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 4:05:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-24	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	0.050		mg/Kg	1	10/24/2006
Chloromethane	ND	0.050		mg/Kg	1	10/24/2006
2-Chlorotoluene	ND	0.050		mg/Kg	1	10/24/2006
4-Chlorotoluene	ND	0.050		mg/Kg	1	10/24/2006
cis-1,2-DCE	ND	0.050		mg/Kg	1	10/24/2006
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	10/24/2006
Dibromochloromethane	ND	0.050		mg/Kg	1	10/24/2006
Dibromomethane	ND	0.10		mg/Kg	1	10/24/2006
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	10/24/2006
1,1-Dichloroethane	ND	0.10		mg/Kg	1	10/24/2006
1,1-Dichloroethene	ND	0.050		mg/Kg	1	10/24/2006
1,2-Dichloropropane	ND	0.050		mg/Kg	1	10/24/2006
1,3-Dichloropropane	ND	0.050		mg/Kg	1	10/24/2006
2,2-Dichloropropane	ND	0.10		mg/Kg	1	10/24/2006
1,1-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
Hexachlorobutadiene	ND	0.10		mg/Kg	1	10/24/2006
2-Hexanone	ND	0.50		mg/Kg	1	10/24/2006
Isopropylbenzene	ND	0.050		mg/Kg	1	10/24/2006
4-Isopropyltoluene	ND	0.050		mg/Kg	1	10/24/2006
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	10/24/2006
Methylene chloride	ND	0.15		mg/Kg	1	10/24/2006
n-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
n-Propylbenzene	ND	0.050		mg/Kg	1	10/24/2006
sec-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
Styrene	ND	0.050		mg/Kg	1	10/24/2006
tert-Butylbenzene	ND	0.050		mg/Kg	1	10/24/2006
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/24/2006
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	10/24/2006
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	10/24/2006
trans-1,2-DCE	ND	0.050		mg/Kg	1	10/24/2006
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	10/24/2006
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	10/24/2006
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	10/24/2006
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	10/24/2006
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	10/24/2006
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	10/24/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	B6-5'
Lab Order:	0610228	**Collection Date:**	10/18/2006 4:05:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-24	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	0.050		mg/Kg	1	10/24/2006
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	10/24/2006
Vinyl chloride	ND	0.050		mg/Kg	1	10/24/2006
Xylenes, Total	ND	0.10		mg/Kg	1	10/24/2006
Surr: 1,2-Dichloroethane-d4	75.4	62-127		%REC	1	10/24/2006
Surr: 4-Bromofluorobenzene	96.9	75.2-127		%REC	1	10/24/2006
Surr: Dibromofluoromethane	74.7	68.1-120		%REC	1	10/24/2006
Surr: Toluene-d8	94.3	74-119		%REC	1	10/24/2006

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	EB101806
Lab Order:	0610228	**Collection Date:**	10/18/2006 4:30:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-25	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/25/2006 12:21:37 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	10/25/2006 12:21:37 AM
Surr: DNOP	113	58-140		%REC	1	10/25/2006 12:21:37 AM
EPA METHOD 7470: MERCURY						Analyst: CMS
Mercury	ND	0.00020		mg/L	1	11/1/2006
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	10/24/2006 11:00:03 AM
Barium	ND	0.020		mg/L	1	10/24/2006 11:00:03 AM
Cadmium	ND	0.0020		mg/L	1	10/24/2006 11:00:03 AM
Chromium	ND	0.0060		mg/L	1	10/24/2006 11:00:03 AM
Lead	ND	0.0050		mg/L	1	10/24/2006 11:00:03 AM
Selenium	ND	0.050		mg/L	1	10/24/2006 11:00:03 AM
Silver	ND	0.0050		mg/L	1	10/24/2006 11:00:03 AM
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Benzene	ND	1.0		µg/L	1	10/20/2006
Toluene	ND	1.0		µg/L	1	10/20/2006
Ethylbenzene	ND	1.0		µg/L	1	10/20/2006
Methyl tert-butyl ether (MTBE)	ND	1.5		µg/L	1	10/20/2006
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	10/20/2006
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	10/20/2006
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/20/2006
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/20/2006
Naphthalene	ND	2.0		µg/L	1	10/20/2006
1-Methylnaphthalene	ND	4.0		µg/L	1	10/20/2006
2-Methylnaphthalene	ND	4.0		µg/L	1	10/20/2006
Acetone	ND	10		µg/L	1	10/20/2006
Bromobenzene	ND	1.0		µg/L	1	10/20/2006
Bromochloromethane	ND	1.0		µg/L	1	10/20/2006
Bromodichloromethane	ND	1.0		µg/L	1	10/20/2006
Bromoform	ND	1.0		µg/L	1	10/20/2006
Bromomethane	ND	2.0		µg/L	1	10/20/2006
2-Butanone	ND	10		µg/L	1	10/20/2006
Carbon disulfide	ND	10		µg/L	1	10/20/2006
Carbon Tetrachloride	ND	2.0		µg/L	1	10/20/2006
Chlorobenzene	ND	1.0		µg/L	1	10/20/2006
Chloroethane	ND	2.0		µg/L	1	10/20/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	EB101806
Lab Order:	0610228	**Collection Date:**	10/18/2006 4:30:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-25	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	1.0		µg/L	1	10/20/2006
Chloromethane	ND	1.0		µg/L	1	10/20/2006
2-Chlorotoluene	ND	1.0		µg/L	1	10/20/2006
4-Chlorotoluene	ND	1.0		µg/L	1	10/20/2006
cis-1,2-DCE	ND	1.0		µg/L	1	10/20/2006
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/20/2006
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/20/2006
Dibromochloromethane	ND	1.0		µg/L	1	10/20/2006
Dibromomethane	ND	2.0		µg/L	1	10/20/2006
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/20/2006
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/20/2006
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/20/2006
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/20/2006
1,1-Dichloroethane	ND	2.0		µg/L	1	10/20/2006
1,1-Dichloroethene	ND	1.0		µg/L	1	10/20/2006
1,2-Dichloropropane	ND	1.0		µg/L	1	10/20/2006
1,3-Dichloropropane	ND	1.0		µg/L	1	10/20/2006
2,2-Dichloropropane	ND	2.0		µg/L	1	10/20/2006
1,1-Dichloropropene	ND	1.0		µg/L	1	10/20/2006
Hexachlorobutadiene	ND	2.0		µg/L	1	10/20/2006
2-Hexanone	ND	10		µg/L	1	10/20/2006
Isopropylbenzene	ND	1.0		µg/L	1	10/20/2006
4-Isopropyltoluene	ND	1.0		µg/L	1	10/20/2006
4-Methyl-2-pentanone	ND	10		µg/L	1	10/20/2006
Methylene Chloride	ND	3.0		µg/L	1	10/20/2006
n-Butylbenzene	ND	1.0		µg/L	1	10/20/2006
n-Propylbenzene	ND	1.0		µg/L	1	10/20/2006
sec-Butylbenzene	ND	2.0		µg/L	1	10/20/2006
Styrene	ND	1.5		µg/L	1	10/20/2006
tert-Butylbenzene	ND	1.0		µg/L	1	10/20/2006
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/20/2006
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	10/20/2006
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/20/2006
trans-1,2-DCE	ND	1.0		µg/L	1	10/20/2006
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/20/2006
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/20/2006
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/20/2006
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/20/2006
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/20/2006
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/20/2006

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	EB101806
Lab Order:	0610228	**Collection Date:**	10/18/2006 4:30:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-25	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	1.0		µg/L	1	10/20/2006
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/20/2006
Vinyl chloride	ND	1.0		µg/L	1	10/20/2006
Xylenes, Total	ND	3.0		µg/L	1	10/20/2006
Surr: 1,2-Dichloroethane-d4	87.9	69.9-130		%REC	1	10/20/2006
Surr: 4-Bromofluorobenzene	102	75-139		%REC	1	10/20/2006
Surr: Dibromofluoromethane	88.3	57.3-135		%REC	1	10/20/2006
Surr: Toluene-d8	105	81.9-122		%REC	1	10/20/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	EB101706
Lab Order:	0610228	**Collection Date:**	10/17/2006 5:20:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-26	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/25/2006 12:56:23 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	10/25/2006 12:56:23 AM
Surr: DNOP	112	58-140		%REC	1	10/25/2006 12:56:23 AM
EPA METHOD 7470: MERCURY						Analyst: CMS
Mercury	ND	0.00020		mg/L	1	11/1/2006
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	10/24/2006 11:03:04 AM
Barium	ND	0.020		mg/L	1	10/24/2006 11:03:04 AM
Cadmium	ND	0.0020		mg/L	1	10/24/2006 11:03:04 AM
Chromium	ND	0.0060		mg/L	1	10/24/2006 11:03:04 AM
Lead	ND	0.0050		mg/L	1	10/24/2006 11:03:04 AM
Selenium	ND	0.050		mg/L	1	10/24/2006 11:03:04 AM
Silver	ND	0.0050		mg/L	1	10/24/2006 11:03:04 AM
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Benzene	ND	1.0		µg/L	1	10/20/2006
Toluene	ND	1.0		µg/L	1	10/20/2006
Ethylbenzene	ND	1.0		µg/L	1	10/20/2006
Methyl tert-butyl ether (MTBE)	ND	1.5		µg/L	1	10/20/2006
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	10/20/2006
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	10/20/2006
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/20/2006
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/20/2006
Naphthalene	ND	2.0		µg/L	1	10/20/2006
1-Methylnaphthalene	ND	4.0		µg/L	1	10/20/2006
2-Methylnaphthalene	ND	4.0		µg/L	1	10/20/2006
Acetone	ND	10		µg/L	1	10/20/2006
Bromobenzene	ND	1.0		µg/L	1	10/20/2006
Bromochloromethane	ND	1.0		µg/L	1	10/20/2006
Bromodichloromethane	ND	1.0		µg/L	1	10/20/2006
Bromoform	ND	1.0		µg/L	1	10/20/2006
Bromomethane	ND	2.0		µg/L	1	10/20/2006
2-Butanone	ND	10		µg/L	1	10/20/2006
Carbon disulfide	ND	10		µg/L	1	10/20/2006
Carbon Tetrachloride	ND	2.0		µg/L	1	10/20/2006
Chlorobenzene	ND	1.0		µg/L	1	10/20/2006
Chloroethane	ND	2.0		µg/L	1	10/20/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	EB101706
Lab Order:	0610228	**Collection Date:**	10/17/2006 5:20:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-26	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Chloroform	ND	1.0		µg/L	1	10/20/2006
Chloromethane	ND	1.0		µg/L	1	10/20/2006
2-Chlorotoluene	ND	1.0		µg/L	1	10/20/2006
4-Chlorotoluene	ND	1.0		µg/L	1	10/20/2006
cis-1,2-DCE	ND	1.0		µg/L	1	10/20/2006
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/20/2006
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/20/2006
Dibromochloromethane	ND	1.0		µg/L	1	10/20/2006
Dibromomethane	ND	2.0		µg/L	1	10/20/2006
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/20/2006
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/20/2006
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/20/2006
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/20/2006
1,1-Dichloroethane	ND	2.0		µg/L	1	10/20/2006
1,1-Dichloroethene	ND	1.0		µg/L	1	10/20/2006
1,2-Dichloropropane	ND	1.0		µg/L	1	10/20/2006
1,3-Dichloropropane	ND	1.0		µg/L	1	10/20/2006
2,2-Dichloropropane	ND	2.0		µg/L	1	10/20/2006
1,1-Dichloropropene	ND	1.0		µg/L	1	10/20/2006
Hexachlorobutadiene	ND	2.0		µg/L	1	10/20/2006
2-Hexanone	ND	10		µg/L	1	10/20/2006
Isopropylbenzene	ND	1.0		µg/L	1	10/20/2006
4-Isopropyltoluene	ND	1.0		µg/L	1	10/20/2006
4-Methyl-2-pentanone	ND	10		µg/L	1	10/20/2006
Methylene Chloride	ND	3.0		µg/L	1	10/20/2006
n-Butylbenzene	ND	1.0		µg/L	1	10/20/2006
n-Propylbenzene	ND	1.0		µg/L	1	10/20/2006
sec-Butylbenzene	ND	2.0		µg/L	1	10/20/2006
Styrene	ND	1.5		µg/L	1	10/20/2006
tert-Butylbenzene	ND	1.0		µg/L	1	10/20/2006
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/20/2006
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	10/20/2006
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/20/2006
trans-1,2-DCE	ND	1.0		µg/L	1	10/20/2006
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/20/2006
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/20/2006
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/20/2006
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/20/2006
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/20/2006
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/20/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *14-Nov-06*

CLIENT:	Giant Refining Co	**Client Sample ID:**	EB101706
Lab Order:	0610228	**Collection Date:**	10/17/2006 5:20:00 PM
Project:	Fan Out Area Sampling	**Date Received:**	10/20/2006
Lab ID:	0610228-26	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: LMM
Trichlorofluoromethane	ND	1.0		µg/L	1	10/20/2006
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/20/2006
Vinyl chloride	ND	1.0		µg/L	1	10/20/2006
Xylenes, Total	ND	3.0		µg/L	1	10/20/2006
Surr: 1,2-Dichloroethane-d4	84.1	69.9-130		%REC	1	10/20/2006
Surr: 4-Bromofluorobenzene	110	75-139		%REC	1	10/20/2006
Surr: Dibromofluoromethane	84.9	57.3-135		%REC	1	10/20/2006
Surr: Toluene-d8	101	81.9-122		%REC	1	10/20/2006

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

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ANALYTICAL SUMMARY REPORT

November 08, 2006

Anne Thorne
Hall Environmental-Albuquerque
4901 Hawkins NE
Albuquerque, NM 87109

Workorder No.: B06101716

Project Name: 0610228

Energy Laboratories Inc received the following 25 samples from Hall Environmental-Albuquerque on 10/24/2006 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B06101716-001	0610228-01C-B7-2 ft	10/17/06 15:45	10/24/06	Soil	Total Cyanide Cyanide Distillation
B06101716-002	0610228-02C-B7-5 ft	10/18/06 9:50	10/24/06	Soil	Same As Above
B06101716-003	0610228-03C-B8-2 ft	10/17/06 14:15	10/24/06	Soil	Same As Above
B06101716-004	0610228-04C-B8-5 ft	10/17/06 16:50	10/24/06	Soil	Same As Above
B06101716-005	0610228-05C-B9-2 ft	10/17/06 13:45	10/24/06	Soil	Same As Above
B06101716-006	0610228-06C-B9-5 ft	10/17/06 16:05	10/24/06	Soil	Same As Above
B06101716-007	0610228-07C-B10-2 ft	10/17/06 15:05	10/24/06	Soil	Same As Above
B06101716-008	0610228-08C-B10-5 ft	10/18/06 9:15	10/24/06	Soil	Same As Above
B06101716-009	0610228-09C-MS	10/18/06 0:00	10/24/06	Soil	Same As Above
B06101716-010	0610228-10C-MSD	10/18/06 0:00	10/24/06	Soil	Same As Above
B06101716-011	0610228-11C-BD101806	10/18/06 0:00	10/24/06	Soil	Same As Above
B06101716-012	0610228-13C-B1-2 ft	10/18/06 8:55	10/24/06	Soil	Same As Above
B06101716-013	0610228-14C-B1-5 ft	10/18/06 11:40	10/24/06	Soil	Same As Above
B06101716-014	0610228-15C-B2-2 ft	10/18/06 14:00	10/24/06	Soil	Same As Above
B06101716-015	0610228-16C-B2-5 ft	10/18/06 15:10	10/24/06	Soil	Same As Above
B06101716-016	0610228-17C-B3-2 ft	10/18/06 10:50	10/24/06	Soil	Same As Above
B06101716-017	0610228-18C-B3-5 ft	10/18/06 12:15	10/24/06	Soil	Same As Above
B06101716-018	0610228-19C-B4-2 ft	10/18/06 8:40	10/24/06	Soil	Same As Above
B06101716-019	0610228-20C-B4-5 ft	10/18/06 11:15	10/24/06	Soil	Same As Above
B06101716-020	0610228-21C-B5-2 ft	10/17/06 15:35	10/24/06	Soil	Same As Above
B06101716-021	0610228-22C-B5-5 ft	10/18/06 10:25	10/24/06	Soil	Same As Above
B06101716-022	0610228-23C-B6-2 ft	10/18/06 14:45	10/24/06	Soil	Same As Above
B06101716-023	0610228-24C-B6-5 ft	10/18/06 16:05	10/24/06	Soil	Same As Above
B06101716-024	0610228-25C-EB101806	10/18/06 16:30	10/24/06	Aqueous	Cyanide, Total Manual Distillation
B06101716-025	0610228-026C EB101706	10/17/06 17:20	10/24/06	Aqueous	Same As Above

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There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except if noted in report comments or the Case Narrative.

If you have any questions regarding these tests results, please call.

Report Approved By:

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LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental-Albuquerque	Report Date:	11/08/06
Project:	0610228	Collection Date:	10/17/06 15:45
Lab ID:	B06101716-001	DateReceived:	10/24/06
Client Sample ID:	0610228-01C-B7-2 ft	Matrix:	Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:05 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental-Albuquerque	Report Date:	11/08/06
Project:	0610228	Collection Date:	10/18/06 09:50
Lab ID:	B06101716-002	DateReceived:	10/24/06
Client Sample ID:	0610228-02C-B7-5 ft	Matrix:	Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:12 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental-Albuquerque	Report Date:	11/08/06
Project:	0610228	Collection Date:	10/17/06 14:15
Lab ID:	B06101716-003	DateReceived:	10/24/06
Client Sample ID:	0610228-03C-B8-2 ft	Matrix:	Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:14 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: 0610228
Lab ID: B06101716-004
Client Sample ID: 0610228-04C-BB-5 ft

Report Date: 11/08/06
Collection Date: 10/17/06 16:50
DateReceived: 10/24/06
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:16 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental-Albuquerque	Report Date:	11/08/06
Project:	0610228	Collection Date:	10/17/06 13:45
Lab ID:	B06101716-005	DateReceived:	10/24/06
Client Sample ID:	0610228-05C-B9-2 ft	Matrix:	Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:18 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental-Albuquerque	Report Date:	11/08/06
Project:	0610228	Collection Date:	10/17/06 16:05
Lab ID:	B06101716-006	DateReceived:	10/24/06
Client Sample ID:	0610228-06C-B9-5 ft	Matrix:	Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:19 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental-Albuquerque	Report Date:	11/08/06
Project:	0610228	Collection Date:	10/17/06 15:05
Lab ID:	B06101716-007	DateReceived:	10/24/06
Client Sample ID:	0610228-07C-B10-2 ft	Matrix:	Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:21 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: 0610228
Lab ID: B06101716-008
Client Sample ID: 0610228-08C-B10-5 ft

Report Date: 11/08/06
Collection Date: 10/18/06 09:15
DateReceived: 10/24/06
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:23 / kjp

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: 0610228
Lab ID: B06101716-009
Client Sample ID: 0610228-09C-MS

Report Date: 11/08/06
Collection Date: 10/18/06
DateReceived: 10/24/06
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:25 / kjp

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: 0610228
Lab ID: B06101716-010
Client Sample ID: 0610228-10C-MSD

Report Date: 11/08/06
Collection Date: 10/18/06
DateReceived: 10/24/06
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/26/06 15:42 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental-Albuquerque	Report Date:	11/08/06
Project:	0610228	Collection Date:	10/18/06
Lab ID:	B06101716-011	DateReceived:	10/24/06
Client Sample ID:	0610228-11C-BD101806	Matrix:	Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/26/06 15:43 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental-Albuquerque	Report Date:	11/08/06
Project:	0610228	Collection Date:	10/18/06 08:55
Lab ID:	B06101716-012	DateReceived:	10/24/06
Client Sample ID:	0610228-13C-B1-2 ft	Matrix:	Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/26/06 15:45 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental-Albuquerque	Report Date:	11/08/06
Project:	0610228	Collection Date:	10/18/06 11:40
Lab ID:	B06101716-013	DateReceived:	10/24/06
Client Sample ID:	0610228-14C-B1-5 ft	Matrix:	Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:38 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: 0610228
Lab ID: B06101716-014
Client Sample ID: 0610228-15C-B2-2 ft

Report Date: 11/08/06
Collection Date: 10/18/06 14:00
DateReceived: 10/24/06
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:40 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: 0610228
Lab ID: B06101716-015
Client Sample ID: 0610228-16C-B2-5 ft

Report Date: 11/08/06
Collection Date: 10/18/06 15:10
DateReceived: 10/24/06
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:41 / kjp

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: 0610228
Lab ID: B06101716-016
Client Sample ID: 0610228-17C-B3-2 ft

Report Date: 11/08/06
Collection Date: 10/18/06 10:50
DateReceived: 10/24/06
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:43 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: 0610228
Lab ID: B06101716-017
Client Sample ID: 0610228-18C-B3-5 ft

Report Date: 11/08/06
Collection Date: 10/18/06 12:15
DateReceived: 10/24/06
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:45 / kjp

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental-Albuquerque	Report Date:	11/08/06
Project:	0610228	Collection Date:	10/18/06 08:40
Lab ID:	B06101716-018	DateReceived:	10/24/06
Client Sample ID:	0610228-19C-B4-2 ft	Matrix:	Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 15:47 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: 0610228
Lab ID: B06101716-019
Client Sample ID: 0610228-20C-B4-5 ft

Report Date: 11/08/06
Collection Date: 10/18/06 11:15
DateReceived: 10/24/06
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 16:01 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: 0610228
Lab ID: B06101716-020
Client Sample ID: 0610228-21C-B5-2 ft

Report Date: 11/08/06
Collection Date: 10/17/06 15:35
DateReceived: 10/24/06
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 16:03 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental-Albuquerque	Report Date:	11/08/06
Project:	0610228	Collection Date:	10/18/06 10:25
Lab ID:	B06101716-021	DateReceived:	10/24/06
Client Sample ID:	0610228-22C-B5-5 ft	Matrix:	Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 16:10 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental-Albuquerque	Report Date:	11/08/06
Project:	0610228	Collection Date:	10/18/06 14:45
Lab ID:	B06101716-022	DateReceived:	10/24/06
Client Sample ID:	0610228-23C-B6-2 ft	Matrix:	Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 16:12 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: 0610228
Lab ID: B06101716-023
Client Sample ID: 0610228-24C-B6-5 ft

Report Date: 11/08/06
Collection Date: 10/18/06 16:05
DateReceived: 10/24/06
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CYANIDE							
Cyanide, Total	ND	mg/kg		0.5		SW9012	10/25/06 16:14 / kjp

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client:	Hall Environmental-Albuquerque	Report Date:	11/08/06
Project:	0610228	Collection Date:	10/18/06 16:30
Lab ID:	B06101716-024	DateReceived:	10/24/06
Client Sample ID:	0610228-25C-EB101806	Matrix:	Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
INORGANICS							
Cyanide, Total Manual Distillation	ND	mg/L		0.005		E335.4	10/26/06 11:29 / kjp

Report Definitions: RL - Analyte reporting limit. QCL - Quality control limit. MCL - Maximum contaminant level. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental-Albuquerque
Project: 0610228
Lab ID: B06101716-025
Client Sample ID: 0610228-026C EB101706

Report Date: 11/08/06
Collection Date: 10/17/06 17:20
DateReceived: 10/24/06
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
INORGANICS							
Cyanide, Total Manual Distillation	ND	mg/L		0.005		E335.4	10/26/06 11:31 / kjp

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: Hall Environmental-Albuquerque
Project: 0610228

Report Date: 11/02/06
Work Order: B06101716

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E335.4									Batch: A2006-10-26_4_CN__01
Sample ID: LFB-4	Laboratory Fortified Blank				Run: AUTOAN201-B_061026A				10/26/06 11:13
Cyanide, Total Manual Distillation	0.101	mg/L	0.0050	99	90	110			
Sample ID: MBLK-5	Method Blank				Run: AUTOAN201-B_061026A				10/26/06 11:14
Cyanide, Total Manual Distillation	0.002	mg/L	0.001						
Sample ID: B06101716-025AMS	Sample Matrix Spike				Run: AUTOAN201-B_061026A				10/26/06 11:33
Cyanide, Total Manual Distillation	0.108	mg/L	0.0050	108	90	110			
Sample ID: B06101716-025AMSD	Sample Matrix Spike Duplicate				Run: AUTOAN201-B_061026A				10/26/06 11:35
Cyanide, Total Manual Distillation	0.108	mg/L	0.0050	108	90	110	0.5	10	
Method: SW9012									Batch: 23907
Sample ID: B06101716-001AMS	Sample Matrix Spike				Run: AUTOAN201-B_061025A				10/25/06 15:07
Cyanide, Total	4.75	mg/kg	0.50	95	50	150			
Sample ID: B06101716-001AMSD	Sample Matrix Spike Duplicate				Run: AUTOAN201-B_061025A				10/25/06 15:09
Cyanide, Total	4.73	mg/kg	0.50	95	50	150	0.5	30	
Sample ID: B06101716-018AMS	Sample Matrix Spike				Run: AUTOAN201-B_061025A				10/25/06 15:49
Cyanide, Total	4.50	mg/kg	0.50	90	50	150			
Sample ID: B06101716-018AMSD	Sample Matrix Spike Duplicate				Run: AUTOAN201-B_061025A				10/25/06 15:57
Cyanide, Total	3.60	mg/kg	0.50	72	50	150	22	30	
Method: SW9012									Batch: 23932
Sample ID: B06101716-012AMS	Sample Matrix Spike				Run: AUTOAN201-B_061026B				10/26/06 15:47
Cyanide, Total	4.60	mg/kg	0.50	92	50	150			
Sample ID: B06101716-012AMSD	Sample Matrix Spike Duplicate				Run: AUTOAN201-B_061026B				10/26/06 15:49
Cyanide, Total	4.72	mg/kg	0.50	94	50	150	2.5	30	
Sample ID: MBLK-35	Method Blank				Run: AUTOAN201-B_061026B				10/26/06 16:33
Cyanide, Total	ND	mg/kg	0.1						
Sample ID: LCS-36	Laboratory Control Sample				Run: AUTOAN201-B_061026B				10/26/06 16:35
Cyanide, Total	8.05	mg/kg	0.50	107	90	110			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

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Energy Laboratories Inc

Sample Receipt Checklist

Client Name Hall Environmental-Albuquerque

Date and Time Received: 10/24/2006

Work Order Number B06101716

Received by klm

Login completed by: Krystal McDonald (Signature) 10/24/2006 (Date)

Reviewed by Denise Ruby (Initials) 10/25/2006 (Date)

Carrier name FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☑	No ☐	Not Present ☐
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☐	No ☑	14 °C
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Adjusted? _____ Checked by _____

Contact and Corrective Action Comments:
None

Hall Environmental Analysis Laboratory, In
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109-4372
TEL: *5053453975* FAX: *5053454107*

CHAIN-OF-CUSTODY RECORD

Subcontractor:

Energy Labs
2393 Salt Creek Highway
Casper, WY 82601

TEL: (888) 235-0515
FAX: (307) 234-1639
Acct #:

Project Name 0610228

23-Oct-06

Lab ID	Client Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests
0610228-01C	B7-2'	Soil	10/17/2006 3:45:00 PM	4OZGU	SEE BELOW B0610171641
0610228-02C	B7-5'	Soil	10/18/2006 9:50:00 AM	4OZGU	SEE BELOW 2
0610228-03C	B8-2'	Soil	10/17/2006 2:15:00 PM	4OZGU	SEE BELOW 3
0610228-04C	B8-5'	Soil	10/17/2006 4:50:00 PM	4OZGU	SEE BELOW 4
0610228-05C	B9-2'	Soil	10/17/2006 1:45:00 PM	4OZGU	SEE BELOW 5
0610228-06C	B9-5'	Soil	10/17/2006 4:05:00 PM	4OZGU	SEE BELOW 6
0610228-07C	B10-2'	Soil	10/17/2006 3:05:00 PM	4OZGU	SEE BELOW 7
0610228-08C	B10-5'	Soil	10/18/2006 9:15:00 AM	4OZGU	SEE BELOW 8

ANALYTICAL COMMENTS: **TOTAL CYANIDE**

Comments: Standard TAT. Please fax (505) 345-4107 results when completed, or email to lab@hallenvironmental.com. Thank you.

		Date/Time			Date/Time
Relinquished by:	[signature]	1630 10/23/06	Received by:		
Relinquished by:			Received by:	[signature]	10/24/06 09

14° Fed Ex Ars Overnight

ıIall Environmental Analysis Laboratory, In
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109-4372
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CHAIN-OF-CUSTODY RECORD

Subcontractor:

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TEL: (888) 235-0515
FAX: (307) 234-1639
Acct #:

Project Name 0610228

23-Oct-06

Lab ID	Client Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests	
0610228-09C	MS	Soil	10/18/2006	4OZGU	SEE BELOW	BUL101714-9
0610228-10C	MSD	Soil	10/18/2006	4OZGU	SEE BELOW	10
0610228-11C	BD101806	Soil	10/18/2006	4OZGU	SEE BELOW	11
0610228-13C	B1-2'	Soil	10/18/2006 8:55:00 AM	4OZGU	SEE BELOW	12
0610228-14C	B1-5'	Soil	10/18/2006 11:40:00 AM	4OZGU	SEE BELOW	13
0610228-15C	B2-2'	Soil	10/18/2006 2:00:00 PM	4OZGU	SEE BELOW	14
0610228-16C	B2-5'	Soil	10/18/2006 3:10:00 PM	4OZGU	SEE BELOW	15
0610228-17C	B3-2'	Soil	10/18/2006 10:50:00 AM	4OZGU	SEE BELOW	16

ANALYTICAL COMMENTS: **TOTAL CYANIDE**

Comments: Standard TAT. Please fax (505) 345-4107 results when completed, or email to lab@hallenvironmental.com. Thank you.

		Date/Time			Date/Time
Relinquished by:	[signature]	10/23/06 1630	Received by:	[signature]	10/24/06 0900
Relinquished by:			Received by:		

Hall Environmental Analysis Laboratory, In
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TEL: *5053453975* FAX: *5053454107*

CHAIN-OF-CUSTODY RECORD

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Casper, WY 82601

TEL: (888) 235-0515
FAX: (307) 234-1639
Acct #:

Project Name 0610228

23-Oct-06

Lab ID	Client Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests
0610228-18C	B3-5'	Soil	10/18/2006 12:15:00 PM	4OZGU	SEE BELOW B061017 16-17
0610228-19C	B4-2'	Soil	10/18/2006 8:40:00 AM	4OZGU	SEE BELOW 18
0610228-20C	B4-5'	Soil	10/18/2006 11:15:00 AM	4OZGU	SEE BELOW 19
0610228-21C	B5-2'	Soil	10/17/2006 3:35:00 PM	4OZGU	SEE BELOW 20
0610228-22C	B5-5'	Soil	10/18/2006 10:25:00 AM	4OZGU	SEE BELOW ~~21~~
0610228-23C	B6-2'	Soil	10/18/2006 2:45:00 PM	4OZGU	SEE BELOW 22
0610228-24C	B6-5'	Soil	10/18/2006 4:05:00 PM	4OZGU	SEE BELOW 23
0610228-25C	EB101806	Aqueous	10/18/2006 4:30:00 PM	250HDPE-NAOH	SEE BELOW 24

ANALYTICAL COMMENTS: **TOTAL CYANIDE**

Comments: Standard TAT. Please fax (505) 345-4107 results when completed, or email to lab@hallenvironmental.com. Thank you.

		Date/Time		Date/Time
Relinquished by:		1650 10/23/06	Received by:	
Relinquished by:			Received by:	10/24/06 0900

Hall Environmental Analysis Laboratory, In
4901 Hawkins NE, Suite D
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TEL: *5053453975* FAX: *5053454107*

CHAIN-OF-CUSTODY RECORD

Subcontractor:

Energy Labs
2393 Salt Creek Highway
Casper, WY 82601

TEL: (888) 235-0515
FAX: (307) 234-1639
Acct #:

Project Name 0610228

23-Oct-06

Lab ID	Client Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests
0610228-26C	EB101706	Aqueous	10/17/2006 5:20:00 PM	250HDPE-NAOH	SEE BELOW B0610171G-26 25

ANALYTICAL COMMENTS: **TOTAL CYANIDE**

Comments: Standard TAT. Please fax (505) 345-4107 results when completed, or email to lab@hallenvironmental.com. Thank you.

		Date/Time		Date/Time
Relinquished by:		10/23/06 1630	**Received by:**	
Relinquished by:			**Received by:**	10/24/06 0900

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area Sampling

Work Order: 0610228

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8015									
Sample ID: 0610228-08BMSD		*MSD*			Batch ID:	**11545**	Analysis Date:	10/25/2006 7:19:14 AM	
Diesel Range Organics (DRO)	57.02	mg/Kg	10	114	67.4	117	0.0666	17.4	
Sample ID: MB-11532		*MBLK*			Batch ID:	**11532**	Analysis Date:	10/20/2006 7:33:32 AM	
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: MB-11545		*MBLK*			Batch ID:	**11545**	Analysis Date:	10/25/2006 3:50:23 AM	
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-11532		*LCS*			Batch ID:	**11532**	Analysis Date:	10/20/2006 8:08:19 AM	
Diesel Range Organics (DRO)	36.76	mg/Kg	10	73.5	64.6	116			
Sample ID: LCS-11545		*LCS*			Batch ID:	**11545**	Analysis Date:	10/25/2006 5:00:02 AM	
Diesel Range Organics (DRO)	47.19	mg/Kg	10	94.4	64.6	116			
Sample ID: LCSD-11532		*LCSD*			Batch ID:	**11532**	Analysis Date:	10/20/2006 8:43:09 AM	
Diesel Range Organics (DRO)	42.42	mg/Kg	10	84.8	64.6	116	14.3	17.4	
Sample ID: LCSD-11545		*LCSD*			Batch ID:	**11545**	Analysis Date:	10/25/2006 5:34:48 AM	
Diesel Range Organics (DRO)	47.58	mg/Kg	10	95.2	64.6	116	0.827	17.4	
Sample ID: 0610228-08BMS		*MS*			Batch ID:	**11545**	Analysis Date:	10/25/2006 6:44:22 AM	
Diesel Range Organics (DRO)	57.06	mg/Kg	10	114	67.4	117			
Method: SW8015									
Sample ID: MB-11551		*MBLK*			Batch ID:	**11551**	Analysis Date:	10/24/2006 8:06:50 AM	
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-11551		*LCS*			Batch ID:	**11551**	Analysis Date:	10/24/2006 8:41:42 AM	
Diesel Range Organics (DRO)	6.261	mg/L	1.0	125	74	157			
Sample ID: LCSD-11551		*LCSD*			Batch ID:	**11551**	Analysis Date:	10/24/2006 9:16:44 AM	
Diesel Range Organics (DRO)	6.521	mg/L	1.0	130	74	157	4.07	23	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area Sampling

Work Order: 0610228

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8270C									
Sample ID: MB-11608		*MBLK*			Batch ID:	11608	Analysis Date:		11/1/2006
Acenaphthene	ND	mg/Kg	0.20						
Acenaphthylene	ND	mg/Kg	0.20						
Aniline	ND	mg/Kg	0.20						
Anthracene	ND	mg/Kg	0.20						
Azobenzene	ND	mg/Kg	0.20						
Benz(a)anthracene	ND	mg/Kg	0.25						
Benzo(a)pyrene	ND	mg/Kg	0.20						
Benzo(b)fluoranthene	ND	mg/Kg	0.20						
Benzo(g,h,i)perylene	ND	mg/Kg	0.30						
Benzo(k)fluoranthene	ND	mg/Kg	0.50						
Benzoic acid	ND	mg/Kg	0.50						
Benzyl alcohol	ND	mg/Kg	1.0						
Bis(2-chloroethoxy)methane	ND	mg/Kg	0.50						
Bis(2-chloroethyl)ether	ND	mg/Kg	0.25						
Bis(2-chloroisopropyl)ether	ND	mg/Kg	0.50						
Bis(2-ethylhexyl)phthalate	ND	mg/Kg	0.20						
4-Bromophenyl phenyl ether	ND	mg/Kg	0.25						
Butyl benzyl phthalate	ND	mg/Kg	0.20						
Carbazole	ND	mg/Kg	0.20						
4-Chloro-3-methylphenol	ND	mg/Kg	0.20						
4-Chloroaniline	ND	mg/Kg	0.20						
2-Chloronaphthalene	ND	mg/Kg	0.20						
2-Chlorophenol	ND	mg/Kg	0.20						
4-Chlorophenyl phenyl ether	ND	mg/Kg	0.20						
Chrysene	ND	mg/Kg	0.20						
Di-n-butyl phthalate	ND	mg/Kg	0.50						
Di-n-octyl phthalate	ND	mg/Kg	0.50						
Dibenz(a,h)anthracene	ND	mg/Kg	0.25						
Dibenzofuran	ND	mg/Kg	0.50						
1,2-Dichlorobenzene	ND	mg/Kg	0.20						
1,3-Dichlorobenzene	ND	mg/Kg	0.20						
1,4-Dichlorobenzene	ND	mg/Kg	0.20						
3,3'-Dichlorobenzidine	ND	mg/Kg	0.20						
Diethyl phthalate	ND	mg/Kg	0.20						
Dimethyl phthalate	ND	mg/Kg	0.20						
2,4-Dichlorophenol	ND	mg/Kg	0.20						
2,4-Dimethylphenol	ND	mg/Kg	0.20						
4,6-Dinitro-2-methylphenol	ND	mg/Kg	0.50						
2,4-Dinitrophenol	ND	mg/Kg	0.50						
2,4-Dinitrotoluene	ND	mg/Kg	0.20						
2,6-Dinitrotoluene	ND	mg/Kg	0.20						
Fluoranthene	ND	mg/Kg	0.20						
Fluorene	ND	mg/Kg	0.20						
Hexachlorobenzene	ND	mg/Kg	0.20						

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area Sampling

Work Order: 0610228

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8270C									
Sample ID: MB-11608		*MBLK*			Batch ID:	11608	Analysis Date:		11/1/2006
Hexachlorobutadiene	ND	mg/Kg	0.20						
Hexachlorocyclopentadiene	ND	mg/Kg	0.25						
Hexachloroethane	ND	mg/Kg	0.50						
Indeno(1,2,3-cd)pyrene	ND	mg/Kg	0.20						
Isophorone	ND	mg/Kg	0.20						
2-Methylnaphthalene	ND	mg/Kg	0.20						
2-Methylphenol	ND	mg/Kg	0.20						
3+4-Methylphenol	ND	mg/Kg	0.20						
N-Nitrosodi-n-propylamine	ND	mg/Kg	0.20						
N-Nitrosodiphenylamine	ND	mg/Kg	0.20						
Naphthalene	ND	mg/Kg	0.20						
2-Nitroaniline	ND	mg/Kg	0.50						
3-Nitroaniline	ND	mg/Kg	0.50						
4-Nitroaniline	ND	mg/Kg	0.25						
Nitrobenzene	ND	mg/Kg	0.20						
2-Nitrophenol	ND	mg/Kg	0.20						
4-Nitrophenol	ND	mg/Kg	0.20						
Pentachlorophenol	ND	mg/Kg	0.50						
Phenanthrene	ND	mg/Kg	0.20						
Phenol	ND	mg/Kg	0.20						
Pyrene	ND	mg/Kg	0.20						
Pyridine	ND	mg/Kg	0.50						
1,2,4-Trichlorobenzene	ND	mg/Kg	0.20						
2,4,5-Trichlorophenol	ND	mg/Kg	0.20						
2,4,6-Trichlorophenol	ND	mg/Kg	0.20						
Sample ID: LCS-11608		*LCS*			Batch ID:	11608	Analysis Date:		11/1/2006
Acenaphthene	1.894	mg/Kg	0.20	75.7	24	125			
4-Chloro-3-methylphenol	3.338	mg/Kg	0.20	66.8	14.6	154			
2-Chlorophenol	3.186	mg/Kg	0.20	63.7	13.3	149			
1,4-Dichlorobenzene	1.513	mg/Kg	0.20	60.5	23.6	118			
2,4-Dinitrotoluene	2.034	mg/Kg	0.20	81.4	28	136			
N-Nitrosodi-n-propylamine	1.538	mg/Kg	0.20	61.5	28	114			
4-Nitrophenol	2.665	mg/Kg	0.20	53.3	13.1	150			
Pentachlorophenol	2.810	mg/Kg	0.50	56.2	20.1	139			
Phenol	3.240	mg/Kg	0.20	64.8	17.3	141			
Pyrene	2.322	mg/Kg	0.20	92.9	29	131			
1,2,4-Trichlorobenzene	1.712	mg/Kg	0.20	68.5	17.9	126			
Sample ID: LCSD-11608		*LCSD*			Batch ID:	11608	Analysis Date:		11/1/2006
Acenaphthene	1.638	mg/Kg	0.20	65.5	24	125	14.5	25	
4-Chloro-3-methylphenol	2.924	mg/Kg	0.20	58.5	14.6	154	13.2	25	
2-Chlorophenol	2.571	mg/Kg	0.20	51.4	13.3	149	21.3	25	
1,4-Dichlorobenzene	1.241	mg/Kg	0.20	49.6	23.6	118	19.8	25	
2,4-Dinitrotoluene	1.908	mg/Kg	0.20	76.3	28	136	6.42	25	
N-Nitrosodi-n-propylamine	1.368	mg/Kg	0.20	54.7	28	114	11.7	25	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area Sampling

Work Order: 0610228

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8270C									
Sample ID: LCSD-11608		*LCSD*			Batch ID:	**11608**	Analysis Date:		11/1/2006
4-Nitrophenol	2.754	mg/Kg	0.20	55.1	13.1	150	3.27	25	
Pentachlorophenol	2.592	mg/Kg	0.50	51.8	20.1	139	8.11	25	
Phenol	2.702	mg/Kg	0.20	54.0	17.3	141	18.1	25	
Pyrene	2.350	mg/Kg	0.20	94.0	29	131	1.22	25	
1,2,4-Trichlorobenzene	1.398	mg/Kg	0.20	55.9	17.9	126	20.2	25	
Method: SW7471									
Sample ID: 0610228-15B		*MSD*			Batch ID:	**11630**	Analysis Date:		10/31/2006
Mercury	0.1517	mg/Kg	0.033	90.0	75	125	0	20	
Sample ID: 0610228-24B msd		*MSD*			Batch ID:	**11630**	Analysis Date:		11/1/2006
Mercury	0.1476	mg/Kg	0.033	89.2	75	125	0.126	20	
Sample ID: MB-11618		*MBLK*			Batch ID:	**11618**	Analysis Date:		10/31/2006
Mercury	ND	mg/Kg	0.033						
Sample ID: MB-11630		*MBLK*			Batch ID:	**11630**	Analysis Date:		11/1/2006
Mercury	ND	mg/Kg	0.033						
Sample ID: LCS-11618		*LCS*			Batch ID:	**11618**	Analysis Date:		10/31/2006
Mercury	0.1600	mg/Kg	0.033	96.0	80	120			
Sample ID: LCS-11630		*LCS*			Batch ID:	**11630**	Analysis Date:		11/1/2006
Mercury	0.1580	mg/Kg	0.033	94.8	80	120			
Sample ID: 0610228-15B		*MS*			Batch ID:	**11630**	Analysis Date:		10/31/2006
Mercury	0.1524	mg/Kg	0.033	90.4	75	125			
Sample ID: 0610228-24B ms		*MS*			Batch ID:	**11630**	Analysis Date:		11/1/2006
Mercury	0.1478	mg/Kg	0.033	86.8	75	125			
Method: SW7470									
Sample ID: MB-11634		*MBLK*			Batch ID:	**11634**	Analysis Date:		11/1/2006
Mercury	ND	mg/L	0.00020						
Sample ID: LCS-11634		*LCS*			Batch ID:	**11634**	Analysis Date:		11/1/2006
Mercury	0.004830	mg/L	0.00020	96.6	80	120			

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area Sampling

Work Order: 0610228

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW6010A									
Sample ID: 0610228-24B MSD		*MSD*			Batch ID:	**11656**	Analysis Date:	11/6/2006 2:10:58 PM	
Arsenic	24.34	mg/Kg	12	97.8	75	125	3.78	30	
Cadmium	23.44	mg/Kg	0.50	94.2	75	125	3.22	30	
Chromium	33.81	mg/Kg	1.5	97.3	75	125	0.416	30	
Lead	30.93	mg/Kg	1.2	101	75	125	4.42	30	
Silver	23.48	mg/Kg	1.2	94.3	75	125	2.15	30	
Sample ID: 0610228-11B MSD		*MSD*			Batch ID:	**11642**	Analysis Date:	11/6/2006 5:25:10 PM	
Arsenic	21.06	mg/Kg	12	84.4	75	125	21.7	30	
Cadmium	23.08	mg/Kg	0.50	92.5	75	125	3.47	30	
Chromium	31.90	mg/Kg	1.5	90.3	75	125	5.62	30	
Lead	31.88	mg/Kg	1.2	86.6	75	125	4.91	30	
Silver	22.93	mg/Kg	1.2	91.9	75	125	4.34	30	
Sample ID: 0610228-11B MSD		*MSD*			Batch ID:	**11642**	Analysis Date:	11/7/2006 10:05:10 AM	
Selenium	13.56	mg/Kg	12	54.4	75	125	200	30	SR
Sample ID: 0610228-24B MSD		*MSD*			Batch ID:	**11656**	Analysis Date:	11/7/2006 11:30:52 AM	
Selenium	ND	mg/Kg	12	37.8	75	125	0	30	S
Sample ID: MB-11656		*MBLK*			Batch ID:	**11656**	Analysis Date:	11/6/2006 11:20:13 AM	
Arsenic	ND	mg/Kg	2.5						
Barium	ND	mg/Kg	0.10						
Cadmium	ND	mg/Kg	0.10						
Chromium	ND	mg/Kg	0.30						
Lead	ND	mg/Kg	0.25						
Selenium	ND	mg/Kg	2.5						
Silver	ND	mg/Kg	0.25						
Sample ID: MBLK-11642		*MBLK*			Batch ID:	**11642**	Analysis Date:	11/6/2006 4:09:43 PM	
Arsenic	ND	mg/Kg	2.5						
Barium	ND	mg/Kg	0.10						
Cadmium	ND	mg/Kg	0.10						
Chromium	ND	mg/Kg	0.30						
Lead	ND	mg/Kg	0.25						
Silver	ND	mg/Kg	0.25						
Sample ID: MBLK-11642		*MBLK*			Batch ID:	**11642**	Analysis Date:	11/7/2006 9:12:50 AM	
Selenium	ND	mg/Kg	2.5						
Sample ID: MB-11656		*MBLK*			Batch ID:	**11656**	Analysis Date:	11/7/2006 10:42:14 AM	
Selenium	ND	mg/Kg	2.5						
Sample ID: LCS-11656		*LCS*			Batch ID:	**11656**	Analysis Date:	11/6/2006 11:23:19 AM	
Arsenic	24.36	mg/Kg	2.5	97.5	80	120			
Barium	22.98	mg/Kg	0.10	91.9	80	120			
Cadmium	23.44	mg/Kg	0.10	93.8	80	120			
Chromium	23.97	mg/Kg	0.30	95.9	80	120			
Lead	23.06	mg/Kg	0.25	92.2	80	120			
Selenium	20.47	mg/Kg	2.5	81.9	80	120			
Silver	23.18	mg/Kg	0.25	92.7	80	120			

Qualifiers:

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R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area Sampling

Work Order: 0610228

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW6010A									
Sample ID: LCS1-11642		*LCS*			Batch ID:	11642	Analysis Date:	11/6/2006 4:12:50 PM	
Arsenic	25.50	mg/Kg	2.5	102	80	120			
Barium	24.07	mg/Kg	0.10	96.3	80	120			
Cadmium	24.44	mg/Kg	0.10	97.5	80	120			
Chromium	24.52	mg/Kg	0.30	98.1	80	120			
Lead	25.19	mg/Kg	0.25	101	80	120			
Silver	24.22	mg/Kg	0.25	96.9	80	120			
Sample ID: LCS1-11642		*LCS*			Batch ID:	11642	Analysis Date:	11/7/2006 9:15:22 AM	
Selenium	27.65	mg/Kg	2.5	111	80	120			
Sample ID: LCS-11656		*LCS*			Batch ID:	11656	Analysis Date:	11/7/2006 10:44:43 AM	
Selenium	23.19	mg/Kg	2.5	92.8	80	120			
Sample ID: 0610228-24B MS		*MS*			Batch ID:	11656	Analysis Date:	11/6/2006 2:06:42 PM	
Arsenic	23.43	mg/Kg	12	93.6	75	125			
Cadmium	24.21	mg/Kg	0.50	96.7	75	125			
Chromium	33.95	mg/Kg	1.5	97.3	75	125			
Lead	32.32	mg/Kg	1.2	106	75	125			
Silver	23.99	mg/Kg	1.2	95.8	75	125			
Sample ID: 0610228-11B MS		*MS*			Batch ID:	11642	Analysis Date:	11/6/2006 5:20:52 PM	
Arsenic	26.18	mg/Kg	12	105	75	125			
Cadmium	23.89	mg/Kg	0.50	96.0	75	125			
Chromium	33.74	mg/Kg	1.5	98.0	75	125			
Lead	33.49	mg/Kg	1.2	93.3	75	125			
Silver	23.95	mg/Kg	1.2	96.3	75	125			
Sample ID: 0610228-11B MS		*MS*			Batch ID:	11642	Analysis Date:	11/7/2006 10:03:32 AM	
Selenium	ND	mg/Kg	12	0	75	125			S
Sample ID: 0610228-24B MS		*MS*			Batch ID:	11656	Analysis Date:	11/7/2006 11:26:40 AM	
Selenium	ND	mg/Kg	12	34.2	75	125			S

Qualifiers:

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QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area Sampling
Work Order: 0610228

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW6010A									
Sample ID: 0610228-26B MSD		*MSD*			Batch ID:	**11548**	Analysis Date:	10/24/2006 11:09:09 AM	
Arsenic	0.5064	mg/L	0.020	101	75	125	5.00	20	
Barium	0.4955	mg/L	0.020	98.5	75	125	0.463	20	
Cadmium	0.4920	mg/L	0.0020	98.4	75	125	1.11	20	
Chromium	0.5015	mg/L	0.0060	100	75	125	0.774	20	
Lead	0.4987	mg/L	0.0050	99.7	75	125	1.47	20	
Selenium	0.4319	mg/L	0.050	86.4	75	125	3.93	20	
Sample ID: MB-11548		*MBLK*			Batch ID:	**11548**	Analysis Date:	10/24/2006 10:15:22 AM	
Arsenic	ND	mg/L	0.020						
Barium	ND	mg/L	0.020						
Cadmium	ND	mg/L	0.0020						
Chromium	ND	mg/L	0.0060						
Lead	ND	mg/L	0.0050						
Selenium	ND	mg/L	0.050						
Sample ID: LCS-11548		*LCS*			Batch ID:	**11548**	Analysis Date:	10/24/2006 10:18:27 AM	
Arsenic	0.5298	mg/L	0.020	106	80	120			
Barium	0.4892	mg/L	0.020	97.8	80	120			
Cadmium	0.4925	mg/L	0.0020	98.5	80	120			
Chromium	0.4995	mg/L	0.0060	99.5	80	120			
Lead	0.5035	mg/L	0.0050	101	80	120			
Selenium	0.4234	mg/L	0.050	84.7	80	120			
Sample ID: 0610228-26B MS		*MS*			Batch ID:	**11548**	Analysis Date:	10/24/2006 11:06:06 AM	
Arsenic	0.5324	mg/L	0.020	106	75	125			
Barium	0.4933	mg/L	0.020	98.1	75	125			
Cadmium	0.4975	mg/L	0.0020	99.5	75	125			
Chromium	0.5054	mg/L	0.0060	101	75	125			
Lead	0.5061	mg/L	0.0050	101	75	125			
Selenium	0.4153	mg/L	0.050	83.1	75	125			

Qualifiers:

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QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area Sampling

Work Order: 0610228

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8260B									
Sample ID: 0610228-04a msd		*MSD*			Batch ID:	11543	Analysis Date:		10/23/2006
Benzene	1.007	mg/Kg	0.050	101	80.8	132	2.95	20	
Toluene	1.000	mg/Kg	0.050	100	72.1	126	2.26	20	
Chlorobenzene	1.068	mg/Kg	0.050	107	75.4	140	6.58	20	
1,1-Dichloroethene	1.066	mg/Kg	0.050	107	59	147	5.07	20	
Trichloroethene (TCE)	0.9812	mg/Kg	0.050	98.1	63.5	123	4.68	20	
Sample ID: 0610228-21a msd		*MSD*			Batch ID:	11544	Analysis Date:		10/24/2006
Benzene	1.019	mg/Kg	0.050	102	80.8	132	1.10	20	
Toluene	0.9758	mg/Kg	0.050	97.6	72.1	126	2.39	20	
Chlorobenzene	0.9927	mg/Kg	0.050	99.3	75.4	140	1.01	20	
1,1-Dichloroethene	1.006	mg/Kg	0.050	101	59	147	4.35	20	
Trichloroethene (TCE)	0.9555	mg/Kg	0.050	95.6	63.5	123	3.81	20	
Sample ID: MB-11543		*MBLK*			Batch ID:	11543	Analysis Date:		10/23/2006
Benzene	ND	mg/Kg	0.050						
Toluene	ND	mg/Kg	0.050						
Ethylbenzene	ND	mg/Kg	0.050						
Methyl tert-butyl ether (MTBE)	ND	mg/Kg	0.050						
1,2,4-Trimethylbenzene	ND	mg/Kg	0.050						
1,3,5-Trimethylbenzene	ND	mg/Kg	0.050						
1,2-Dichloroethane (EDC)	ND	mg/Kg	0.050						
1,2-Dibromoethane (EDB)	ND	mg/Kg	0.050						
Naphthalene	ND	mg/Kg	0.10						
1-Methylnaphthalene	ND	mg/Kg	0.20						
2-Methylnaphthalene	ND	mg/Kg	0.20						
Acetone	ND	mg/Kg	0.75						
Bromobenzene	ND	mg/Kg	0.050						
Bromochloromethane	ND	mg/Kg	0.050						
Bromodichloromethane	ND	mg/Kg	0.050						
Bromoform	ND	mg/Kg	0.050						
Bromomethane	ND	mg/Kg	0.10						
2-Butanone	ND	mg/Kg	0.50						
Carbon disulfide	ND	mg/Kg	0.50						
Carbon tetrachloride	ND	mg/Kg	0.10						
Chlorobenzene	ND	mg/Kg	0.050						
Chloroethane	ND	mg/Kg	0.10						
Chloroform	ND	mg/Kg	0.050						
Chloromethane	ND	mg/Kg	0.050						
2-Chlorotoluene	ND	mg/Kg	0.050						
4-Chlorotoluene	ND	mg/Kg	0.050						
cis-1,2-DCE	ND	mg/Kg	0.050						
cis-1,3-Dichloropropene	ND	mg/Kg	0.050						
1,2-Dibromo-3-chloropropane	ND	mg/Kg	0.10						
Dibromochloromethane	ND	mg/Kg	0.050						
Dibromomethane	ND	mg/Kg	0.10						
1,2-Dichlorobenzene	ND	mg/Kg	0.050						

Qualifiers:

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QA/QC SUMMARY REPORT

Client: Giant Refining Co
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Work Order: 0610228

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8260B									
Sample ID: MB-11543		*MBLK*			Batch ID:	11543	Analysis Date:		10/23/2006
1,3-Dichlorobenzene	ND	mg/Kg	0.050						
1,4-Dichlorobenzene	ND	mg/Kg	0.050						
Dichlorodifluoromethane	ND	mg/Kg	0.050						
1,1-Dichloroethane	ND	mg/Kg	0.10						
1,1-Dichloroethene	ND	mg/Kg	0.050						
1,2-Dichloropropane	ND	mg/Kg	0.050						
1,3-Dichloropropane	ND	mg/Kg	0.050						
2,2-Dichloropropane	ND	mg/Kg	0.10						
1,1-Dichloropropene	ND	mg/Kg	0.050						
Hexachlorobutadiene	ND	mg/Kg	0.10						
2-Hexanone	ND	mg/Kg	0.50						
Isopropylbenzene	ND	mg/Kg	0.050						
4-Isopropyltoluene	ND	mg/Kg	0.050						
4-Methyl-2-pentanone	ND	mg/Kg	0.50						
Methylene chloride	ND	mg/Kg	0.15						
n-Butylbenzene	ND	mg/Kg	0.050						
n-Propylbenzene	ND	mg/Kg	0.050						
sec-Butylbenzene	ND	mg/Kg	0.050						
Styrene	ND	mg/Kg	0.050						
tert-Butylbenzene	ND	mg/Kg	0.050						
1,1,1,2-Tetrachloroethane	ND	mg/Kg	0.050						
1,1,2,2-Tetrachloroethane	ND	mg/Kg	0.050						
Tetrachloroethene (PCE)	ND	mg/Kg	0.050						
trans-1,2-DCE	ND	mg/Kg	0.050						
trans-1,3-Dichloropropene	ND	mg/Kg	0.050						
1,2,3-Trichlorobenzene	ND	mg/Kg	0.10						
1,2,4-Trichlorobenzene	ND	mg/Kg	0.050						
1,1,1-Trichloroethane	ND	mg/Kg	0.050						
1,1,2-Trichloroethane	ND	mg/Kg	0.050						
Trichloroethene (TCE)	ND	mg/Kg	0.050						
Trichlorofluoromethane	ND	mg/Kg	0.050						
1,2,3-Trichloropropane	ND	mg/Kg	0.10						
Vinyl chloride	ND	mg/Kg	0.050						
Xylenes, Total	ND	mg/Kg	0.10						
Sample ID: MB-11544		*MBLK*			Batch ID:	11544	Analysis Date:		10/24/2006
Benzene	ND	mg/Kg	0.050						
Toluene	ND	mg/Kg	0.050						
Ethylbenzene	ND	mg/Kg	0.050						
Methyl tert-butyl ether (MTBE)	ND	mg/Kg	0.050						
1,2,4-Trimethylbenzene	ND	mg/Kg	0.050						
1,3,5-Trimethylbenzene	ND	mg/Kg	0.050						
1,2-Dichloroethane (EDC)	ND	mg/Kg	0.050						
1,2-Dibromoethane (EDB)	ND	mg/Kg	0.050						
Naphthalene	ND	mg/Kg	0.10						

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QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area Sampling

Work Order: 0610228

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8260B									
Sample ID: MB-11544		*MBLK*			Batch ID:	11544	Analysis Date:		10/24/2006
1-Methylnaphthalene	ND	mg/Kg	0.20						
2-Methylnaphthalene	ND	mg/Kg	0.20						
Acetone	ND	mg/Kg	0.75						
Bromobenzene	ND	mg/Kg	0.050						
Bromochloromethane	ND	mg/Kg	0.050						
Bromodichloromethane	ND	mg/Kg	0.050						
Bromoform	ND	mg/Kg	0.050						
Bromomethane	ND	mg/Kg	0.10						
2-Butanone	ND	mg/Kg	0.50						
Carbon disulfide	ND	mg/Kg	0.50						
Carbon tetrachloride	ND	mg/Kg	0.10						
Chlorobenzene	ND	mg/Kg	0.050						
Chloroethane	ND	mg/Kg	0.10						
Chloroform	ND	mg/Kg	0.050						
Chloromethane	ND	mg/Kg	0.050						
2-Chlorotoluene	ND	mg/Kg	0.050						
4-Chlorotoluene	ND	mg/Kg	0.050						
cis-1,2-DCE	ND	mg/Kg	0.050						
cis-1,3-Dichloropropene	ND	mg/Kg	0.050						
1,2-Dibromo-3-chloropropane	ND	mg/Kg	0.10						
Dibromochloromethane	ND	mg/Kg	0.050						
Dibromomethane	ND	mg/Kg	0.10						
1,2-Dichlorobenzene	ND	mg/Kg	0.050						
1,3-Dichlorobenzene	ND	mg/Kg	0.050						
1,4-Dichlorobenzene	ND	mg/Kg	0.050						
Dichlorodifluoromethane	ND	mg/Kg	0.050						
1,1-Dichloroethane	ND	mg/Kg	0.10						
1,1-Dichloroethene	ND	mg/Kg	0.050						
1,2-Dichloropropane	ND	mg/Kg	0.050						
1,3-Dichloropropane	ND	mg/Kg	0.050						
2,2-Dichloropropane	ND	mg/Kg	0.10						
1,1-Dichloropropene	ND	mg/Kg	0.050						
Hexachlorobutadiene	ND	mg/Kg	0.10						
2-Hexanone	ND	mg/Kg	0.50						
Isopropylbenzene	ND	mg/Kg	0.050						
4-Isopropyltoluene	ND	mg/Kg	0.050						
4-Methyl-2-pentanone	ND	mg/Kg	0.50						
Methylene chloride	ND	mg/Kg	0.15						
n-Butylbenzene	ND	mg/Kg	0.050						
n-Propylbenzene	ND	mg/Kg	0.050						
sec-Butylbenzene	ND	mg/Kg	0.050						
Styrene	ND	mg/Kg	0.050						
tert-Butylbenzene	ND	mg/Kg	0.050						
1,1,1,2-Tetrachloroethane	ND	mg/Kg	0.050						

Qualifiers:

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QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area Sampling
Work Order: 0610228

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8260B									
Sample ID: MB-11544		*MBLK*			Batch ID:	11544	Analysis Date:		10/24/2006
1,1,2,2-Tetrachloroethane	ND	mg/Kg	0.050						
Tetrachloroethene (PCE)	ND	mg/Kg	0.050						
trans-1,2-DCE	ND	mg/Kg	0.050						
trans-1,3-Dichloropropene	ND	mg/Kg	0.050						
1,2,3-Trichlorobenzene	ND	mg/Kg	0.10						
1,2,4-Trichlorobenzene	ND	mg/Kg	0.050						
1,1,1-Trichloroethane	ND	mg/Kg	0.050						
1,1,2-Trichloroethane	ND	mg/Kg	0.050						
Trichloroethene (TCE)	ND	mg/Kg	0.050						
Trichlorofluoromethane	ND	mg/Kg	0.050						
1,2,3-Trichloropropane	ND	mg/Kg	0.10						
Vinyl chloride	ND	mg/Kg	0.050						
Xylenes, Total	ND	mg/Kg	0.10						
Sample ID: LCS-11543		*LCS*			Batch ID:	11543	Analysis Date:		10/23/2006
Benzene	0.9974	mg/Kg	0.050	99.7	80.8	132			
Toluene	0.9484	mg/Kg	0.050	94.8	72.1	126			
Chlorobenzene	1.024	mg/Kg	0.050	102	75.4	140			
1,1-Dichloroethene	1.119	mg/Kg	0.050	112	59	147			
Trichloroethene (TCE)	0.9363	mg/Kg	0.050	93.6	63.5	123			
Sample ID: LCS-11544		*LCS*			Batch ID:	11544	Analysis Date:		10/24/2006
Benzene	0.9940	mg/Kg	0.050	99.4	80.8	132			
Toluene	0.9972	mg/Kg	0.050	99.7	72.1	126			
Chlorobenzene	0.9679	mg/Kg	0.050	96.8	75.4	140			
1,1-Dichloroethene	0.9513	mg/Kg	0.050	95.1	59	147			
Trichloroethene (TCE)	0.9522	mg/Kg	0.050	95.2	63.5	123			
Sample ID: 0610228-04a ms		*MS*			Batch ID:	11543	Analysis Date:		10/23/2006
Benzene	0.9775	mg/Kg	0.050	97.8	80.8	132			
Toluene	0.9778	mg/Kg	0.050	97.8	72.1	126			
Chlorobenzene	0.9996	mg/Kg	0.050	100	75.4	140			
1,1-Dichloroethene	1.013	mg/Kg	0.050	101	59	147			
Trichloroethene (TCE)	0.9363	mg/Kg	0.050	93.6	63.5	123			
Sample ID: 0610228-21a ms		*MS*			Batch ID:	11544	Analysis Date:		10/24/2006
Benzene	1.008	mg/Kg	0.050	101	80.8	132			
Toluene	0.9994	mg/Kg	0.050	99.9	72.1	126			
Chlorobenzene	1.003	mg/Kg	0.050	100	75.4	140			
1,1-Dichloroethene	0.9632	mg/Kg	0.050	96.3	59	147			
Trichloroethene (TCE)	0.9198	mg/Kg	0.050	92.0	63.5	123			

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area Sampling

Work Order: 0610228

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8260B									
Sample ID: b6		*MBLK*			Batch ID:	R21125	Analysis Date:		10/20/2006
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Methyl tert-butyl ether (MTBE)	ND	µg/L	1.5						
1,2,4-Trimethylbenzene	ND	µg/L	1.0						
1,3,5-Trimethylbenzene	ND	µg/L	1.0						
1,2-Dichloroethane (EDC)	ND	µg/L	1.0						
1,2-Dibromoethane (EDB)	ND	µg/L	1.0						
Naphthalene	ND	µg/L	2.0						
1-Methylnaphthalene	ND	µg/L	4.0						
2-Methylnaphthalene	ND	µg/L	4.0						
Acetone	ND	µg/L	10						
Bromobenzene	ND	µg/L	1.0						
Bromochloromethane	ND	µg/L	1.0						
Bromodichloromethane	ND	µg/L	1.0						
Bromoform	ND	µg/L	1.0						
Bromomethane	ND	µg/L	2.0						
2-Butanone	ND	µg/L	10						
Carbon disulfide	ND	µg/L	10						
Carbon Tetrachloride	ND	µg/L	2.0						
Chlorobenzene	ND	µg/L	1.0						
Chloroethane	ND	µg/L	2.0						
Chloroform	ND	µg/L	1.0						
Chloromethane	ND	µg/L	1.0						
2-Chlorotoluene	ND	µg/L	1.0						
4-Chlorotoluene	ND	µg/L	1.0						
cis-1,2-DCE	ND	µg/L	1.0						
cis-1,3-Dichloropropene	ND	µg/L	1.0						
1,2-Dibromo-3-chloropropane	ND	µg/L	2.0						
Dibromochloromethane	ND	µg/L	1.0						
Dibromomethane	ND	µg/L	2.0						
1,2-Dichlorobenzene	ND	µg/L	1.0						
1,3-Dichlorobenzene	ND	µg/L	1.0						
1,4-Dichlorobenzene	ND	µg/L	1.0						
Dichlorodifluoromethane	ND	µg/L	1.0						
1,1-Dichloroethane	ND	µg/L	2.0						
1,1-Dichloroethene	ND	µg/L	1.0						
1,2-Dichloropropane	ND	µg/L	1.0						
1,3-Dichloropropane	ND	µg/L	1.0						
2,2-Dichloropropane	ND	µg/L	2.0						
1,1-Dichloropropene	ND	µg/L	1.0						
Hexachlorobutadiene	ND	µg/L	2.0						
2-Hexanone	ND	µg/L	10						
Isopropylbenzene	ND	µg/L	1.0						

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area Sampling

Work Order: 0610228

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8260B									
Sample ID: b6		*MBLK*			Batch ID:	**R21125**	Analysis Date:		10/20/2006
4-Isopropyltoluene	ND	µg/L	1.0						
4-Methyl-2-pentanone	ND	µg/L	10						
Methylene Chloride	ND	µg/L	3.0						
n-Butylbenzene	ND	µg/L	1.0						
n-Propylbenzene	ND	µg/L	1.0						
sec-Butylbenzene	ND	µg/L	2.0						
Styrene	ND	µg/L	1.5						
tert-Butylbenzene	ND	µg/L	1.0						
1,1,1,2-Tetrachloroethane	ND	µg/L	1.0						
1,1,2,2-Tetrachloroethane	ND	µg/L	1.0						
Tetrachloroethene (PCE)	ND	µg/L	1.0						
trans-1,2-DCE	ND	µg/L	1.0						
trans-1,3-Dichloropropene	ND	µg/L	1.0						
1,2,3-Trichlorobenzene	ND	µg/L	1.0						
1,2,4-Trichlorobenzene	ND	µg/L	1.0						
1,1,1-Trichloroethane	ND	µg/L	1.0						
1,1,2-Trichloroethane	ND	µg/L	1.0						
Trichloroethene (TCE)	ND	µg/L	1.0						
Trichlorofluoromethane	ND	µg/L	1.0						
1,2,3-Trichloropropane	ND	µg/L	2.0						
Vinyl chloride	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	3.0						
Sample ID: 100ng lcs-b		*LCS*			Batch ID:	**R21125**	Analysis Date:		10/20/2006
Benzene	17.97	µg/L	1.0	89.8	74.9	113			
Toluene	20.28	µg/L	1.0	101	80.4	111			
Chlorobenzene	19.55	µg/L	1.0	97.7	83.2	120			
1,1-Dichloroethene	16.75	µg/L	1.0	83.8	72	127			
Trichloroethene (TCE)	18.31	µg/L	1.0	91.6	58.2	131			

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name GIANTREFIN

Date and Time Received: 10/20/2006

Work Order Number 0610228

Received by AT

Checklist completed by [signature] 10/20/06
Signature Date

Matrix Carrier name Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☑	No ☐	N/A ☐	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐	

Container/Temp Blank temperature? 1° *4° C ± 2 Acceptable*
If given sufficient time to cool.

COMMENTS:

Client contacted Date contacted: Person contacted

Contacted by: Regarding

Comments: for Sm B3-5' & 1050 10/15/06 should be B3-2' AT 10/20/06

Corrective Action

183

CHAIN-OF-CUSTODY RECORD

QA / QC Package: Std ☒ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: Giant Refining - Ciniza
Address: I-40 Exit 39, Jamestown NM 87347
Phone #: 505-722-3833
Fax #: 505-722-0210

Project Name: Fan out area sampling
Project #: —
Project Manager: Regina Allen
Sampler: Grant Price
Sample Temperature: 1°

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: ~~HNO_3~~ (none)	Preservative: HCl	HEAL No. 0610228	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA) or 8015 DRO	7471 Mercury	335.2 Cyanide	200.7 RCRA 8 or TCLP metals		Air Bubbles or Headspace (Y or N)
10/17/06	1545	Soil	B7-2ft	3/4oz		X none		-1											X	X	X	X	X		
10/18/06	0950	Soil	B7-5ft	3/4oz		X none		-2											X	X	X	X	X		
10/17/06	1415	Soil	B8-2ft	3/4oz		X none		-3											X	X	X	X	X		
10/17/06	1650	Soil	B8-5ft	3/4oz		X none		-4											X	X	X	X	X		
10/17/06	1345	Soil	B9-2ft	3/4oz		X none		-5											X	X	X	X	X		
10/17/06	1605	Soil	B9-5ft	3/4oz		X none		-6											X	X	X	X	X		
10/17/06	1505	Soil	B10-2ft	3/4oz		X none		-7											X	X	X	X	X		
10/18/06	0915	Soil	B10-5ft	3/4oz		X none		-8											X	X	X	X	X		
10/18/06	—	Soil	MS	3/4oz		X none		-9											X	X	X	X	X		
10/18/06	—	Soil	MSD	3/4oz		X none		-10											X	X	X	X	X		
10/18/06	—	Soil	BD 101806	3/4oz		X none		-11											X	X	X	X	X		
—	—	H_2O	Trip Blank	2/40 mL			X	-12			~~X~~ NOAT								X		~~X~~	~~X~~	~~X~~ NO		AT

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
10/18/06	1830	Regina Allen	10/19/06 1536
10/19/06	1536	Relinquished By: (Signature) AT 10/20/06	Received By: (Signature) ~~1530~~ AT

Remarks: Relinquished to Steve Morris for transport to Laboratory. by Regina Allen
Each container has a custody seal signed by Grant Price 10/18/06

Per RA analyze for DRO - if exceeds 500ppm analyze for 8270

CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☒ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: Giant Refining - Ciniza
Address: I-40 Exit 39, Jamestown N.M 87347
Phone #: 505-722-3833
Fax #: 505-722-0210

Project Name: Fan out area sampling
Project #: ——
Project Manager: Regina Allen
Sampler: Grant Price
Sample Temperature:

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HNO_3	Preservative: none	HEAL No. 0610228	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA) (DRO)	7471 Mercury	335.2 Cyanide	200.7 or 6010C RCRA metals		Air Bubbles or Headspace (Y or N)
10/18/06	0955	Soil	B1-2 ft	3/4oz			X	-13											X	X	X	X	X		
10/18/06	1140	Soil	B1-5ft	3/4oz			X	-14											X	X	X	X	X		
10/18/06	1400	Soil	B2-2ft	3/4oz			X	-15											X	X	X	X	X		
10/18/06	1510	Soil	B2-5ft	3/4oz			X	-16											X	X	X	X	X		
10/18/06	1050	Soil	B3-2ft	3/4oz			X	-17											X	X	X	X	X		
10/18/06	1215	Soil	B3-5ft	3/4oz			X	-18											X	X	X	X	X		
10/18/06	0840	Soil	B4-2ft	3/4oz			X	-19											X	X	X	X	X		
10/18/06	1115	Soil	B4-5ft	3/4oz			X	-20											X	X	X	X	X		
10/17/06	1535	Soil	B5-2ft	3/4oz			X	-21											X	X	X	X	X		
10/18/06	1025	Soil	B5-5ft	3/4oz			X	-22											X	X	X	X	X		
10/18/06	1445	Soil	B6-2ft	3/4oz			X	-23											X	X	X	X	X		
10/18/06	1605	Soil	B6-5ft	3/4oz			X	-24											X	X	X	X	X		

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
10/18/06	1830	Regina Allen	[signature] 10/18/06
10/19/06	1536	[signature]	[signature] 1536 ~~1830~~

Remarks: Relinquished by Regina Allen to Steve Morris for transport to laboratory. Each container has a custody seal signed by Grant Price 10/18/06

CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☒ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: Giant Refining - Ciniza
Address: I-40 Exit 39
Bloomfield, NM 87347
Phone #: 505-722-3833
Fax #: 505-722-0210

Project Name: Fan out area Sampling
Project #: —
Project Manager: Regina Allen
Sampler: Grant Price
Sample Temperature:

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HNO_3	Preservative: NaOH	HEAL No. (lab use only)	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)	RCRA 8 Metals	7470 Mercury	335.2 Cyanide		Air Bubbles or Headspace (Y or N)
10/18/06	1630	H_2O	EB101806	4 VOA, 1 250, 1 500		X	X	0610228-25			X								X		X	X	X		
10/17/06	1730	H_2O	EB101706	4 VOA, 1 250, 1 500		X	X	0610228-26			X								X		X	X	X		

Date	Time	Relinquished By: (Signature)	Received By: (Signature)
10/18/06	1830	Regina Allen	[signature]
10/19/06	1536	[signature]	10/19/06 1536

Remarks: VOAs Pres. w/ HCL
250 w/ NaOH
500 w/ HNO_3
Each container has a custody seal signed by Grant Price 10/18/06
Relinquished by Regina Allen to Steve Morris for transport to laboratory

Tier II Data Validation Report

Client: Giant Refining Co. Ciniza	Laboratory: Hall Environmental Analysis Laboratory, Inc. and Energy Laboratories, Inc. (Cyanide results)
Project Name: Fan Out Area	Sample Matrix: Soil
Project Number: 072-006-001	Sample Start Date: October 17, 2006
Date Validated: November 22, 2006	Sample End Date: October 18, 2006
Samples Analyzed: B7-2', B7-5', B8-2', B8-5', B9-2', B9-5', B10-2', B10-5', B10-5' MS, B10-5' MSD, BD101806, Trip Blank(0610228-12), B1-2', B1-5', B2-2', B2-5', B3-2', B3-5', B4-2', B4-5', B5-2', B5-5', B6-2', B6-5', EB101806, and EB101706	
Parameters: VOCs, SVOCs, Metals, Cyanides, and DRO	
Laboratory Project ID: 0610228	
Data Validator: Lee Grater, Environmental Chemist	

Precision, Accuracy, Method Compliance, Completeness Assessment

Precision Acceptable

Comments: Precision is the measure of variability of sample measurements. Field precision is determined by a comparison of field duplicate sample results. Laboratory precision is determined by examining the laboratory duplicate results. Evaluation of both the field and laboratory duplicates for precision was accomplished using the relative percent difference (RPD). The RPD is defined as the difference between the primary and duplicate samples divided by the mean and expressed as a percentage. Sample B3-2' (0610228-17) was collected as the parent for sample BD101806 (0610228-11). All field duplicate and MS/MSD RPD values were within control limits, with one exception. One MS/MSD RPD value for selenium was reported to be above the control limits. All associated results will be qualified 'J/UJ' due to possible poor repeatability.

Accuracy Acceptable

Comments: Accuracy is a measure of sampling and analysis bias. Field accuracy is determined by collecting field, trip and equipment blanks to monitor for possible ambient or cross contamination during sampling. One trip, and two equipment blanks were collected. There were no detections reported in any of the associated blanks.

Laboratory accuracy is measured by evaluating laboratory control sample (LCS) and MS/MSD recoveries. LCS and MS/MSD recoveries were compared to published or laboratory control limits. All laboratory control and MS/MSD recoveries were within control limits, with a few exceptions. Two MS/MSD recoveries for selenium were reported to be outside of the control limits. All associated results will be qualified 'J/UJ' due to a possible low bias.

Method Compliance Acceptable

Comments: Method compliance was determined by reviewing the holding times, detection limits, surrogate recoveries, method blanks, and laboratory control samples against method specific requirements. The analyte cyanide was detected in one method blank. No qualification is necessary since the associated method blank was only associated with the equipment blanks and since all associated samples were non-detect. All other criteria for method compliance were acceptable. The laboratory met extraction and analytical hold times for all requested analyses.

Completeness Acceptable

Comments: Completeness is the overall ration of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody and laboratory analytical methods. Completeness also includes a review of the analytical reports and QC summary report. All data were presented in a clear and complete manner. A total of 43 data points were assigned "J" or "UJ" data qualifiers as a result of this data validation review. No data points were qualified or rejected; therefore, this data sets is 100% complete

Validation Criteria Checklist	
Data validation flags used in this review: The data flags "J" and "UJ" were used to denote that the reported values are estimated, or that the method reporting limit is estimated in this sample matrix.	
1. Did the laboratory identify any non-conformances related to the analytical data?	Yes
Comments: The laboratory noted that the cyanide samples were received by Energy Laboratories at 14°C. The surrogate in the DRO analysis for sample B9-2' (610228-05) failed to recover because the sample was diluted due to high concentrations of target compounds present in the sample.	
2. Were sample chain-of-custody forms complete?	Yes
Comments: The sample recorded on the chain-of-custody document as sample B3-5', collected on 10/18/06, at 1050 hrs, should have been labeled B3-2', (0610228-17), which was collected on 10/20/06. The chain-of-custody forms were complete from the field to the laboratory in all other respects.	
3. Were detection limits in accordance with the QAPP, permit, or method?	Yes
Comments: All detection limits were acceptable; however, some dilutions were required in order to determine concentrations for target constituents. Dilutions were reviewed and were acceptable for this data set.	
4. Were the requested analytical methods in compliance with the QAPP, permit, or COC?	Yes
Comments: All reported analytical methods were in compliance with those noted on the chain-of-custody.	
5. Were samples received in good condition?	No
Comments: All samples were received in good condition at temperatures of 1 degree Celsius. The laboratory noted that the cyanide samples were received by Energy Laboratories at 14°C. As a result of this occurrence, all cyanide results will be assigned "UJ" or "J" data qualifiers, denoting the samples were compromised in shipment, and that the reported results are estimated values.	
6. Were sample holding times met?	Yes
Comments: All samples were analyzed within the acceptable holding times.	
7. Were correct concentration units reported?	Yes
Comments: All sample results were reported in units of mg/kg. These units are acceptable when reporting concentrations for the associated matrix (soil).	
8. Do the laboratory reports include all constituents requested to be reported for a specific analytical method?	Yes
Comments: The laboratory appeared to have reported all constituents as requested by the client.	
9. Were the reporting requirements for flagged data met?	Yes
Comments: No data were flagged by the laboratory; however, the laboratory did note any dilutions and re-analyses that were performed on the associated samples.	
10. Is there indication that the continuous calibration verification was within acceptable limits?	Yes
Comments: There were no continuous calibration results noted in the data sets associated with the water samples; however, it is assumed that all results were acceptable based on other QC data.	
11. Were the instrument calibrations within method control limits?	Yes
Comments: There were no instrument calibration results noted in the data sets associated with the water samples; however, it is assumed that all results were acceptable based on other QC data.	
12. Were method blank samples analyzed on a 5% basis?	Yes
Comments: Method blank samples were analyzed on a 5% basis for all analyses and all associated batches.	
13. Were method blank detections reported for this data set?	Yes
Comments: The analyte cyanide (0.002 mg/L) was detected in the method blank associated with sample A2006-10_26_4_CN-01. No qualification is necessary since this method blank is only associated with equipment blanks and since all associated samples were non-detect.	

Validation Criteria Checklist	
14. Were matrix spike samples prepared on a 5% basis?	No
Comments: For the DRO and MRO analysis, a MS/MSD pair was prepared from sample 0610228-08. For the analysis of cyanide, two MS/MSD pairs were prepared from samples from other clients sample sets. For the Method 8260B analysis, two MS/MSD pairs were prepared from samples 0610228-04, and -21. For the Method 8270C analysis, no MS samples were analyzed. The Method 8270C analysis will be accepted on the basis of the LCS and MB results. For the Method 7471 analysis, two MS/MSD pairs were prepared from samples 0610228-15, and -24. For the Method 6010 analysis, three MS/MSD pairs were prepared from samples 0610228-11, -24, and -26.	
15. Were matrix spike recoveries within acceptable limits?	No
Comments: For samples 0610228-11B and 24B, the MS (0% and 34.2%, respectively)/MSD (54.4% and 37.8%, respectively) recoveries for selenium were reported to be outside of the control limits of 75-125%. In addition, for sample 11B, the RPD value for selenium (200%; acceptable limit 30%) was reported to be above the acceptable limit of 30%. All associated results will be qualified 'J/UJ' due to possible poor repeatability and a possible low bias.	
16. Were laboratory control samples analyzed on a 5% basis?	Yes
Comments: Laboratory control samples were analyzed on a 5% basis for all analyses.	
17. Were laboratory control recoveries within acceptable limits?	Yes
Comments: All laboratory control recoveries were within control limits.	
18. Were surrogate recoveries within control limits?	No
Comments: In sample B9-2', the surrogate DNOP (0%; acceptable range 61.7-135%) was reported to be outside of the control limits. This is acceptable per the method. In sample B9-2', the surrogates 4-terphenyl-d14 (27.6%; acceptable range 34.6-151%) and phenol-d5 (36.6%; acceptable range 37.6-118%) were recovered outside of the control limits. No qualification is necessary since all other surrogate recoveries were acceptable.	
19. Were equipment blanks and field blanks collected on a 10% basis?	Yes
Comments: One trip, and two equipment blanks were collected during this sampling event.	
20. Were detections found in trip blanks, equipment blanks, or field blanks?	No
Comments: There were no detections in the trip, equipment, or field blanks.	
21. Were field duplicates collected on a 10% basis?	Yes
Comments: One field duplicate was collected in this sampling event. BD101806 is a duplicate of B3-2' (0610228-11).	
22. Were field duplicate RPD values less than 30%?	Yes
Comments: All field duplicate RPD values were less than the acceptable value of 30% (Table 2).	
23. General Comments: All data were presented in a clear and complete manner. Because the cyanide samples were received by Energy Laboratories, Inc., at a temperature of 14°C, all cyanide results will be "J" or "UJ" flagged as estimated values. Due to the consistent low spike recoveries for selenium in MS/MSD samples prepared from this sample set, it is apparent that there is a low bias in the selenium results due to sample matrix interferences, and all selenium results will be "UJ" or "J" flagged as estimated values in this sample matrix. No data points were rejected; therefore these data sets are 100% complete.	

TABLE 1. DATA QUALIFICATION, GIANT REFINING COMPANY, CINIZA
HALL ENVIRONMENTAL LABORATORY DATA SET 0610228

Analyte	Sample ID	Laboratory Assigned ID	Laboratory Result	Flag	Reason
Cyanide	B7-2’	0610228-01	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B7-5’	0610228-02	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B8-2’	0610228-03	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B8-5’	0610228-04	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B9-2’	0610228-05	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B9-5’	0610228-06	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B10-2’	0610228-07	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B10-5’	0610228-08	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	BD101806	0610228-11	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B1-2’	0610228-13	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B1-5’	0610228-14	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B2-2’	0610228-15	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B2-5’	0610228-16	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B3-2’	0610228-17	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B3-5’	0610228-18	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B4-2’	0610228-19	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B4-5’	0610228-20	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B5-2’	0610228-21	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B5-5’	0610228-22	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B6-2’	0610228-23	ND	UJ	Samples were received by laboratory at 14°C
Cyanide	B6-5’	0610228-24	ND	UJ	Samples were received by laboratory at 14°C
Selenium	B7-2’	0610228-01	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B7-5’	0610228-02	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B8-2’	0610228-03	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B8-5’	0610228-04	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B9-2’	0610228-05	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B9-5’	0610228-06	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B10-2’	0610228-07	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B10-5’	0610228-08	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	BD101806	0610228-11	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B1-2’	0610228-13	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B1-5’	0610228-14	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B2-2’	0610228-15	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B2-5’	0610228-16	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B3-2’	0610228-17	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B3-5’	0610228-18	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B4-2’	0610228-19	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B4-5’	0610228-20	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B5-2’	0610228-21	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B5-5’	0610228-22	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B6-2’	0610228-23	ND	UJ	MS/MSD spike failed to recover – low bias.
Selenium	B6-5’	0610228-24	ND	UJ	MS/MSD spike failed to recover – low bias.

J – Indicates estimated detection value.
UJ – Indicates estimated reporting limit in this sample matrix.

TABLE 2. FIELD DUPLICATE SUMMARY, GIANT REFINING COMPANY, CINIZA
HALL ENVIRONMENTAL LABORATORY DATA SET 0610228

Sample ID: Parent sample B3-2' (0610228-17) Duplicate sample: BD101806			
Analyte	**Laboratory Result (mg/L)**	**Duplicate Result (mg/L)**	**Relative Percent Difference (RPD)**
Barium	260	290	10.9
Chromium	9.0	9.4	4.35
Lead	11.0	10.0	9.5
Field duplicate RPD control limits should not exceed 30% as established by USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, February 1988. No qualification is necessary since all RPD values were less than 30%.			

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Wednesday, May 23, 2007

Steve Morris
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-3833
FAX (505) 722-0210

RE: Additional Fan out area samples

Order No.: 0705313

Dear Steve Morris:

Hall Environmental Analysis Laboratory, Inc. received 12 sample(s) on 5/21/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc.

Date: *23-May-07*

CLIENT: Giant Refining Co
Project: Additional Fan out area samples
Lab Order: 0705313

Lab ID: 0705313-01 **Collection Date:** 5/21/2007
Client Sample ID: BD 5212007 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	1300	100		mg/Kg	10	5/22/2007 1:55:15 PM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	5/22/2007 1:55:15 PM
Surr: DNOP	88.8	61.7-135		%REC	10	5/22/2007 1:55:15 PM

Lab ID: 0705313-02 **Collection Date:** 5/21/2007 12:30:00 PM
Client Sample ID: B-8 NW **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	610	100		mg/Kg	10	5/22/2007 2:29:36 PM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	5/22/2007 2:29:36 PM
Surr: DNOP	104	61.7-135		%REC	10	5/22/2007 2:29:36 PM

Lab ID: 0705313-03 **Collection Date:** 5/21/2007 12:37:00 PM
Client Sample ID: B-8 NE **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	1300	100		mg/Kg	10	5/22/2007 3:04:17 PM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	5/22/2007 3:04:17 PM
Surr: DNOP	101	61.7-135		%REC	10	5/22/2007 3:04:17 PM

Lab ID: 0705313-04 **Collection Date:** 5/21/2007 12:42:00 PM
Client Sample ID: B-8 SW **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	88	10		mg/Kg	1	5/23/2007 8:02:24 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/23/2007 8:02:24 AM
Surr: DNOP	98.2	61.7-135		%REC	1	5/23/2007 8:02:24 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *23-May-07*

CLIENT: Giant Refining Co
Project: Additional Fan out area samples
Lab Order: 0705313

Lab ID: 0705313-05
Client Sample ID: B-8 SE
Collection Date: 5/21/2007 12:47:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	650	100		mg/Kg	10	5/22/2007 4:48:05 PM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	5/22/2007 4:48:05 PM
Surr: DNOP	106	61.7-135		%REC	10	5/22/2007 4:48:05 PM

Lab ID: 0705313-06
Client Sample ID: B-8 Center
Collection Date: 5/21/2007 12:52:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	790	100		mg/Kg	10	5/22/2007 1:20:34 PM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	5/22/2007 1:20:34 PM
Surr: DNOP	106	61.7-135		%REC	10	5/22/2007 1:20:34 PM

Lab ID: 0705313-09
Client Sample ID: B-9 NW
Collection Date: 5/21/2007 1:09:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	130	10		mg/Kg	1	5/22/2007 11:37:16 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/22/2007 11:37:16 AM
Surr: DNOP	103	61.7-135		%REC	1	5/22/2007 11:37:16 AM

Lab ID: 0705313-10
Client Sample ID: B-9 NE
Collection Date: 5/21/2007 1:18:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	200	10		mg/Kg	1	5/22/2007 12:11:41 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/22/2007 12:11:41 PM
Surr: DNOP	89.0	61.7-135		%REC	1	5/22/2007 12:11:41 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *23-May-07*

CLIENT: Giant Refining Co
Project: Additional Fan out area samples
Lab Order: 0705313

Lab ID: 0705313-11
Client Sample ID: B-9 SW
Collection Date: 5/21/2007 1:23:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	210	10		mg/Kg	1	5/22/2007 12:46:11 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/22/2007 12:46:11 PM
Surr: DNOP	87.1	61.7-135		%REC	1	5/22/2007 12:46:11 PM

Lab ID: 0705313-12
Client Sample ID: B-9 SE
Collection Date: 5/21/2007 1:30:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	210	100		mg/Kg	10	5/22/2007 5:22:48 PM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	5/22/2007 5:22:48 PM
Surr: DNOP	105	61.7-135		%REC	10	5/22/2007 5:22:48 PM

Lab ID: 0705313-13
Client Sample ID: EB
Collection Date: 5/21/2007 1:40:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	5/22/2007 8:16:12 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	5/22/2007 8:16:12 PM
Surr: DNOP	116	58-140		%REC	1	5/22/2007 8:16:12 PM

Lab ID: 0705313-14
Client Sample ID: B9 Center
Collection Date: 5/21/2007 1:37:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	2600	100		mg/Kg	10	5/22/2007 5:57:28 PM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	5/22/2007 5:57:28 PM
Surr: DNOP	93.7	61.7-135		%REC	10	5/22/2007 5:57:28 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Additional Fan out area samples
Work Order: 0705313

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8015									
Sample ID: MB-13006		*MBLK*			Batch ID:	**13006**	Analysis Date:	5/22/2007 9:54:10 AM	
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-13006		*LCS*			Batch ID:	**13006**	Analysis Date:	5/22/2007 10:28:31 AM	
Diesel Range Organics (DRO)	39.23	mg/Kg	10	78.5	64.6	116			
Sample ID: LCSD-13006		*LCSD*			Batch ID:	**13006**	Analysis Date:	5/22/2007 11:02:51 AM	
Diesel Range Organics (DRO)	43.64	mg/Kg	10	87.3	64.6	116	10.6	17.4	
Method: SW8015									
Sample ID: MB-13003		*MBLK*			Batch ID:	**13003**	Analysis Date:	5/22/2007 6:32:11 PM	
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-13003		*LCS*			Batch ID:	**13003**	Analysis Date:	5/22/2007 7:06:50 PM	
Diesel Range Organics (DRO)	4.973	mg/L	1.0	99.5	74	157			
Sample ID: LCSD-13003		*LCSD*			Batch ID:	**13003**	Analysis Date:	5/22/2007 7:41:33 PM	
Diesel Range Organics (DRO)	5.046	mg/L	1.0	101	74	157	1.47	23	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name GIANTREFIN

Date and Time Received: 5/22/2007

Work Order Number 0705313

Received by NJM

Checklist completed by _____ Signature _____ Date 5/22/07

Matrix: Carrier name Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	2°	*4° C ± 2 Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

CHAIN-OF-CUSTODY RECORD

QA / QC Package: Std ☒ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: Giant Refining Company - Ciniza
Address: Route 3 Box 7, Gallup, NM 87301
Phone #: 505-722-3833
Fax #: 505-722-0210

Project Name: Additional Fan out area samples
Project #:
Project Manager: Steve Morris (Giant) 387631-3090 Regina Allen (Tri hydro)
Sampler: Regina Allen / Grant Price
Sample Temperature: 20

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative HgCl$_2$	Preservative HNO$_3$	Preservative None	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
5/21/07	—	soil	BD 5212007	1			X	0705313-1			X														
5/21/07	1230	soil	B-8 NW	1			X	-2			X														
5/21/07	1237	soil	B-8 NE	1			X	-3			X														
5/21/07	1242	soil	B-8 SW	1			X	-4			X														
5/21/07	1247	soil	B-8 SE	1			X	-5			X														
5/21/07	1252	soil	B-8 Center	1			X	-6			X														
5/21/07	1256	soil	MS - B8 Center	1			X	-6			X														
5/21/07	1300	soil	MSD - B8 Center	1			X	-6			X														
5/21/07	1309	soil	B9-NW	1			X	-9			X														
5/21/07	1318	soil	B9-NE	1			X	-10			X														
5/21/07	1323	soil	B9-SW	1			X	-11			X														
5/21/07	1330	soil	B9-SE	1			X	-12			X														

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	
5/21/07	5:00			5/21/07 5pm
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	

Remarks: 24 hour DRO on all but BD, MS, MSD, and EB

CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☐ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

2 of 2

Client: Giant Refining Company - Ciniza

Address: Route 3 Box 7
Gallup, NM 87301

Phone #: 505-722-3833

Fax #: 505-722-0210

Project Name: Additional Fan out Area Samples

Project #:

Project Manager: Steve Morris (Giant)
307 631 3090 Regina Allen / Trihydro

Sampler: Regina Allen / Grant Price

Sample Temperature: 20

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HNO_3	Preservative: HCl	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
5/21/07	1340	Water	EB	3			X	0705213-13			X														
5/21/07	1337	Soil	B9-center	1			None	-14			X														

Date	Time	Relinquished By: (Signature)	Received By: (Signature)
5/21/07	5:00	[signature]	[signature] 5/21/07 5:00pm
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)

Remarks: 24 hour DRO on all but BD, MS, MSD, and EB

Tier II Data Validation Report Summary

Client: Western Refining Company, Gallup	Laboratory: Hall Environmental Analysis Laboratory, Inc.
Project Name: May 2007 Sampling Event	Sample Matrix: Soil
Project Number: 697-017-002	Sample Start Date: May 21, 2007
Date Validated: June 18, 2009	Sample End Date: May 21, 2007
Parameters Included: Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by Environmental Protection Agency (EPA) Method 8015B	
Laboratory Project IDs: 0705313	
Data Validator's Name: Jessica Swanson, Environmental Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services group on the analytical data report package generated by Hall Environmental Analysis Laboratory, Inc. evaluating samples from the Western Refining Company site located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values of samples from field duplicate pairs. Laboratory accuracy was established by reviewing the demonstrated percent recoveries of laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) to verify that none of the data were biased. Additionally, field accuracy was established by collecting an equipment blank to monitor for possible ambient or cross contamination during sampling. Method compliance was established by reviewing holding times, detection limits, surrogate recoveries, method blanks, and the LCS and LCSD percent recoveries against method specific requirements. Completeness was evaluated by determining the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody, laboratory analytical methods, and any other necessary documents associated with this analytical data set.

Data were evaluated in general accordance with validation criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-08-01, June 2008 with additional reference to USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999. Review of duplicates is conducted in accordance with USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.

Tier II Data Validation Report Summary

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
BD 5212007	0705313-01
B-8 NW	0705313-02
B-8 NE	0705313-03
B-8 SW	0705313-04
B-8 SE	0705313-05
B-8 Center	0705313-06
B-9 NW	0705313-09
B-9 NE	0705313-10
B-9 SW	0705313-11
B-9 SE	0705313-12
EB	0705313-13
B9 Center	0705313-14

Tier II Data Validation Report

The samples were analyzed for client-specified analytes. Chain-of-custody (COC) completeness is included in Section #3. The laboratory data were reviewed to evaluate compliance with the required methods and the quality of the reported data. A leading check mark (✓) indicates that the referenced data were deemed acceptable. A preceding crossed circle (⊗) signifies problems with the referenced data that may have warranted attaching qualifiers to the data.

- ✓ Data Completeness
- ✓ COC Documentation
- ✓ Holding Times and Preservation
- ✓ Laboratory Blanks
- ✓ System Monitoring Compounds (i.e. Surrogates)
- ✓ Laboratory Control Samples/Laboratory Control Sample Duplicates (LCS/LCSD)
- ✓ Field Duplicates
- ✓ Equipment Blank

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Section #2.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data which are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R, the data may be used for site evaluation, with the reasons for qualification being given consideration when interpreting sample concentrations. Data points which are assigned an R qualifier should not be used for any site evaluation purposes. Data were not qualified as a result of this validation.

Data Completeness

The analyses appeared to be performed as requested on the chain-of-custody records. The associated samples were received by the laboratory and appeared to be analyzed properly. No data points were rejected. The data completeness measure for this data package is 100%.

VALIDATION CRITERIA CHECKLIST	
1. Did the laboratory identify any non-conformances related to the analytical data? Comments: The laboratory did not identify any non-conformances related to this data set.	No
2. Were data qualification flags used by the laboratory? If yes, define. Comments: The laboratory did not use data qualification flags with this data set.	No
3. Were sample chain-of-custody forms complete? Comments: The COC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.	Yes
4. Were detection limits in accordance with the QAPP, permit, or method, or indicated as acceptable by the Tier I validator? Comments: Detection limits were reviewed and appeared to be acceptable. Dilutions up to 10 times were applied to some of the samples in this data set. The final usability with respect to dilutions will be determined by the project team.	Yes
5. Were the requested analytical methods in compliance with the QAPP, permit, or COC? Comments: The requested analytical methods were in compliance with what was requested on the COC.	Yes
6. Were samples received in good condition within method specified requirements? Comments: Samples were received intact and in good condition. Cooler temperatures were within the 4°C +/- 2°C acceptable range at 2.0°C, as noted in the Sample Receipt Checklist. The shipping cooler was marked as being received in good condition by the laboratory on the Sample Receipt Checklist.	Yes
7. Were samples analyzed within method specified or technical holding times? Comments: Samples were analyzed within the acceptable hold time.	Yes
8. Were reported units appropriate for the associated sample matrix/matrices and method(s) of analyses? Comments: Analyte concentrations were reported in units of mg/kg. The reported units are acceptable for the soil matrix.	Yes
9. Do the laboratory reports include all constituents requested to be reported as indicated by the Tier I validator? Comments: As indicated on the Tier I data validation, laboratory reported constituents were in accordance with those requested.	Yes
10. Was there indication from the laboratory that the initial or continued calibration verification results were within acceptable limits? Comments: Initial and continuing calibration data were not included as part of this data set; however, these data are assumed to be acceptable as the laboratory did not note that any calibration verification results were outside acceptable limits.	N/A
11. Was the total number of method blank samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method? Comments: Method blanks were prepared on a greater than 5% basis.	Yes
12. Were method blank detections reported for this data set? Comments: Method blank detections were not reported for this data set.	No
13. Was the total number of matrix spike samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method? Comments: Matrix spike samples were not prepared for this data set.	No
14. Were matrix spike recoveries within laboratory-specified limits? Comments: Matrix spike samples were not prepared for this data set.	N/A

VALIDATION CRITERIA CHECKLIST	
15. Was the total number of laboratory control samples analyzed equal to at least 5% of the total number of samples, or analyzed as required by the method? Comments: Laboratory control samples were reported on a greater than 5% basis.	Yes
16. Were laboratory control recoveries within laboratory-specified limits? Comments: Laboratory control recoveries were within laboratory-specified limits.	Yes
17. Were surrogate recoveries within laboratory control limits? Comments: Surrogate recoveries were within laboratory control limits.	Yes
18. Was the number of equipment, trip, or field blanks collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator? Comments: One equipment blank (EB) was submitted with this data set which is at least 10% the total number of samples.	Yes
19. Were detections found in trip blanks, equipment blanks, or field blanks? Comments: There were no detections in the equipment blank.	No
20. Were the field duplicates collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator? Comments: One field duplicate, BD 5212007 was collected as a duplicate of sample B-8 Center, which is at least 10% the total number of samples.	Yes
21. Were field duplicate RPD values less than the upper RPD limit (soil [50%], water [30%], or air/vapor [25%]), as specified by the laboratory or method? Comments: Field duplicate RPD values were less than the upper RPD limit of 50% for soil samples as shown in the Field Duplicate Summary table at the end of this report.	Yes
22. Were laboratory duplicate RPD values within laboratory-specified limits? Comments: Laboratory duplicates were not prepared for this data set.	N/A

FIELD DUPLICATE SUMMARY

Client Sample ID: B-8 Center Field Duplicate Sample ID: BD5212007			
Analyte	**Laboratory Result (mg/kg)**	**Duplicate Result (mg/kg)**	**Relative Percent Difference (RPD)**
DRO	790	1300	48.8%
Field duplicate RPD control limits should not exceed 30% for water, 50% for soil, or 25% for air or vapor as established by USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.			

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Wednesday, December 30, 2009

Steve Morris
Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-3258
FAX (505) 722-0210

RE: Additional Fan Out Area Samples

Order No.: 0705361

Dear Steve Morris:

Hall Environmental Analysis Laboratory, Inc. received 8 sample(s) on 5/23/2007 for the analyses presented in the following report.

This report is an addendum to the report dated May 29, 2007. This is an updated report.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

ACCREDITED IN ACCORDANCE WITH nelac

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc. **Date:** *30-Dec-09*

CLIENT: Western Refining Southwest, Gallup
Project: Additional Fan Out Area Samples
Lab Order: 0705361

CASE NARRATIVE

Analytical Comments for METHOD 8015DRO_S, SAMPLE 0705361-04A: DNOP not recovered due to dilution

Hall Environmental Analysis Laboratory, Inc.

Date: *30-Dec-09*

CLIENT: Western Refining Southwest, Gallup
Project: Additional Fan Out Area Samples

Lab Order: 0705361

Lab ID: 0705361-01 **Collection Date:** 5/23/2007 11:25:00 AM
Client Sample ID: B8 extra 2' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	140	10		mg/Kg	1	5/24/2007 12:22:21 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/24/2007 12:22:21 PM
Surr: DNOP	98.0	61.7-135		%REC	1	5/24/2007 12:22:21 PM

Lab ID: 0705361-02 **Collection Date:** 5/23/2007 11:42:00 AM
Client Sample ID: B8 new NE 3' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	130	10		mg/Kg	1	5/25/2007 12:24:00 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/25/2007 12:24:00 AM
Surr: DNOP	102	61.7-135		%REC	1	5/25/2007 12:24:00 AM

Lab ID: 0705361-03 **Collection Date:** 5/23/2007 11:53:00 AM
Client Sample ID: B8 new NW 3' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	130	10		mg/Kg	1	5/25/2007 12:58:14 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/25/2007 12:58:14 AM
Surr: DNOP	90.0	61.7-135		%REC	1	5/25/2007 12:58:14 AM

Lab ID: 0705361-04 **Collection Date:** 5/23/2007 12:00:00 PM
Client Sample ID: B8 new SE 3' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	5800	500		mg/Kg	50	5/25/2007 8:56:05 AM
Motor Oil Range Organics (MRO)	ND	2500		mg/Kg	50	5/25/2007 8:56:05 AM
Surr: DNOP	0	61.7-135	S	%REC	50	5/25/2007 8:56:05 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *30-Dec-09*

CLIENT: Western Refining Southwest, Gallup
Project: Additional Fan Out Area Samples

Lab Order: 0705361

Lab ID: 0705361-05 **Collection Date:** 5/23/2007 12:25:00 PM
Client Sample ID: B8 new NE 5' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	11	10		mg/Kg	1	5/25/2007 1:32:34 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/25/2007 1:32:34 AM
Surr: DNOP	90.3	61.7-135		%REC	1	5/25/2007 1:32:34 AM

Lab ID: 0705361-06 **Collection Date:** 5/23/2007 12:55:00 PM
Client Sample ID: B8 new NW 5' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	310	10		mg/Kg	1	5/25/2007 2:06:41 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/25/2007 2:06:41 AM
Surr: DNOP	94.9	61.7-135		%REC	1	5/25/2007 2:06:41 AM

Lab ID: 0705361-07 **Collection Date:** 5/23/2007 1:15:00 PM
Client Sample ID: B8 new SE 5' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	5000	100		mg/Kg	10	5/25/2007 12:56:28 PM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	5/25/2007 12:56:28 PM
Surr: DNOP	103	61.7-135		%REC	10	5/25/2007 12:56:28 PM

Lab ID: 0705361-08 **Collection Date:** 5/23/2007 1:30:00 PM
Client Sample ID: B9 new Center 5' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	150	10		mg/Kg	1	5/25/2007 3:14:52 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/25/2007 3:14:52 AM
Surr: DNOP	100	61.7-135		%REC	1	5/25/2007 3:14:52 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: Additional Fan Out Area Samples **Work Order:** 0705361

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics									
Sample ID: MB-13024		*MBLK*			Batch ID:	**13024**	Analysis Date:	5/24/2007 8:23:16 AM	
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: MB-13027		*MBLK*			Batch ID:	**13027**	Analysis Date:	5/24/2007 3:47:36 PM	
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-13024		*LCS*			Batch ID:	**13024**	Analysis Date:	5/24/2007 8:57:23 AM	
Diesel Range Organics (DRO)	40.59	mg/Kg	10	81.2	64.6	116			
Sample ID: LCS-13027		*LCS*			Batch ID:	**13027**	Analysis Date:	5/24/2007 4:21:58 PM	
Diesel Range Organics (DRO)	39.37	mg/Kg	10	78.7	64.6	116			
Sample ID: LCSD-13024		*LCSD*			Batch ID:	**13024**	Analysis Date:	5/24/2007 9:31:32 AM	
Diesel Range Organics (DRO)	43.16	mg/Kg	10	86.3	64.6	116	6.12	17.4	
Sample ID: LCSD-13027		*LCSD*			Batch ID:	**13027**	Analysis Date:	5/24/2007 4:56:24 PM	
Diesel Range Organics (DRO)	42.55	mg/Kg	10	85.1	64.6	116	7.76	17.4	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

1 of 1

CHAIN-OF-CUSTODY RECORD

QA / QC Package: Std ☒ Level 4 ☐ Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: Giant Refining Company - Ciniza

Address: Route 3 Box 7
Gallup, NM 87301

Phone #:

Fax #:

Project Name: Additional Fan out area Samples

Project #: Steve Morris (Giant) Regina Allen (Trihydro) 307 63[redacted]3090

Project Manager:

Sampler: Regina Allen / Grant Price

Sample Temperature: 4°

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HNO_3	Preservative: none	HEAL No. 0705361	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
5/23/07	1125	soil	B8 extra 2'	1			X	1			X														
5/23/07	1142	soil	B8 new NE 3'	1			X	2			X														
5/23/07	1153	soil	B8 new NW 3'	1			X	3			X														
5/23/07	1200	soil	B8 new ~~SW~~ SE 3'	1			X	4			X														
5/23/07	1225	soil	B8 new NE 5'	1			X	5			X														
5/23/07	1255	soil	B8 new NW 5'	1			X	6			X														
5/23/07	1315	soil	B8 new SE 5'	1			X	7			X														
5/23/07	1330	soil	B9 new Center 5'	1			X	8			X														

Date	Time	Relinquished By: (Signature)	Received By: (Signature)
5/23/07	4:34	Regina Allen	[signature]
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature) 5/23/07 1634

Remarks: Please run Diesel only
Please Rush - 24 hr. "B8-extra 2'"
Others 72 hr turnaround.

Tier II Data Validation Report Summary

Client: Western Refining Company, Gallup	Laboratory: Hall Environmental Analysis Laboratory, Inc.
Project Name: May 2007 Sampling Event	Sample Matrix: Soil
Project Number: 697-017-002	Sample Start Date: May 23, 2007
Date Validated: June 18, 2009	Sample End Date: May 23, 2007
Parameters Included: Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by Environmental Protection Agency (EPA) Method 8015B	
Laboratory Project IDs: 0705361	
Data Validator's Name: Jessica Swanson, Environmental Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services group on the analytical data report package generated by Hall Environmental Analysis Laboratory, Inc. evaluating samples from the Western Refining Company site located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Laboratory accuracy and precision was established by reviewing the demonstrated percent recoveries of laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) to verify that none of the data were biased. Method compliance was established by reviewing holding times, detection limits, surrogate recoveries, method blanks, and the LCS and LCSD percent recoveries against method specific requirements. Completeness was evaluated by determining the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody, laboratory analytical methods, and any other necessary documents associated with this analytical data set.

Data were evaluated in general accordance with validation criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-08-01, June 2008 with additional reference to USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
B8 extra 2'	0705361-01
B8 new NE 3'	0705361-02
B8 new NW 3'	0705361-03
B8 new SW 3'	0705361-04
B8 new NE 5'	0705361-05
B8 new NW 5'	0705361-06
B8 new SE 5'	0705361-07
B9 new Center 5'	0705361-08

Tier II Data Validation Report

The samples were analyzed for client-specified analytes. Chain-of-custody (COC) completeness is included in Section #3. The laboratory data were reviewed to evaluate compliance with the required methods and the quality of the reported data. A leading check mark (✓) indicates that the referenced data were deemed acceptable. A preceding crossed circle (⊗) signifies problems with the referenced data that may have warranted attaching qualifiers to the data.

- ✓ Data Completeness
- ✓ COC Documentation
- ✓ Holding Times and Preservation
- ✓ Laboratory Blanks
- ✓ System Monitoring Compounds (i.e. Surrogates)
- ✓ Laboratory Control Samples/Laboratory Control Sample Duplicates (LCS/LCSD)

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Section #2.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data which are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R, the data may be used for site evaluation, with the reasons for qualification being given consideration when interpreting sample concentrations. Data points which are assigned an R qualifier should not be used for any site evaluation purposes. Data were not qualified as a result of this validation.

Data Completeness

The analyses appeared to be performed as requested on the chain-of-custody records. The associated samples were received by the laboratory and appeared to be analyzed properly. No data points were rejected. The data completeness measure for this data package is 100%.

VALIDATION CRITERIA CHECKLIST	
1. Did the laboratory identify any non-conformances related to the analytical data?	Yes
Comments: The laboratory noted in the case narrative the following non-conformance. **Method 8015B DRO Analysis:** The surrogate DNOP, associated with sample B8 new SW 3', was not recovered due to dilution.	
2. Were data qualification flags used by the laboratory? If yes, define.	Yes
Comments: The laboratory used the following data qualification flag with this data set. S – Spike recovery outside accepted recovery limits.	
3. Were sample chain-of-custody forms complete?	Yes
Comments: The COC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.	
4. Were detection limits in accordance with the QAPP, permit, or method, or indicated as acceptable by the Tier I validator?	Yes
Comments: Detection limits were reviewed and appeared to be acceptable. Dilutions from 10 to 50 times were applied by the laboratory to samples B8 new SW 3' and B8 new SE 5' for the analysis of DRO. The final usability of the data with respect to dilutions will be determined by the project team.	
5. Were the requested analytical methods in compliance with the QAPP, permit, or COC?	Yes
Comments: The requested analytical methods were in compliance with what was requested on the COC.	
6. Were samples received in good condition within method specified requirements?	Yes
Comments: Samples were received intact and in good condition. Cooler temperatures were within the 4°C +/- 2°C acceptable range at 4.0°C, as noted in the Sample Receipt Checklist. The shipping cooler was marked as being received in good condition by the laboratory on the Sample Receipt Checklist.	
7. Were samples analyzed within method specified or technical holding times?	Yes
Comments: Samples were analyzed within the acceptable hold time.	
8. Were reported units appropriate for the associated sample matrix/matrices and method(s) of analyses?	Yes
Comments: Analyte concentrations were reported in units of mg/kg. The reported units are acceptable for the soil matrix.	
9. Do the laboratory reports include all constituents requested to be reported as indicated by the Tier I validator?	Yes
Comments: As indicated on the Tier I data validation, laboratory reported constituents were in accordance with those requested.	
10. Was there indication from the laboratory that the initial or continued calibration verification results were within acceptable limits?	N/A
Comments: Initial and continuing calibration data were not included as part of this data set; however, these data are assumed to be acceptable as the laboratory did not note that any calibration verification results were outside acceptable limits.	
11. Was the total number of method blank samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Method blanks were prepared on a greater than 5% basis.	
12. Were method blank detections reported for this data set?	No
Comments: Method blank detections were not reported for this data set.	

VALIDATION CRITERIA CHECKLIST	
13. Was the total number of matrix spike samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method? Comments: Matrix spike samples were not prepared for this data set.	No
14. Were matrix spike recoveries within laboratory-specified limits? Comments: Matrix spike samples were not prepared for this data set.	N/A
15. Was the total number of laboratory control samples analyzed equal to at least 5% of the total number of samples, or analyzed as required by the method? Comments: Laboratory control samples were reported on a greater than 5% basis.	Yes
16. Were laboratory control recoveries within laboratory-specified limits? Comments: Laboratory control recoveries were within laboratory-specified limits.	Yes
17. Were surrogate recoveries within laboratory control limits? Comments: Surrogate recoveries were within laboratory control limits. **Method 8015B DRO Analysis:** The surrogate di-n-octyl phthalate (DNOP), associated with sample B8 new SW 3', was not recovered due to dilution. This is acceptable and requires no further action.	Yes
18. Was the number of equipment, trip, or field blanks collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator? Comments: There were no blank samples submitted with this data set.	No
19. Were detections found in trip blanks, equipment blanks, or field blanks? Comments: There were no blank samples submitted with this data set.	N/A
20. Were the field duplicates collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator? Comments: Field duplicates were not collected with this data set.	No
21. Were field duplicate RPD values less than the upper RPD limit (soil [50%], water [30%], or air/vapor [25%]), as specified by the laboratory or method? Comments: Field duplicates were not collected with this data set.	N/A
22. Were laboratory duplicate RPD values within laboratory-specified limits? Comments: Laboratory duplicates were not prepared for this data set.	N/A

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Friday, June 08, 2007

Steve Morris
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-3833
FAX (505) 722-0210

RE: Additional Fan Out Area Samples

Order No.: 0706077

Dear Steve Morris:

Hall Environmental Analysis Laboratory, Inc. received 4 sample(s) on 6/5/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc.

Date: *08-Jun-07*

CLIENT: Giant Refining Co
Project: Additional Fan Out Area Samples
Lab Order: 0706077

Lab ID: 0706077-01 **Collection Date:** 5/23/2007 5:30:00 PM
Client Sample ID: B8 NEW SE-S1 3' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	9300	100		mg/Kg	10	6/8/2007 12:42:34 AM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	6/8/2007 12:42:34 AM
Surr: DNOP	92.5	61.7-135		%REC	10	6/8/2007 12:42:34 AM

Lab ID: 0706077-02 **Collection Date:** 5/23/2007 5:42:00 AM
Client Sample ID: B8 NEW SE-S1 5' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	1300	100		mg/Kg	10	6/8/2007 7:30:02 AM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	6/8/2007 7:30:02 AM
Surr: DNOP	90.1	61.7-135		%REC	10	6/8/2007 7:30:02 AM

Lab ID: 0706077-03 **Collection Date:** 5/23/2007 6:05:00 PM
Client Sample ID: B8 NEW SE-S2 3' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	1300	100		mg/Kg	10	6/8/2007 1:16:40 AM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	6/8/2007 1:16:40 AM
Surr: DNOP	91.3	61.7-135		%REC	10	6/8/2007 1:16:40 AM

Lab ID: 0706077-04 **Collection Date:** 5/23/2007 6:28:00 PM
Client Sample ID: B8 NEW SE-S2 5' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/7/2007 9:16:30 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/7/2007 9:16:30 PM
Surr: DNOP	96.8	61.7-135		%REC	1	6/7/2007 9:16:30 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Additional Fan Out Area Samples **Work Order:** 0706077

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8015									
Sample ID: MB-13118		*MBLK*			Batch ID:	13118	Analysis Date:	6/7/2007 6:14:36 PM	
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-13118		*LCS*			Batch ID:	13118	Analysis Date:	6/7/2007 6:49:17 PM	
Diesel Range Organics (DRO)	42.35	mg/Kg	10	84.7	64.6	116			
Sample ID: LCSD-13118		*LCSD*			Batch ID:	13118	Analysis Date:	6/7/2007 7:23:57 PM	
Diesel Range Organics (DRO)	42.06	mg/Kg	10	84.1	64.6	116	0.687	17.4	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name GIANTREFIN

Date and Time Received: 6/5/2007

Work Order Number 0706077

Received by AT

Checklist completed by Signature Date 6/5/07

Matrix Carrier name Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☑	No ☐	N/A ☐	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace? No VOA vials submitted	☑	Yes ☐	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	11°	*4° C ± 2 Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted Date contacted: Person contacted

Contacted by: Regarding

Comments:

Corrective Action

CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☐ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: Giant Refining Company - Ciniza

Address: Route 3 Box 7
Gallup, NM 87301

Phone #: (505) 722-3833

Fax #: (505) 722-0210

Project Name: Additional Fan Out Area Samples

Project #:

Project Manager: Steve Morris (Giant)
Regina Allen (Trihydro)

Sampler: Regina Allen / Grant Price

Sample Temperature: 11°

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HNO_3	Preservative: None	HEAL No. 0706077	BTEX + MTBE + TMB's (8021)	~~BTEX + MTBE + TPH (Gasoline Only)~~ SCM	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
5/23/07	5:30 PM	Soil	B8new SE-S13'	1-4oz			X	-1			X														
5/23/07	5:42 PM	Soil	B8new SE-S15'	1-4oz			X	-2			X														

Date	Time	Relinquished By: (Signature)	Received By: (Signature)
5/24/07	12:15	[signature]	[signature] 5/24/07
6/5/07	1325	[signature]	[signature] 6/5/07 1325

Remarks: 72 hr

CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☐ Level 4 ☐
Other:

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Client: Giant Refining Company - Ciniza
Address: Route 3 Box 7
Gallup, NM 87301
Phone #: (505) 722-3833
Fax #: (505) 722-0210

Project Name: Additional Far out Area Samples
Project #:
Project Manager: Steve Morris (Giant) Regina Allen (Trihydro)
Sampler: Regina Allen / Grant Price
Sample Temperature: //

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HNO_3	Preservative: None	HEAL No. 0706077	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
5/23/07	6:05 PM	Soil	B8 new SE-52 3'	1-4oz			X	-3			X														
5/23/07	6:28 PM	Soil	B8 new SE-52 5'	1-4oz			X	-4			X														

Date	Time	Relinquished By: (Signature)	Received By: (Signature)
5/24/07	12:15	[signature]	[signature] 5/24/07
6/5/07	1325	[signature]	[signature] 6/5/07 1325

Remarks: 72 hr.

Tier II Data Validation Report Summary

Client: Western Refining Company, Gallup	Laboratory: Hall Environmental Analysis Laboratory, Inc.
Project Name: May 2007 Sampling Event	Sample Matrix: Soil
Project Number: 697-017-002	Sample Start Date: May 23, 2007
Date Validated: June 18, 2009	Sample End Date: May 23, 2007
Parameters Included: Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by Environmental Protection Agency (EPA) Method 8015B	
Laboratory Project IDs: 0706077	
Data Validator's Name: Jessica Swanson, Environmental Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services group on the analytical data report package generated by Hall Environmental Analysis Laboratory, Inc. evaluating samples from the Western Refining Company site located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Laboratory accuracy and precision was established by reviewing the demonstrated percent recoveries of laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) to verify that none of the data were biased. Method compliance was established by reviewing holding times, detection limits, surrogate recoveries, method blanks, and the LCS and LCSD percent recoveries against method specific requirements. Completeness was evaluated by determining the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody, laboratory analytical methods, and any other necessary documents associated with this analytical data set.

Data were evaluated in general accordance with validation criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-08-01, June 2008 with additional reference to USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
B8 NEW SE-S1 3'	0706077-01
B8 NEW SE-S1 5'	0706077-02
B8 NEW SE-S2 3'	0706077-03
B8 NEW SE-S2 5'	0706077-04

Tier II Data Validation Report

The samples were analyzed for client-specified analytes. Chain-of-custody (COC) completeness is included in Section #3. The laboratory data were reviewed to evaluate compliance with the required methods and the quality of the reported data. A leading check mark (✓) indicates that the referenced data were deemed acceptable. A preceding crossed circle (⊗) signifies problems with the referenced data that may have warranted attaching qualifiers to the data.

- ⊗ Data Completeness
- ✓ COC Documentation
- ⊗ Holding Times and Preservation
- ✓ Laboratory Blanks
- ✓ System Monitoring Compounds (i.e. Surrogates)
- ✓ Laboratory Control Samples/Laboratory Control Sample Duplicates (LCS/LCSD)

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Section #2.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data which are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R, the data may be used for site evaluation, with the reasons for qualification being given consideration when interpreting sample concentrations. Data points which are assigned an R qualifier should not be used for any site evaluation purposes. Data were qualified as a result of this validation for analysis past holding time and high sample temperatures.

Data qualifiers used during this validation included:

J – Estimated concentration

R - Rejected, Data not usable

Data Completeness

The analyses appeared to be performed as requested on the chain-of-custody records. The associated samples were received by the laboratory and appeared to be analyzed properly. There were five data points rejected. The data completeness measure for this data package is 37.5%.

VALIDATION CRITERIA CHECKLIST	
1. Did the laboratory identify any non-conformances related to the analytical data?	No
Comments: The laboratory did not identify any non-conformances related to this data set.	
2. Were data qualification flags used by the laboratory? If yes, define.	No
Comments: The laboratory did not use data qualification flags with this data set.	
3. Were sample chain-of-custody forms complete?	Yes
Comments: The COC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.	
4. Were detection limits in accordance with the QAPP, permit, or method, or indicated as acceptable by the Tier I validator?	Yes
Comments: Detection limits were reviewed and appeared to be acceptable. Dilutions up to 10 times were applied to some of the samples in this data set. The final usability of the data with respect to dilutions will be determined by the project team.	
5. Were the requested analytical methods in compliance with the QAPP, permit, or COC?	Yes
Comments: The requested analytical methods were in compliance with what was requested on the COC.	
6. Were samples received in good condition within method specified requirements?	No
Comments: Samples were received intact and in good condition. Cooler temperatures were above the 4°C +/- 2°C acceptable range at 11.0°C, as noted in the Sample Receipt Checklist. The shipping cooler was marked as being received in good condition by the laboratory on the Sample Receipt Checklist. **Since the samples were analyzed past the recommended holding time of 14 days for soil samples and the receipt temperature was above the recommended maximum temperature of 6°C, samples were qualified as J for detections and non-detections were rejected. The National Functional Guidelines recommends the rejection of non-detections in samples with temperatures above 6°C analyzed past 7 days.**	
7. Were samples analyzed within method specified or technical holding times?	No
Comments: Samples were analyzed past the recommended hold time as noted in question 6. Data were qualified as J or R.	
8. Were reported units appropriate for the associated sample matrix/matrices and method(s) of analyses?	Yes
Comments: Analyte concentrations were reported in units of mg/kg. The reported units are acceptable for the soil matrix.	
9. Do the laboratory reports include all constituents requested to be reported as indicated by the Tier I validator?	Yes
Comments: As indicated on the Tier I data validation, laboratory reported constituents were in accordance with those requested.	
10. Was there indication from the laboratory that the initial or continued calibration verification results were within acceptable limits?	N/A
Comments: Initial and continuing calibration data were not included as part of this data set; however, these data are assumed to be acceptable as the laboratory did not note that any calibration verification results were outside acceptable limits.	
11. Was the total number of method blank samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Method blanks were prepared on a greater than 5% basis.	
12. Were method blank detections reported for this data set?	No
Comments: Method blank detections were not reported for this data set.	

VALIDATION CRITERIA CHECKLIST	
13. Was the total number of matrix spike samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method? Comments: Matrix spike samples were not prepared for this data set.	No
14. Were matrix spike recoveries within laboratory-specified limits? Comments: Matrix spike samples were not prepared for this data set.	N/A
15. Was the total number of laboratory control samples analyzed equal to at least 5% of the total number of samples, or analyzed as required by the method? Comments: Laboratory control samples were reported on a greater than 5% basis.	Yes
16. Were laboratory control recoveries within laboratory-specified limits? Comments: Laboratory control recoveries were within laboratory-specified limits.	Yes
17. Were surrogate recoveries within laboratory control limits? Comments: Surrogate recoveries were within laboratory control limits.	Yes
18. Was the number of equipment, trip, or field blanks collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator? Comments: There were no blank samples submitted with this data set.	No
19. Were detections found in trip blanks, equipment blanks, or field blanks? Comments: There were no blank samples submitted with this data set.	N/A
20. Were the field duplicates collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator? Comments: There were no field duplicates collected with this data set.	Yes
21. Were field duplicate RPD values less than the upper RPD limit (soil [50%], water [30%], or air/vapor [25%]), as specified by the laboratory or method? Comments: There were no field duplicates collected with this data set.	N/A
22. Were laboratory duplicate RPD values within laboratory-specified limits? Comments: Laboratory duplicates were not prepared for this data set.	N/A

DATA QUALIFICATION SUMMARY

Analyte	Client Sample ID	Laboratory Assigned ID	Laboratory Result (mg/kg)	Reviewer Qualifier	Reason for Qualification
DRO	B8 NEW SE-S1 3'	0706077-01	9300	J	Sample was analyzed outside of the acceptable holding time. Sample preservation for temperature exceeded 6 degrees Celsius indicating possible volatilization.
DRO	B8 NEW SE-S1 5'	0706077-02	1300	J	Sample was analyzed outside of the acceptable holding time. Sample preservation for temperature exceeded 6 degrees Celsius indicating possible volatilization.
DRO	B8 NEW SE-S2 3'	0706077-03	1300	J	Sample was analyzed outside of the acceptable holding time. Sample preservation for temperature exceeded 6 degrees Celsius indicating possible volatilization.
DRO	B8 NEW SE-S2 5'	0706077-04	ND (10)	R	Sample was analyzed outside of the acceptable holding time. Sample preservation for temperature exceeded 6 degrees Celsius indicating possible volatilization.
MRO	B8 NEW SE-S1 3'	0706077-01	ND (500)	R	Sample was analyzed outside of the acceptable holding time. Sample preservation for temperature exceeded 6 degrees Celsius indicating possible volatilization.
MRO	B8 NEW SE-S1 5'	0706077-02	ND (500)	R	Sample was analyzed outside of the acceptable holding time. Sample preservation for temperature exceeded 6 degrees Celsius indicating possible volatilization.
MRO	B8 NEW SE-S2 3'	0706077-03	ND (500)	R	Sample was analyzed outside of the acceptable holding time. Sample preservation for temperature exceeded 6 degrees Celsius indicating possible volatilization.
MRO	B8 NEW SE-S2 5'	0706077-04	ND (50)	R	Sample was analyzed outside of the acceptable holding time. Sample preservation for temperature exceeded 6 degrees Celsius indicating possible volatilization.

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Wednesday, August 29, 2007

Steve Morris
Giant Refining Company
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-3833
FAX (505) 722-0210

RE: Fan Out Area

Order No.: 0708284

Dear Steve Morris:

Hall Environmental Analysis Laboratory, Inc. received 15 sample(s) on 8/21/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001

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505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc.

Date: *29-Aug-07*

CLIENT: Giant Refining Company
Project: Fan Out Area

Lab Order: 0708284

Lab ID: 0708284-01 **Collection Date:** 8/20/2007 2:50:00 PM
Client Sample ID: B8_8_20_A_7' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	5500	100		mg/Kg	10	8/21/2007 9:42:58 PM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	8/21/2007 9:42:58 PM
Surr: DNOP	84.0	61.7-135		%REC	10	8/21/2007 9:42:58 PM

Lab ID: 0708284-02 **Collection Date:** 8/20/2007 11:15:00 AM
Client Sample ID: B8_8_20_B_7' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	2600	100		mg/Kg	10	8/22/2007 1:51:07 AM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	8/22/2007 1:51:07 AM
Surr: DNOP	80.1	61.7-135		%REC	10	8/22/2007 1:51:07 AM

Lab ID: 0708284-03 **Collection Date:** 8/20/2007 1:35:00 PM
Client Sample ID: B8_8_20_C_3' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	3400	100		mg/Kg	10	8/22/2007 2:26:23 AM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	8/22/2007 2:26:23 AM
Surr: DNOP	83.6	61.7-135		%REC	10	8/22/2007 2:26:23 AM

Lab ID: 0708284-04 **Collection Date:** 8/20/2007 1:50:00 PM
Client Sample ID: B8_8_20_C_5' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	660	10		mg/Kg	1	8/22/2007 12:05:16 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/22/2007 12:05:16 AM
Surr: DNOP	99.7	61.7-135		%REC	1	8/22/2007 12:05:16 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *29-Aug-07*

CLIENT: Giant Refining Company
Project: Fan Out Area

Lab Order: 0708284

Lab ID: 0708284-05 **Collection Date:** 8/20/2007 12:15:00 PM
Client Sample ID: B8_8_20_D_3' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	77	10		mg/Kg	1	8/22/2007 12:40:32 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/22/2007 12:40:32 AM
Surr: DNOP	70.4	61.7-135		%REC	1	8/22/2007 12:40:32 AM

Lab ID: 0708284-06 **Collection Date:** 8/20/2007 12:30:00 PM
Client Sample ID: B8_8_20_D_5' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	150	10		mg/Kg	1	8/22/2007 1:15:52 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/22/2007 1:15:52 AM
Surr: DNOP	116	61.7-135		%REC	1	8/22/2007 1:15:52 AM

Lab ID: 0708284-07 **Collection Date:** 8/20/2007 4:00:00 PM
Client Sample ID: B8_8_20_E_3' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	2200	200		mg/Kg	20	8/22/2007 3:36:25 AM
Motor Oil Range Organics (MRO)	ND	1000		mg/Kg	20	8/22/2007 3:36:25 AM
Surr: DNOP	76.2	61.7-135		%REC	20	8/22/2007 3:36:25 AM

Lab ID: 0708284-08 **Collection Date:** 8/20/2007 5:00:00 PM
Client Sample ID: B8_8_20_F_3' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	3500	200		mg/Kg	20	8/22/2007 4:11:27 AM
Motor Oil Range Organics (MRO)	ND	1000		mg/Kg	20	8/22/2007 4:11:27 AM
Surr: DNOP	84.4	61.7-135		%REC	20	8/22/2007 4:11:27 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *29-Aug-07*

CLIENT: Giant Refining Company
Project: Fan Out Area

Lab Order: 0708284

Lab ID: 0708284-09 **Collection Date:** 8/20/2007 5:40:00 PM
Client Sample ID: B8_8_20_G_3' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	440	10		mg/Kg	1	8/21/2007 10:18:56 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/21/2007 10:18:56 PM
Surr: DNOP	88.6	61.7-135		%REC	1	8/21/2007 10:18:56 PM

Lab ID: 0708284-10 **Collection Date:** 8/21/2007 11:40:00 AM
Client Sample ID: B8_8_21_H_3' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	3100	200		mg/Kg	20	8/22/2007 4:46:26 AM
Motor Oil Range Organics (MRO)	ND	1000		mg/Kg	20	8/22/2007 4:46:26 AM
Surr: DNOP	67.8	61.7-135		%REC	20	8/22/2007 4:46:26 AM

Lab ID: 0708284-11 **Collection Date:** 8/21/2007 11:15:00 AM
Client Sample ID: B8_8_21_I_3' **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	8600	200		mg/Kg	20	8/22/2007 5:21:23 AM
Motor Oil Range Organics (MRO)	ND	1000		mg/Kg	20	8/22/2007 5:21:23 AM
Surr: DNOP	93.2	61.7-135		%REC	20	8/22/2007 5:21:23 AM

Lab ID: 0708284-12 **Collection Date:** 8/20/2007
Client Sample ID: BD082007 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	4800	200		mg/Kg	20	8/22/2007 5:56:09 AM
Motor Oil Range Organics (MRO)	ND	1000		mg/Kg	20	8/22/2007 5:56:09 AM
Surr: DNOP	65.4	61.7-135		%REC	20	8/22/2007 5:56:09 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *29-Aug-07*

CLIENT: Giant Refining Company
Project: Fan Out Area
Lab Order: 0708284

Lab ID: 0708284-13
Collection Date: 8/20/2007 7:30:00 PM
Client Sample ID: Equipment Blank
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/28/2007 5:38:10 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/28/2007 5:38:10 PM
Surr: DNOP	165	58-140	S	%REC	1	8/28/2007 5:38:10 PM

Lab ID: 0708284-14
Collection Date: 8/20/2007 2:45:00 PM
Client Sample ID: B8_NE_8_20_5'
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	2200	100		mg/Kg	10	8/22/2007 6:30:52 AM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	8/22/2007 6:30:52 AM
Surr: DNOP	83.0	61.7-135		%REC	10	8/22/2007 6:30:52 AM

Lab ID: 0708284-15
Collection Date: 8/21/2007 9:50:00 AM
Client Sample ID: Equipment Blank
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/28/2007 6:13:59 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/28/2007 6:13:59 PM
Surr: DNOP	173	58-140	S	%REC	1	8/28/2007 6:13:59 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Giant Refining Company
Project: Fan Out Area

Work Order: 0708284

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8015									
Sample ID: 0708284-09AMSD		*MSD*			Batch ID:	**13663**	Analysis Date:	8/21/2007 11:30:01 PM	
Diesel Range Organics (DRO)	433.1	mg/Kg	10	-6.42	67.4	117	3.06	17.4	S
Sample ID: MB-13663		*MBLK*			Batch ID:	**13663**	Analysis Date:	8/21/2007 7:19:54 PM	
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-13663		*LCS*			Batch ID:	**13663**	Analysis Date:	8/21/2007 7:55:43 PM	
Diesel Range Organics (DRO)	43.65	mg/Kg	10	87.3	64.6	116			
Sample ID: LCSD-13663		*LCSD*			Batch ID:	**13663**	Analysis Date:	8/21/2007 9:07:08 PM	
Diesel Range Organics (DRO)	46.76	mg/Kg	10	93.5	64.6	116	6.87	17.4	
Sample ID: 0708284-09AMS		*MS*			Batch ID:	**13663**	Analysis Date:	8/22/2007 7:05:36 AM	
Diesel Range Organics (DRO)	446.6	mg/Kg	10	20.5	67.4	117			S
Method: SW8015									
Sample ID: MB-13694		*MBLK*			Batch ID:	**13694**	Analysis Date:	8/28/2007 3:13:26 PM	
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-13694		*LCS*			Batch ID:	**13694**	Analysis Date:	8/28/2007 3:49:35 PM	
Diesel Range Organics (DRO)	6.735	mg/L	1.0	135	74	157			
Sample ID: LCSD-13694		*LCSD*			Batch ID:	**13694**	Analysis Date:	8/28/2007 4:25:47 PM	
Diesel Range Organics (DRO)	7.021	mg/L	1.0	140	74	157	4.15	23	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name GIANTREFIN

Date and Time Received: 8/21/2007

Work Order Number 0708284

Received by TLS

Checklist completed by 8/21/07
Signature Date

Matrix Carrier name Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☑	No ☐	N/A ☐	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	

Container/Temp Blank temperature? *4° C ± 2 Acceptable*
If given sufficient time to cool.

COMMENTS:

Client contacted Date contacted: Person contacted

Contacted by: Regarding

Comments:

Corrective Action

CHAIN-OF-CUSTODY RECORD

QA / QC Package: Std ☑ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: ~~Western~~ Giant Refining ~~Ginza Refinery~~ AT
Address: Route 3 Box 7
Gallup, NM 87301
Phone #: 505 722 3833
Fax #: 505 722 0210

Project Name: Fan Out Area
Project #:
Project Manager: Steve Morris
Sampler: G. Price / R. Allen
Sample Temperature: 13°

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative None	HEAL No. 0708284	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
8/20/07	1450	Soil	B8_8_20_A_7'	1/4oz			X	-1			X														
8/20	1115		B8_8_20_B_7'					-2																	
8/20	~~1215~~ 1335		B8_8_20_C_3'					-3																	
8/20	1350		B8_8_20_C_5'					-4																	
8/20	1215		B8_8_20_D_3'					-5																	
8/20	1230		B8_8_20_D_5'					-6																	
8/20	1600		B8_8_20_E_3'					-7																	
8/20	1700		B8_8_20_F_3'					-8																	
8/20	1710		B8_8_20_G_3'					-9																	
8/21	1140		B8_8_21_H_3'					-10																	
8/21	1115		B8_8_21_I_3'					-11																	
8/20			B0082007					-12																	

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
8/21	1300	[signature]	[signature]
8/21/07	1537	[signature]	[signature] 8/21/07 1537

Remarks: 24 hour rush except BD

CHAIN-OF-CUSTODY RECORD

QA / QC Package: Std ☑ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: ~~Western~~ Giant Refining ~~Ciniza Refinery~~ Inc
Address: Route 3 Box 7
Gallup, NM 87301
Phone #: 505 722 3833
Fax #: 505 722 0210

Project Name: Far Out Area
Project #:
Project Manager: Steve Morris
Sampler: G. Price / R. Allen
Sample Temperature: 13°

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HNO_3	Preservative: HCL	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
8/20/07	1740	Soil	MS_G3	1/4oz	NONE			-9			X														
8/20/07	1740	Soil	MSD_G3	1/4oz	NONE			-9			X														
8/20/07	1930	Water	Equipment Blank	3/VOA			✓	-13			X														
8/20/07	1445	Soil	B8-NE_8.20.5'	1/4oz	NONE			-14			X														
8/21/07	9:50	Water	Equipment Blank	3/VOA			✓	-15			X														

Date	Time	Relinquished By: (Signature)	Received By: (Signature)
8/21	1300	[signature]	[signature]
8/21/07	1535	[signature]	[signature] 8/21/07 1535

Remarks: 24 hour rush except EBs/MS/MSDs

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Tuesday, September 04, 2007

Steve Morris
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-3833
FAX (505) 722-0210

RE: Fan Out Area

Order No.: 0708324

Dear Steve Morris:

Hall Environmental Analysis Laboratory, Inc. received 14 sample(s) on 8/24/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001

ACCREDITED IN ACCORDANCE WITH nelac

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc.

Date: *04-Sep-07*

CLIENT: Giant Refining Co
Project: Fan Out Area

Lab Order: 0708324

Lab ID: 0708324-01 **Collection Date:** 8/21/2007 9:30:00 AM
Client Sample ID: B8_8_21_J_5 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/30/2007 3:53:21 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/30/2007 3:53:21 AM
Surr: DNOP	93.0	61.7-135		%REC	1	8/30/2007 3:53:21 AM

Lab ID: 0708324-02 **Collection Date:** 8/21/2007 11:45:00 AM
Client Sample ID: B8_8_21_H_5 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/30/2007 5:03:19 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/30/2007 5:03:19 AM
Surr: DNOP	93.0	61.7-135		%REC	1	8/30/2007 5:03:19 AM

Lab ID: 0708324-03 **Collection Date:** 8/21/2007 12:12:00 PM
Client Sample ID: B8_8_21_L_5 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	71	10		mg/Kg	1	8/30/2007 5:38:22 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/30/2007 5:38:22 AM
Surr: DNOP	90.0	61.7-135		%REC	1	8/30/2007 5:38:22 AM

Lab ID: 0708324-04 **Collection Date:** 8/21/2007 11:25:00 AM
Client Sample ID: B8_8_21_I_5 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: SCC
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/30/2007 6:13:13 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/30/2007 6:13:13 AM
Surr: DNOP	89.5	61.7-135		%REC	1	8/30/2007 6:13:13 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *04-Sep-07*

CLIENT: Giant Refining Co
Project: Fan Out Area

Lab Order: 0708324

Lab ID: 0708324-05 **Collection Date:** 8/21/2007 9:20:00 AM
Client Sample ID: B8_8_21_J_3 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	250	10		mg/Kg	1	8/30/2007 6:48:10 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/30/2007 6:48:10 AM
Surr: DNOP	108	61.7-135		%REC	1	8/30/2007 6:48:10 AM

Lab ID: 0708324-06 **Collection Date:** 8/20/2007 3:20:00 PM
Client Sample ID: B8_8_20_A_9 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	19000	200		mg/Kg	20	8/30/2007 4:49:05 PM
Motor Oil Range Organics (MRO)	ND	1000		mg/Kg	20	8/30/2007 4:49:05 PM
Surr: DNOP	92.4	61.7-135		%REC	20	8/30/2007 4:49:05 PM

Lab ID: 0708324-07 **Collection Date:** 8/21/2007 12:05:00 PM
Client Sample ID: B8_8_21_L_3 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	42	10		mg/Kg	1	8/30/2007 7:57:49 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/30/2007 7:57:49 AM
Surr: DNOP	122	61.7-135		%REC	1	8/30/2007 7:57:49 AM

Lab ID: 0708324-08 **Collection Date:** 8/20/2007 4:15:00 PM
Client Sample ID: B8_8_20_E_5 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/30/2007 8:32:52 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/30/2007 8:32:52 AM
Surr: DNOP	76.1	61.7-135		%REC	1	8/30/2007 8:32:52 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *04-Sep-07*

CLIENT: Giant Refining Co
Project: Fan Out Area

Lab Order: 0708324

Lab ID: 0708324-09 **Collection Date:** 8/20/2007 5:25:00 PM
Client Sample ID: B8_8_20_F_5 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/30/2007 9:07:58 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/30/2007 9:07:58 AM
Surr: DNOP	89.8	61.7-135		%REC	1	8/30/2007 9:07:58 AM

Lab ID: 0708324-10 **Collection Date:** 8/20/2007 6:40:00 PM
Client Sample ID: B8_8_20_M_5 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/30/2007 9:42:59 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/30/2007 9:42:59 AM
Surr: DNOP	98.0	61.7-135		%REC	1	8/30/2007 9:42:59 AM

Lab ID: 0708324-11 **Collection Date:** 8/20/2007 7:00:00 PM
Client Sample ID: B8_8_20_K_3 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	4700	100		mg/Kg	10	8/30/2007 10:17:56 AM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	8/30/2007 10:17:56 AM
Surr: DNOP	98.5	61.7-135		%REC	10	8/30/2007 10:17:56 AM

Lab ID: 0708324-12 **Collection Date:** 8/20/2007 11:50:00 AM
Client Sample ID: B8_8_20_B_9 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/30/2007 11:28:12 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/30/2007 11:28:12 AM
Surr: DNOP	81.7	61.7-135		%REC	1	8/30/2007 11:28:12 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *04-Sep-07*

CLIENT: Giant Refining Co
Project: Fan Out Area

Lab Order: 0708324

Lab ID: 0708324-13 **Collection Date:** 8/20/2007 6:20:00 PM
Client Sample ID: B8_8_20_M_3 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	4000	100		mg/Kg	10	8/30/2007 12:03:48 PM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	8/30/2007 12:03:48 PM
Surr: DNOP	81.1	61.7-135		%REC	10	8/30/2007 12:03:48 PM

Lab ID: 0708324-14 **Collection Date:** 8/20/2007 7:20:00 PM
Client Sample ID: B8_8_20_K_5 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/30/2007 12:39:03 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/30/2007 12:39:03 PM
Surr: DNOP	85.7	61.7-135		%REC	1	8/30/2007 12:39:03 PM

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area

Work Order: 0708324

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8015									
Sample ID: 0708324-13AMSD		*MSD*			Batch ID:	**13705**	Analysis Date:	8/31/2007 6:53:24 PM	
Diesel Range Organics (DRO)	2413	mg/Kg	100	-3230	67.4	117	78.6	17.4	SR
Sample ID: MB-13705		*MBLK*			Batch ID:	**13705**	Analysis Date:	8/28/2007 1:25:04 PM	
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: MB-13704		*MBLK*			Batch ID:	**13704**	Analysis Date:	8/28/2007 8:01:13 PM	
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-13705		*LCS*			Batch ID:	**13705**	Analysis Date:	8/28/2007 2:00:57 PM	
Diesel Range Organics (DRO)	43.37	mg/Kg	10	86.7	64.6	116			
Sample ID: LCS-13704		*LCS*			Batch ID:	**13704**	Analysis Date:	8/28/2007 8:36:31 PM	
Diesel Range Organics (DRO)	42.15	mg/Kg	10	84.3	64.6	116			
Sample ID: LCSD-13705		*LCSD*			Batch ID:	**13705**	Analysis Date:	8/28/2007 2:37:14 PM	
Diesel Range Organics (DRO)	48.14	mg/Kg	10	96.3	64.6	116	10.4	17.4	
Sample ID: LCSD-13704		*LCSD*			Batch ID:	**13704**	Analysis Date:	8/28/2007 9:11:45 PM	
Diesel Range Organics (DRO)	43.95	mg/Kg	10	87.9	64.6	116	4.18	17.4	
Sample ID: 0708324-13AMS		*MS*			Batch ID:	**13705**	Analysis Date:	8/31/2007 6:17:50 PM	
Diesel Range Organics (DRO)	5535	mg/Kg	100	3020	67.4	117			S

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name GIANTREFIN

Date and Time Received: 8/24/2007

Work Order Number 0708324

Received by AT

Checklist completed by Signature Date 8/24/07

Matrix Carrier name Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☑	No ☐	N/A ☐	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace? No VOA vials submitted	☑	Yes ☐	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	

Container/Temp Blank temperature? 18° *4° C ± 2 Acceptable* If given sufficient time to cool.

COMMENTS:

Client contacted Date contacted: Person contacted

Contacted by: Regarding

Comments: Per SM BB-8-26-H-5 is correct Sample ID AT 8/24/07

per Regina Allen Requested Sample ID Changed to BB_8-21-H-5 AT 8/27/07

Corrective Action

1 of 2

CHAIN-OF-CUSTODY RECORD

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

QA / QC Package: Std ☒ Level 4 ☐ Other:

Client: Giant Refining Ariza Refinery
Address: Route 3 Box 7 Gallup, NM 87301
Phone #: 505-722-3833
Fax #: 505-722-0210

Project Name: Fan Out Area
Project #:
Project Manager: Steve Morris
Sampler: R. Allen / G. Price
Sample Temperature: 18°

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	HNO_3	None	HEAL No. 0708324	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
8/21/07	930	Soil	B8-8-21-J-5	1/4oz			X	-1			X														
8/21/07	1145	Soil	B8-8-21-H-5	1/4oz			X	-2			X														
8/21/07	1212	Soil	B8-8-21-L-5	1/4oz			X	-3			X														
8/21/07	1125	Soil	B8-8-21-I-5	1/4oz			X	-4			X														
8/21/07	920	Soil	B8-8-21-J-3	1/4oz			X	-5			X														
8/20/07	1520	Soil	B8-8-20-A-9	1/4oz			X	-6			X														
8/21/07	1205	Soil	B8-8-21-L-3	1/4oz			X	-7			X														
8/20/07	1615	Soil	B8-8-20-E-5	1/4oz			X	-8			X														
8/20/07	1725	Soil	B8-8-20-F-5	1/4oz			X	-9			X														
8/20/07	1840	Soil	B8-8-20-M-5	1/4oz			X	-10			X														
8/20/07	1900	Soil	B8-8-20-K-3	1/4oz			X	-11			X														
8/20/07	1150	Soil	B8-8-20-B-9	1/4oz			X	-12			X														

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
8/21/07	1300	Regina Allen	8/23/07
8/21/07	1537		1213

Remarks: Std turnaround time *

CHAIN-OF-CUSTODY RECORD

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

2 of 2

Client: Giant Refining Ciniza Refinery
Address: Route 3 Box 7 Gallup, NM 87301
Phone #: 505-722-3833
Fax #: 505-722-0210

QA / QC Package: Std ☒ Level 4 ☐ Other:
Project Name: Fan out Area
Project #:
Project Manager: Steve Morris
Sampler: R. Allen / G. Price
Sample Temperature: 18°C

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	HNO_3	None	HEAL No. 0708324	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH (Method 8015B (Gas/Diesel))	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
8/20/07	1820	Soil	BS-8-20-M-3	1/4oz			X	-13			X														
8/20/07	1920	Soil	BS-8-20-K-5	1/4oz			X	-14			X														

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	
8/21	1800	Regina Allen	[signature]	8/23/07
8/21/07	1537			1213

Remarks: Standard turnaround time

Tier 2 Data Validation Report

Client: Giant Refining	Laboratory: Hall Environmental
Project Name: Ciniza Additional Soil Sampling and Excavation	Sample Matrix: Soil
Project Number: 072-013-001	Sample Start Date: See Samples Analyzed
Date Validated: November 10, 2007	Sample End Date: See Samples Analyzed

Samples Analyzed:
Data Set 0708324: B8_8_21_J_5, B8_8_21_H_5, B8_8_21_L_5, B8_8_21_I_5, B8_8_21_J_3, B8_8_20_A_9, B8_8_21_L_3, B8_8_20_E_5, B8_8_20_F_5, B8_8_20_M_5, B8_8_20_K_3, B8_8_20_B_9, B8_8_20_M_3, and B8_8_20_K_5 (Collected on August 20 and 21, 2007)
Data Set 0708284: B8_8_20_A_7, B8_8_20_B_7, B8_8_20_C_3, B8_8_20_C_5, B8_8_20_D_3, B8_8_20_D_5, B8_8_20_E_3, B8_8_20_F_3, B8_8_20_G_3, B8_8_21_H_3, B8_8_21_I_3, BD082007, Equipment Blank, B8_NE_8_20_5, Equipment Blank (Collected on August 20 and 21, 2007)

Parameters: Diesel Range Organics

Laboratory Project ID: 0708324 and 0708284

Data Validator: Nella Kashani, Environmental Chemist

Precision, Accuracy, Method Compliance, Completeness Assessment

Precision Acceptable

Comments: Precision is the measure of variability of sample measurements. Field precision is determined by a comparison of field duplicate sample results. Laboratory precision is determined by examining the laboratory duplicate results. Evaluation of both the field and laboratory duplicates for precision was accomplished using the relative percent difference (RPD). The RPD is defined as the difference between the primary and duplicate samples divided by the mean and expressed as a percentage. One field duplicate was collected in data set 0708284. Sample BD082007 was collected as a duplicate of sample B8_8_20_E_3. The RPD value was reported to be above the acceptable limit. All associated results will be qualified 'J' since a high RPD value may indicate poor repeatability. In addition, the MS/MSD RPD value in data set 0708324 was reported to be above the acceptable RPD limit. As a result, all data will be qualified 'J/UJ' due to possible poor repeatability.

Accuracy Acceptable

Comments: Accuracy is a measure of sampling and analysis bias. Field accuracy is determined by collecting field, trip and equipment blanks to monitor for possible ambient or cross contamination during sampling. A total of two equipment blanks were reported in data set 0708284. There were no detections reported in the equipment blanks.

Laboratory accuracy is measured by evaluating laboratory control sample (LCS) and MS/MSD recoveries. LCS and MS/MSD recoveries were compared to published or laboratory control limits. All LCS recoveries were acceptable. However, several MS/MSD recoveries were reported to be outside of the control limits. All data were qualified as a result of out of range MS/MSD's.

Method Compliance Acceptable

Comments: Method compliance was determined by reviewing the holding times, detection limits, surrogate recoveries, method blanks, and laboratory control samples against method specific requirements. The sample temperatures were reported to be above the acceptable limit of 6 degrees Celsius in both data sets. This occurrence does not seem to negatively affect the quality of the data since the samples were delivered shortly after they were sampled and since they were analyzed within hold time. In addition, some surrogate recoveries were reported to be outside of the control limits. No results were qualified as a result of out range surrogate recoveries since they were associated with equipment blanks only. All other criteria for method compliance were acceptable.

Completeness Acceptable

Comments: Completeness is the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody and laboratory analytical methods. Completeness also includes a review of the analytical reports and QC summary report. No data were rejected; therefore, this data set is 100% complete.

Validation Criteria Checklist	
Data validation flags used in this review: J-estimated value and UJ-estimated value; non-detect	
1. Did the laboratory identify any non-conformances related to the analytical data?	Yes
Comments: In data set 0708324, the laboratory noted that sample B8_8_26_H_5 was labeled incorrectly and per the project manager's request the ID was changed to B8_8_21_H_5.	
2. Were sample chain-of-custody forms complete?	No
Comments: All chain-of-custody forms were complete from the field to the laboratory, with one exception. In data set 0708324, the laboratory noted that sample B8_8_26_H_5 was labeled incorrectly and per the project manager's request the ID was changed to B8_8_21_H_5.	
3. Were detection limits in accordance with the QAPP, permit, or method?	Yes
Comments: Detection limits were acceptable. Some dilutions were required; however, they were necessary due to high concentrations of target analytes.	
4. Were the requested analytical methods in compliance with the QAPP, permit, or COC?	Yes
Comments: All reported analytical methods were in compliance with those requested on the chain-of-custody form.	
5. Were samples received in good condition?	No
Comments: Sample temperatures were reported to be high in both data sets (0708324: 18 degrees Celsius and 0708284: 13 degrees Celsius). This occurrence does not seem to negatively affect the quality of the data since the samples were delivered shortly after they were sampled and were not yet cooled, and since they were analyzed within hold time.	
6. Were sample holding times met?	Yes
Comments: All samples were extracted and analyzed within the acceptable hold time.	
7. Were correct concentration units reported?	Yes
Comments: Results were reported in units of mg/kg, which is acceptable based on the soil matrix.	
8. Do the laboratory reports include all constituents requested to be reported for a specific analytical method?	Yes
Comments: Reported constituents were in accordance with those requested on the chain-of-custody form.	
9. Were the reporting requirements for flagged data met?	Yes
Comments: No data were qualified by the laboratory; however, the laboratory did qualify quality control data due to out of range recovery results.	
10. Is there indication that the continuous calibration verification was within acceptable limits?	Yes
Comments: Calibration data were not included as part of this data review; however, all data seem to be acceptable based on other QC data.	
11. Were the instrument calibrations within method control limits?	Yes
Comments: Calibration data were not included as part of this data review; however, all data seem to be acceptable based on other QC data.	
12. Were method blank samples analyzed on a 5% basis?	Yes
Comments: Method blanks were reported on a greater than 5% basis.	
13. Were method blank detections reported for this data set?	No
Comments: There were no detections reported in the method blanks.	
14. Were matrix spike samples prepared on a 5% basis?	Yes
Comments: In data set 0708324, the MS/MSD pair was prepared from sample B8_8_20_M_3 of this data set. In data set 0708284, the MS/MSD pair was prepared from sample B8_8_20_G_3 of this data set.	

Validation Criteria Checklist	
15. Were matrix spike recoveries within acceptable limits?	No
Comments: In data set 0708324, the MS/MSD recoveries for DRO (3020% and -3230%; acceptable range 67.4-117%) were reported to be outside of the control limits. In addition, the RPD value (78.6%; acceptable range 0-17.4%) was reported to be above the acceptable RPD limit. As a result, all data will be qualified 'J/UJ' due possible biased results and possible poor repeatability. In data set 0708284, the MS/MSD recoveries for DRO (-6.42% and 20.5%; acceptable range 67.4-117%) were reported to be outside of the control limits. As a result, all results will be qualified 'J/UJ' due to a possible low bias.	
16. Were laboratory control samples analyzed on a 5% basis?	Yes
Comments: Laboratory control samples were analyzed on a 5% basis.	
17. Were laboratory control recoveries within acceptable limits?	Yes
Comments: All laboratory control recoveries were acceptable.	
18. Were surrogate recoveries within control limits?	No
Comments: In data set 0708284, the surrogate recoveries for both equipment blanks (165% and 173%; acceptable range 58-140%) were reported to be outside of the control limits. No qualification is necessary since there were no detections reported in either equipment blank.	
19. Were equipment blanks and field blanks collected on a 10% basis?	Yes
Comments: A total of two equipment blanks were collected in data set 0708284.	
20. Were detections found in trip blanks, equipment blanks, or field blanks?	No
Comments: There were no detections reported in the equipment blanks.	
21. Were field duplicates collected on a 10% basis?	Yes
Comments: Sample BD082007 was collected as a duplicate of sample B8_8_20_E_3.	
22. Were field duplicate RPD values less than 30%?	No
Comments: The RPD value was reported to be above the acceptable limit. All associated results will be qualified 'J' since a high RPD value may indicate poor repeatability.	
23. General Comments: Data were presented in a clear and complete manner. No data were rejected; therefore, this data set is 100% complete.	

TABLE 1. DATA QUALIFICATION, CINIZA ADDITIONAL SOIL SAMPLING AND EXCAVATION GIANT REFINING, CINIZA, NEW MEXICO

Analyte	Sample ID	Laboratory Assigned ID	Laboratory Result (mg/kg)	Flag	Reason
DRO	All Samples	All Samples (0708284)	Detect/Non-Detect	J (Detect)/UJ (Non-Detect)	Out of Range MS/MSD Results
DRO	All Samples	All Samples (0708324)	Detect/Non-Detect	J (Detect)/UJ (Non-Detect)	Out of Range MS/MSD Results
DRO	B8_8_20_E_3	0708284-07	2200	J	High RPD Value
DRO	BD082007	0708284-12	4800	J	High RPD Value

J – Indicates estimated detection.
UJ – Indicates estimated detection below the reporting limit.

TABLE 2. FIELD DUPLICATE SUMMARY, CINIZA ADDITIONAL SOIL SAMPLING AND EXCAVATION GIANT REFINING, CINIZA, NEW MEXICO

Sample ID: B8_8_20_E_3/Field Duplicate ID: BD082007			
Analyte	**Laboratory Result (mg/kg)**	**Duplicate Result (mg/kg)**	**Relative Percent Difference (RPD)**
Diesel Range Organics	2200	4800	**74.3%**

Field duplicate RPD control limits should not exceed 30% as established by USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, February 1988.

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Thursday, December 20, 2007

Steve Morris
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-3833
FAX (505) 722-0210

RE: Fan Out Area December 07

Order No.: 0712257

Dear Steve Morris:

Hall Environmental Analysis Laboratory, Inc. received 18 sample(s) on 12/18/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc.

Date: *20-Dec-07*

CLIENT: Giant Refining Co
Project: Fan Out Area December 07
Lab Order: 0712257

Lab ID: 0712257-01 **Collection Date:** 12/17/2007 11:30:00 AM
Client Sample ID: B8_12_17_B_8 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/20/2007 4:05:04 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/20/2007 4:05:04 AM
Surr: DNOP	85.3	61.7-135		%REC	1	12/20/2007 4:05:04 AM

Lab ID: 0712257-02 **Collection Date:** 12/17/2007 11:45:00 AM
Client Sample ID: B8_12_17_B_13 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/20/2007 4:40:04 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/20/2007 4:40:04 AM
Surr: DNOP	74.4	61.7-135		%REC	1	12/20/2007 4:40:04 AM

Lab ID: 0712257-03 **Collection Date:** 12/17/2007 11:55:00 AM
Client Sample ID: B8_12_17_B_18 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/20/2007 5:15:04 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/20/2007 5:15:04 AM
Surr: DNOP	76.7	61.7-135		%REC	1	12/20/2007 5:15:04 AM

Lab ID: 0712257-04 **Collection Date:** 12/17/2007 12:05:00 PM
Client Sample ID: B8_12_17_B_23 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/20/2007 5:50:07 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/20/2007 5:50:07 AM
Surr: DNOP	82.9	61.7-135		%REC	1	12/20/2007 5:50:07 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *20-Dec-07*

CLIENT: Giant Refining Co
Project: Fan Out Area December 07
Lab Order: 0712257

Lab ID: 0712257-05 **Collection Date:** 12/17/2007 12:50:00 PM
Client Sample ID: B8_12_17_M1_3 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/20/2007 6:25:08 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/20/2007 6:25:08 AM
Surr: DNOP	112	61.7-135		%REC	1	12/20/2007 6:25:08 AM

Lab ID: 0712257-06 **Collection Date:** 12/17/2007 1:00:00 PM
Client Sample ID: B8_12_17_M1_8 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/20/2007 6:59:47 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/20/2007 6:59:47 AM
Surr: DNOP	66.5	61.7-135		%REC	1	12/20/2007 6:59:47 AM

Lab ID: 0712257-07 **Collection Date:** 12/17/2007 1:10:00 PM
Client Sample ID: B8_12_17_M1_13 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/20/2007 7:34:46 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/20/2007 7:34:46 AM
Surr: DNOP	86.9	61.7-135		%REC	1	12/20/2007 7:34:46 AM

Lab ID: 0712257-08 **Collection Date:** 12/17/2007 1:55:00 PM
Client Sample ID: B8_12_17_I1_3 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/19/2007 4:26:45 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/19/2007 4:26:45 PM
Surr: DNOP	107	61.7-135		%REC	1	12/19/2007 4:26:45 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *20-Dec-07*

CLIENT: Giant Refining Co
Project: Fan Out Area December 07
Lab Order: 0712257

Lab ID: 0712257-09 **Collection Date:** 12/17/2007 2:05:00 PM
Client Sample ID: B8_12_17_I1_8 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/19/2007 4:56:53 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/19/2007 4:56:53 PM
Surr: DNOP	102	61.7-135		%REC	1	12/19/2007 4:56:53 PM

Lab ID: 0712257-10 **Collection Date:** 12/17/2007 2:15:00 PM
Client Sample ID: B8_12_17_I1_13 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/19/2007 5:27:16 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/19/2007 5:27:16 PM
Surr: DNOP	95.9	61.7-135		%REC	1	12/19/2007 5:27:16 PM

Lab ID: 0712257-11 **Collection Date:** 12/17/2007
Client Sample ID: BD_12_17_07 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/19/2007 5:57:40 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/19/2007 5:57:40 PM
Surr: DNOP	75.1	61.7-135		%REC	1	12/19/2007 5:57:40 PM

Lab ID: 0712257-12 **Collection Date:** 12/17/2007 3:05:00 PM
Client Sample ID: B8_12_17_G1_3 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/20/2007 2:20:52 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/20/2007 2:20:52 AM
Surr: DNOP	70.2	61.7-135		%REC	1	12/20/2007 2:20:52 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *20-Dec-07*

CLIENT: Giant Refining Co
Project: Fan Out Area December 07
Lab Order: 0712257

Lab ID: 0712257-15 **Collection Date:** 12/17/2007 2:25:00 PM
Client Sample ID: EB_12_17_07 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	12/20/2007 1:34:23 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	12/20/2007 1:34:23 PM
Surr: DNOP	95.8	58-140		%REC	1	12/20/2007 1:34:23 PM

Lab ID: 0712257-16 **Collection Date:** 12/17/2007 3:20:00 PM
Client Sample ID: B8_12_17_G1_8 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/19/2007 6:28:04 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/19/2007 6:28:04 PM
Surr: DNOP	90.6	61.7-135		%REC	1	12/19/2007 6:28:04 PM

Lab ID: 0712257-17 **Collection Date:** 12/17/2007 3:35:00 PM
Client Sample ID: B8_12_17_G1_13 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/20/2007 9:04:49 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/20/2007 9:04:49 AM
Surr: DNOP	86.0	61.7-135		%REC	1	12/20/2007 9:04:49 AM

Lab ID: 0712257-18 **Collection Date:** 12/17/2007 3:50:00 PM
Client Sample ID: B8_12_17_K1_3 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/19/2007 7:28:50 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/19/2007 7:28:50 PM
Surr: DNOP	83.1	61.7-135		%REC	1	12/19/2007 7:28:50 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *20-Dec-07*

CLIENT: Giant Refining Co
Project: Fan Out Area December 07
Lab Order: 0712257

Lab ID: 0712257-19
Collection Date: 12/17/2007 4:00:00 PM
Client Sample ID: B8_12_17_K1_8
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/20/2007 8:34:18 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/20/2007 8:34:18 AM
Surr: DNOP	73.7	61.7-135		%REC	1	12/20/2007 8:34:18 AM

Lab ID: 0712257-20
Collection Date: 12/17/2007 4:15:00 PM
Client Sample ID: B8_12_17_K1_13
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/19/2007 9:59:00 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/19/2007 9:59:00 PM
Surr: DNOP	81.3	61.7-135		%REC	1	12/19/2007 9:59:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Giant Refining Co
Project: Fan Out Area December 07 **Work Order:** 0712257

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics									
Sample ID: 0712257-12AMSD		*MSD*			Batch ID:	**14687**	Analysis Date:	12/20/2007 3:30:02 AM	
Diesel Range Organics (DRO)	41.00	mg/Kg	10	82.0	67.4	117	4.08	17.4	
Sample ID: 0712257-19AMSD		*MSD*			Batch ID:	**14696**	Analysis Date:	12/19/2007 8:58:34 PM	
Diesel Range Organics (DRO)	36.18	mg/Kg	10	72.4	67.4	117	25.6	17.4	R
Motor Oil Range Organics (MRO)	ND	mg/Kg	50				0	0	
Sample ID: MB-14687		*MBLK*			Batch ID:	**14687**	Analysis Date:	12/19/2007 11:13:35 AM	
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: MB-14696		*MBLK*			Batch ID:	**14696**	Analysis Date:	12/19/2007 3:24:36 PM	
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-14687		*LCS*			Batch ID:	**14687**	Analysis Date:	12/19/2007 11:48:30 AM	
Diesel Range Organics (DRO)	38.94	mg/Kg	10	77.9	64.6	116			
Sample ID: LCS-14696		*LCS*			Batch ID:	**14696**	Analysis Date:	12/19/2007 3:59:02 PM	
Diesel Range Organics (DRO)	33.23	mg/Kg	10	66.5	64.6	116			
Sample ID: LCSD-14687		*LCSD*			Batch ID:	**14687**	Analysis Date:	12/19/2007 12:23:29 PM	
Diesel Range Organics (DRO)	36.85	mg/Kg	10	73.7	64.6	116	5.52	17.4	
Sample ID: LCSD-14696		*LCSD*			Batch ID:	**14696**	Analysis Date:	12/19/2007 4:33:25 PM	
Diesel Range Organics (DRO)	37.81	mg/Kg	10	75.6	64.6	116	12.9	17.4	
Sample ID: 0712257-12AMS		*MS*			Batch ID:	**14687**	Analysis Date:	12/20/2007 2:55:20 AM	
Diesel Range Organics (DRO)	39.36	mg/Kg	10	78.7	67.4	117			
Sample ID: 0712257-19AMS		*MS*			Batch ID:	**14696**	Analysis Date:	12/19/2007 8:29:01 PM	
Diesel Range Organics (DRO)	46.78	mg/Kg	10	93.6	67.4	117			
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Method: EPA Method 8015B: Diesel Range									
Sample ID: MB-14706		*MBLK*			Batch ID:	**14706**	Analysis Date:	12/20/2007 11:39:30 AM	
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-14706		*LCS*			Batch ID:	**14706**	Analysis Date:	12/20/2007 12:08:31 PM	
Diesel Range Organics (DRO)	4.622	mg/L	1.0	92.4	74	157			
Sample ID: LCSD-14706		*LCSD*			Batch ID:	**14706**	Analysis Date:	12/20/2007 12:34:04 PM	
Diesel Range Organics (DRO)	5.296	mg/L	1.0	106	74	157	13.6	23	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name GIANTREFIN

Date Received: 12/18/2007

Work Order Number 0712257

Received by: TLS

Sample ID labels checked by AT
Initials

Checklist completed by: Samuel Shomin 12/18/07
Signature Date

Matrix

Carrier name FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☑	No ☐	N/A ☐	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☐	No ☑		
Water - VOA vials have zero headspace?	No VOA vials submitted ☑	Yes ☐	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	

Container/Temp Blank temperature? 3° *<6° C Acceptable*
If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

CHAIN-OF-CUSTODY RECORD

QA/QC Package: Std ☒ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: Giant Refining Company Gallup Refinery
Address: Route 3 Box 7 Gallup, NM 87301
Phone #: 505-722-3833
Fax #: 505-722-0210

Project Name: Fanout Area December 07
Project #:
Project Manager: Steve Morris (Giant) Grant Price (Trihydro) (307-399-0890)
Sampler: Grant Price
Sample Temperature: 3°

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HNO_3	Preservative: None	HEAL No. 0712257	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel) DRO	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
12/17/07	1130	Soil	B8-12-17-B-8	1/4oz			X	1			X														
12/17/07	1145	Soil	B8-12-17-B-13	1/4oz			X	2			X														
12/17/07	1155	Soil	B8-12-17-B-18	1/4oz			X	3			X														
12/17/07	1205	Soil	B8-12-17-B-23	1/4oz			X	4			X														
12/17/07	1250	Soil	B8-12-17-ML-3	1/4oz			X	5			X														
12/17/07	1300	Soil	B8-12-17-ML-8	1/4oz			X	6			X														
12/17/07	1310	Soil	B8-12-17-ML-13	1/4oz			X	7			X														
12/17/07	1355	Soil	B8-12-17-IL-3	1/4oz			X	8			X														
12/17/07	1405	Soil	B8-12-17-IL-8	1/4oz			X	9			X														
12/17/07	1415	Soil	B8-12-17-IL-13	1/4oz			X	10			X														
12/17/07	—	Soil	BD-12-17-07	1/4oz			X	11			X														
12/17/07	1505	Soil	B8-12-17-GL-3 MS	1/4oz			X	12			X														

Date	Time	Relinquished By: (Signature)	Received By: (Signature)
12/17/07	1620	[signature]	Fed Ex
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature) 12/18/07 Jamie Thomas 1430

Remarks: 24 hr turnaround on all soil samples.

CHAIN-OF-CUSTODY RECORD

QA / QC Package: Std ☒ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: Giant Refining Company Gallup Refinery
Address: Route 3 Box 7 Gallup, NM 87301
Phone #: 505-722-3833
Fax #: 505-722-0210

Project Name: Fan out Area December 07
Project #:
Project Manager: Steve Morris (Giant) Grant Price (Trihydro) (307-399-0890)
Sampler: Grant Price
Sample Temperature: 3°

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HNO_3	Preservative: NONE	HEAL No. 0712257	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel) DRO	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
12/17/07	1505	Soil	B8-12-17-G1-3	1/4oz			X	12			X														
12/17/07	1505	Soil	B8-12-17-G1-3 MSD	1/4oz			X	12			X														
12/17/07	1425	Water	EB-12-17-07	3/40mL			X	15			X														
12/17/07	1520	Soil	B8-12-17-G1-8	1/4oz			X	16			X														
12/17/07	1535	Soil	B8-12-17-G1-13	1/4oz			X	17			X														
12/17/07	1550	Soil	B8-12-17-K1-3	1/4oz			X	18			X														
12/17/07	1600	Soil	B8-12-17-K1-8	1/4oz			X	19			X														
12/17/07	1615	Soil	B8-12-17-K1-13	1/4oz			X	20			X														

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
12/17/07	1620	[signature]	Fed Ex
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature) 12/18/07 1430 [signature]

Remarks: 24 hr turnaround on all soil samples.

Tier II Data Validation Report Summary

Client: Western Refining Company, Gallup	Laboratory: Hall Environmental Analysis Laboratory, Inc.
Project Name: December 2007 Sampling Event	Sample Matrix: Soil
Project Number: 697-017-002	Sample Start Date: December 17, 2007
Date Validated: June 18, 2009	Sample End Date: December 17, 2007
Parameters Included: Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by Environmental Protection Agency (EPA) Method 8015B	
Laboratory Project IDs: 0712257	
Data Validator's Name: Jessica Swanson, Environmental Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services group on the analytical data report package generated by Hall Environmental Analysis Laboratory, Inc. evaluating samples from the Western Refining Company site located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values of samples from field duplicate pairs. Laboratory accuracy was established by reviewing the demonstrated percent recoveries of matrix spike (MS) and matrix spike duplicate (MSD) samples, and of laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) to verify that none of the data were biased. Additionally, field accuracy was established by collecting an equipment blank to monitor for possible ambient or cross contamination during sampling. Method compliance was established by reviewing holding times, detection limits, surrogate recoveries, method blanks, and the LCS and LCSD percent recoveries against method specific requirements. Completeness was evaluated by determining the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody, laboratory analytical methods, and any other necessary documents associated with this analytical data set.

Data were evaluated in general accordance with validation criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-08-01, June 2008 with additional reference to USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999. Review of duplicates is conducted in accordance with USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.

Tier II Data Validation Report Summary

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
B8_12_17_B_8	0712257-01
B8_12_17_B_13	0712257-02
B8_12_17_B_18	0712257-03
B8_12_17_B_23	0712257-04
B8_12_17_M1_3	0712257-05
B8_12_17_M1_8	0712257-06
B8_12_17_M1_13	0712257-07
B8_12_17_I1_3	0712257-08
B8_12_17_I1_8	0712257-09
B8_12_17_I1_13	0712257-10
BD_12_17_07	0712257-11
B8_12_17_G1_3	0712257-12
EB_12_17_07	0712257-15
B8_12_17_G1_8	0712257-16
B8_12_17_G1_13	0712257-17
B8_12_17_K1_3	0712257-18
B8_12_17_K1_8	0712257-19
B8_12_17_K1_13	0712257-20

Tier II Data Validation Report

The samples were analyzed for client-specified analytes. Chain-of-custody (COC) completeness is included in Section #3. The laboratory data were reviewed to evaluate compliance with the required methods and the quality of the reported data. A leading check mark (✓) indicates that the referenced data were deemed acceptable. A preceding crossed circle (⊗) signifies problems with the referenced data that may have warranted attaching qualifiers to the data.

- ✓ Data Completeness
- ✓ COC Documentation
- ✓ Holding Times and Preservation
- ✓ Laboratory Blanks
- ✓ System Monitoring Compounds (i.e. Surrogates)
- ✓ Laboratory Control Samples/Laboratory Control Sample Duplicates (LCS/LCSD)
- ⊗ Matrix Spike/Matrix Spike Duplicates (MS/MSD)
- ✓ Field Duplicates
- ✓ Equipment Blank

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Section #2.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data which are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R, the data may be used for site evaluation, with the reasons for qualification being given consideration when interpreting sample concentrations. Data points which are assigned an R qualifier should not be used for any site evaluation purposes. Data were qualified as a result of this validation for a high MS/MSD RPD value.

Data qualifiers used during this validation included:

UJ – Estimated reporting limit

Data Completeness

The analyses appeared to be performed as requested on the chain-of-custody records. The associated samples were received by the laboratory and appeared to be analyzed properly. No data points were rejected. The data completeness measure for this data package is 100%.

VALIDATION CRITERIA CHECKLIST	
1. Did the laboratory identify any non-conformances related to the analytical data?	No
Comments: The laboratory did not identify any non-conformances related to this data set.	
2. Were data qualification flags used by the laboratory? If yes, define.	Yes
Comments: The laboratory used the following data qualification flag with this data set. R – RPD outside accepted recovery limits.	
3. Were sample chain-of-custody forms complete?	Yes
Comments: The COC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.	
4. Were detection limits in accordance with the QAPP, permit, or method, or indicated as acceptable by the Tier I validator?	Yes
Comments: Detection limits were reviewed and appeared to be acceptable. Dilutions were not applied to the samples.	
5. Were the requested analytical methods in compliance with the QAPP, permit, or COC?	Yes
Comments: The requested analytical methods were in compliance with what was requested on the COC.	
6. Were samples received in good condition within method specified requirements?	Yes
Comments: Samples were received intact and in good condition. Cooler temperatures were within the 4°C +/- 2°C acceptable range at 3.0°C, as noted in the Sample Receipt Checklist. Custody seals were present and intact on both the sample bottles and the shipping container.	
7. Were samples analyzed within method specified or technical holding times?	Yes
Comments: Samples were analyzed within the acceptable hold time. The laboratory checked on the Sample Receipt Checklist that samples were not received within holding time. Holding times were evaluated and found to be acceptable. No further action was required.	
8. Were reported units appropriate for the associated sample matrix/matrices and method(s) of analyses?	Yes
Comments: Analyte concentrations were reported in units of mg/kg. The reported units are acceptable for the soil matrix. The equipment blanks were reported in mg/L which is acceptable for the water matrix.	
9. Do the laboratory reports include all constituents requested to be reported as indicated by the Tier I validator?	Yes
Comments: As indicated on the Tier I data validation, laboratory reported constituents were in accordance with those requested.	
10. Was there indication from the laboratory that the initial or continued calibration verification results were within acceptable limits?	N/A
Comments: Initial and continuing calibration data were not included as part of this data set; however, these data are assumed to be acceptable as the laboratory did not note that any calibration verification results were outside acceptable limits.	
11. Was the total number of method blank samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Method blanks were prepared on a greater than 5% basis.	
12. Were method blank detections reported for this data set?	No
Comments: Method blank detections were not reported for this data set.	

VALIDATION CRITERIA CHECKLIST	
13. Was the total number of matrix spike samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	No
Comments: Matrix spike samples were prepared on a greater than 5% basis with the exceptions of DRO batch 14706. The LCS/LCSD data was used to validate this batch. The MS/MSD sample pair for DRO batch 14687 was prepared from sample B8_12_17_G1_3 and the MS/MSD sample pair for DRO batch 14696 was prepared from sample B8_12_17_K1_8.	
14. Were matrix spike recoveries within laboratory-specified limits?	No
Comments: The MS and MSD recoveries for target analytes were within laboratory-specified limits with the following exception. **The MS/MSD RPD value for DRO in batch 14696 was above the acceptable limit of 17.4% at 25.6%. As a result of possible poor repeatability, the analytes DRO and MRO were qualified as UJ in the associated samples for non-detects.**	
15. Was the total number of laboratory control samples analyzed equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Laboratory control samples were reported on a greater than 5% basis.	
16. Were laboratory control recoveries within laboratory-specified limits?	Yes
Comments: Laboratory control recoveries were within laboratory-specified limits.	
17. Were surrogate recoveries within laboratory control limits?	Yes
Comments: Surrogate recoveries were within laboratory control limits.	
18. Was the number of equipment, trip, or field blanks collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	No
Comments: One equipment blank (EB_12_17_07) was submitted with this data set which is less than 10% the total number of samples.	
19. Were detections found in trip blanks, equipment blanks, or field blanks?	No
Comments: There were no detections in the equipment blank.	
20. Were the field duplicates collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	No
Comments: One field duplicate, BD_12_17_07 was collected as a duplicate of sample B8_12_17_I1_3, which is less than 10% the total number of samples.	
21. Were field duplicate RPD values less than the upper RPD limit (soil [50%], water [30%], or air/vapor [25%]), as specified by the laboratory or method?	N/A
Comments: Field duplicate RPD values could not be calculated since both the parent and duplicate samples were non-detected for target analytes.	
22. Were laboratory duplicate RPD values within laboratory-specified limits?	N/A
Comments: Laboratory duplicates were not prepared for this data set.	

DATA QUALIFICATION SUMMARY

Analyte	Client Sample ID	Laboratory Assigned ID	Laboratory Result (mg/kg)	Reviewer Qualifier	Reason for Qualification
DRO	B8_12_17_I1_3	0712257-08	ND (10)	UJ	The RPD for the MS/MSD or LCS/LCSD was greater than the acceptable difference indicating poor repeatability.
MRO	B8_12_17_I1_3	0712257-08	ND (50)	UJ	The RPD for the MS/MSD or LCS/LCSD was greater than the acceptable difference indicating poor repeatability.
DRO	B8_12_17_I1_8	0712257-09	ND (10)	UJ	The RPD for the MS/MSD or LCS/LCSD was greater than the acceptable difference indicating poor repeatability.
MRO	B8_12_17_I1_8	0712257-09	ND (50)	UJ	The RPD for the MS/MSD or LCS/LCSD was greater than the acceptable difference indicating poor repeatability.
DRO	B8_12_17_I1_13	0712257-10	ND (10)	UJ	The RPD for the MS/MSD or LCS/LCSD was greater than the acceptable difference indicating poor repeatability.
MRO	B8_12_17_I1_13	0712257-10	ND (50)	UJ	The RPD for the MS/MSD or LCS/LCSD was greater than the acceptable difference indicating poor repeatability.
DRO	BD_12_17_07	0712257-11	ND (10)	UJ	The RPD for the MS/MSD or LCS/LCSD was greater than the acceptable difference indicating poor repeatability.
MRO	BD_12_17_07	0712257-11	ND (50)	UJ	The RPD for the MS/MSD or LCS/LCSD was greater than the acceptable difference indicating poor repeatability.
DRO	B8_12_17_G1_8	0712257-16	ND (10)	UJ	The RPD for the MS/MSD or LCS/LCSD was greater than the acceptable difference indicating poor repeatability.
MRO	B8_12_17_G1_8	0712257-16	ND (50)	UJ	The RPD for the MS/MSD or LCS/LCSD was greater than the acceptable difference indicating poor repeatability.
DRO	B8_12_17_K1_3	0712257-18	ND (10)	UJ	The RPD for the MS/MSD or LCS/LCSD was greater than the acceptable difference indicating poor repeatability.
MRO	B8_12_17_K1_3	0712257-18	ND (50)	UJ	The RPD for the MS/MSD or LCS/LCSD was greater than the acceptable difference indicating poor repeatability.
DRO	B8_12_17_K1_13	0712257-20	ND (10)	UJ	The RPD for the MS/MSD or LCS/LCSD was greater than the acceptable difference indicating poor repeatability.
MRO	B8_12_17_K1_13	0712257-20	ND (50)	UJ	The RPD for the MS/MSD or LCS/LCSD was greater than the acceptable difference indicating poor repeatability.

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Friday, March 27, 2009

Gaurav Rajen
Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-0227
FAX (505) 722-0210

RE: Excavation Fan Out Area

Order No.: 0903342

Dear Gaurav Rajen:

Hall Environmental Analysis Laboratory, Inc. received 14 sample(s) on 3/20/2009 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

ACCREDITED IN ACCORDANCE WITH nelac

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc. **Date:** *27-Mar-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area
Lab Order: 0903342

CASE NARRATIVE

Analytical Comments for METHOD 8015DRO_S, SAMPLE 0903342-01A: DNOP not recovered due to dilution Analytical Comments for METHOD 8015DRO_S, SAMPLE 0903342-05A: DNOP not recovered due to dilution

Hall Environmental Analysis Laboratory, Inc.

Date: *27-Mar-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area

Lab Order: 0903342

Lab ID: 0903342-01 **Collection Date:** 3/17/2009 2:50:00 PM
Client Sample ID: CS-2 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	11000	200		mg/Kg	20	3/26/2009
Motor Oil Range Organics (MRO)	ND	1000		mg/Kg	20	3/26/2009
Surr: DNOP	0	61.7-135	S	%REC	20	3/26/2009

Lab ID: 0903342-02 **Collection Date:** 3/17/2009 4:10:00 PM
Client Sample ID: C-1 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	320	10		mg/Kg	1	3/26/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/26/2009
Surr: DNOP	90.7	61.7-135		%REC	1	3/26/2009

Lab ID: 0903342-04 **Collection Date:** 3/18/2009 1:55:00 PM
Client Sample ID: CS-3 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	320	10		mg/Kg	1	3/26/2009
Motor Oil Range Organics (MRO)	72	50		mg/Kg	1	3/26/2009
Surr: DNOP	93.3	61.7-135		%REC	1	3/26/2009

Lab ID: 0903342-05 **Collection Date:** 3/18/2009 2:05:00 PM
Client Sample ID: CS-4 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	6000	200		mg/Kg	20	3/26/2009
Motor Oil Range Organics (MRO)	ND	1000		mg/Kg	20	3/26/2009
Surr: DNOP	0	61.7-135	S	%REC	20	3/26/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

2

Hall Environmental Analysis Laboratory, Inc.

Date: *27-Mar-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area

Lab Order: 0903342

Lab ID: 0903342-06 **Collection Date:** 3/18/2009 5:05:00 PM
Client Sample ID: CS-6 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/26/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/26/2009
Surr: DNOP	70.2	61.7-135		%REC	1	3/26/2009

Lab ID: 0903342-07 **Collection Date:** 3/18/2009 5:07:00 PM
Client Sample ID: CS-9 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/26/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/26/2009
Surr: DNOP	88.6	61.7-135		%REC	1	3/26/2009

Lab ID: 0903342-08 **Collection Date:** 3/18/2009 1:08:00 PM
Client Sample ID: EB2-031809 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	3/24/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	3/24/2009
Surr: DNOP	111	58-140		%REC	1	3/24/2009

Lab ID: 0903342-09 **Collection Date:** 3/18/2009 4:20:00 PM
Client Sample ID: EB1-031809-3 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	3/24/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	3/24/2009
Surr: DNOP	112	58-140		%REC	1	3/24/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *27-Mar-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area

Lab Order: 0903342

Lab ID: 0903342-10 **Collection Date:** 3/18/2009 4:25:00 PM
Client Sample ID: EB2-031809-3 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	3/24/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	3/24/2009
Surr: DNOP	114	58-140		%REC	1	3/24/2009

Lab ID: 0903342-11 **Collection Date:** 3/18/2009 2:10:00 PM
Client Sample ID: EB1-031809-2 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	3/24/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	3/24/2009
Surr: DNOP	117	58-140		%REC	1	3/24/2009

Lab ID: 0903342-12 **Collection Date:** 3/17/2009 2:35:00 PM
Client Sample ID: EB2-031709 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	3/24/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	3/24/2009
Surr: DNOP	110	58-140		%REC	1	3/24/2009

Lab ID: 0903342-13 **Collection Date:** 3/18/2009 2:15:00 PM
Client Sample ID: EB2-031809-2 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	3/24/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	3/24/2009
Surr: DNOP	107	58-140		%REC	1	3/24/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *27-Mar-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area

Lab Order: 0903342

Lab ID: 0903342-14
Client Sample ID: EB1-031709

Collection Date: 3/17/2009 2:30:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	3/24/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	3/24/2009
Surr: DNOP	108	58-140		%REC	1	3/24/2009

Lab ID: 0903342-15
Client Sample ID: EB1-031809

Collection Date: 3/18/2009 1:03:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	3/24/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	3/24/2009
Surr: DNOP	107	58-140		%REC	1	3/24/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area **Work Order:** 0903342

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics									
Sample ID: MB-18623		*MBLK*			Batch ID:	**18623**	Analysis Date:		3/24/2009
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-18623		*LCS*			Batch ID:	**18623**	Analysis Date:		3/24/2009
Diesel Range Organics (DRO)	47.57	mg/Kg	10	95.1	64.6	116			
Sample ID: LCSD-18623		*LCSD*			Batch ID:	**18623**	Analysis Date:		3/24/2009
Diesel Range Organics (DRO)	43.84	mg/Kg	10	87.7	64.6	116	8.16	17.4	
Method: EPA Method 8015B: Diesel Range									
Sample ID: MB-18599		*MBLK*			Batch ID:	**18599**	Analysis Date:		3/24/2009
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-18599		*LCS*			Batch ID:	**18599**	Analysis Date:		3/24/2009
Diesel Range Organics (DRO)	5.420	mg/L	1.0	108	74	157			
Sample ID: LCSD-18599		*LCSD*			Batch ID:	**18599**	Analysis Date:		3/24/2009
Diesel Range Organics (DRO)	5.516	mg/L	1.0	110	74	157	1.77	23	

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name WESTERN REFINING GALLU

Date Received: 3/20/2009

Work Order Number 0903342

Received by: AT

Sample ID labels checked by: AT/AS
Initials

Checklist completed by: Signature 3/20/09 Date

Matrix: Carrier name Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	6°	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

1 of 2

Chain-of-Custody Record

Client: Western Refining Company Gallup

Mailing Address: Route 3 Box 7 Gallup, NM 87301

Phone #: 505-722-3833

email or Fax#: 505-722-0210

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☒ NELAP ☐ Other ____

☐ EDD (Type) ____

Turn-Around Time:
☒ Standard ☐ Rush ____

Project Name: Excavation for art area

Project #: —

Project Manager: Gaurav Rajer

Sampler: Regina Mitchell

On Ice: ☒ Yes ☐ No

Sample Temperature: 6

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0903342	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)				Air Bubbles (Y or N)
3/17/09	1450	soil	CS-2	4oz Jar / 1	None	-1			X												
~~3/17/09~~	~~[redacted]~~			4oz Jar / 1																	
3/17/09	1610	soil	C-1	4oz Jar / 1	None	-2			X												
3/17/09	1450	soil	MS/MSD CS-2	4oz Jar / 1	None	-1 -3			X												
3/18/09	1355	soil	CS-3	4oz Jar / 1	None	-4			X												
3/18/09	1405	soil	CS-4	4oz Jar / 1	None	-5			X												
3/18/09	[redacted]1705	soil	CS-6	4oz Jar / 1	None	-6			X												
3/18/09	1707	soil	CS-9	4oz Jar / 1	None	-7			X												
3/18/09	1308	water	EB2-031809	40mL VOA / 3	HCL	-8			X												
3/18/09	1620	water	EB1-031809-3	40mL VOA / 3	HCl	-9			X												
3/18/09	1625	water	EB2-031809-3	40mL VOA 3	HCl	-10			X												
3/18/09	1410	water	EB1-031809-2	" / 3	HCl	-11			X												

Date:	Time:	Relinquished by:	Received by:	Date	Time
3/20/09	4:45	Regina Mitchell	[signature]	3/20/09	1645
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: Please copy results to regina mitchell rmitchell@trihydro.com

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

2 of 2

Chain-of-Custody Record

Client: Western Refining Company Gallup

Mailing Address: Route 3 Box 7

Phone #: 505-722-3833

email or Fax#: 505-722-0210

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☒ NELAP ☐ Other

☐ EDD (Type) —

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Excavation Far Out Area

Project #:

Project Manager: Gaur Rajan

Sampler: Regina Mitchell

On Ice: ☒ Yes ☐ No

Sample Temperature: °C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0903342	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
3/17/09	1435	water	EB2-031709			-12			X													
3/18/09	1415	water	EB2-031809-2			-13			X													
3/17/09	1430	water	EB1-031709			-14			X													
3/18/09	1303	water	EB1-031809			-15			X													

Date:	Time:	Relinquished by:	Received by:	Date	Time
3/20/09	450 pm	Regina Mitchell	[signature]	3/20/09	1650
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: Please copy rmitchell@trinitydo.com

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Tier II Data Validation Report Summary

Client: Western Refining Company, Gallup	Laboratory: Hall Environmental Analysis Laboratory, Inc.
Project Name: March 2009 Sampling Event	Sample Matrix: Soil
Project Number: 697-017-002	Sample Start Date: March 17, 2009
Date Validated: June 19, 2009	Sample End Date: March 18, 2009
Parameters Included: Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by Environmental Protection Agency (EPA) Method 8015B	
Laboratory Project IDs: 0903342	
Data Validator's Name: Jessica Swanson, Environmental Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services group on the analytical data report package generated by Hall Environmental Analysis Laboratory, Inc. evaluating samples from the Western Refining Company site located in Gallup, New Mexico.

Accuracy, method compliance, and completeness of this data package were assessed during this data review. Laboratory accuracy was established by reviewing the demonstrated percent recoveries of laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) to verify that none of the data were biased. Additionally, field accuracy was established by collecting equipment blanks to monitor for possible ambient or cross contamination during sampling. Method compliance was established by reviewing holding times, detection limits, method blanks, and the LCS and LCSD percent recoveries against method specific requirements. Completeness was evaluated by determining the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody, laboratory analytical methods, and any other necessary documents associated with this analytical data set.

Data were evaluated in general accordance with validation criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-08-01, June 2008 with additional reference to USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999.

Tier II Data Validation Report Summary

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
CS-2	0903342-01
C-1	0903342-02
CS-3	0903342-04
CS-4	0903342-05
CS-6	0903342-06
CS-9	0903342-07
EB2-031809	0903342-08
EB1-031809-3	0903342-09
EB2-031809-3	0903342-10
EB1-031809-2	0903342-11
EB2-031709	0903342-12
EB2-031809-2	0903342-13
EB1-031709	0903342-14
EB1-031809	0903342-15

Tier II Data Validation Report

The samples were analyzed for client-specified analytes. Chain-of-custody (COC) completeness is included in Section #3. The laboratory data were reviewed to evaluate compliance with the required methods and the quality of the reported data. A leading check mark (✓) indicates that the referenced data were deemed acceptable. A preceding crossed circle (⊗) signifies problems with the referenced data that may have warranted attaching qualifiers to the data.

- ✓ Data Completeness
- ✓ COC Documentation
- ✓ Holding Times and Preservation
- ✓ Laboratory Blanks
- ✓ System Monitoring Compounds (i.e. Surrogates)
- ✓ Laboratory Control Samples/Laboratory Control Sample Duplicates (LCS/LCSD)
- ✓ Equipment Blanks

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Section #2.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data which are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R, the data may be used for site evaluation, with the reasons for qualification being given consideration when interpreting sample concentrations. Data points which are assigned an R qualifier should not be used for any site evaluation purposes. Data were not qualified during this validation.

Data Completeness

The analyses appeared to be performed as requested on the chain-of-custody records. The associated samples were received by the laboratory and appeared to be analyzed properly. No data points were rejected. The data completeness measure for this data package is 100%.

VALIDATION CRITERIA CHECKLIST	
1. Did the laboratory identify any non-conformances related to the analytical data?	Yes
Comments: The laboratory noted the following non-conformance with this data set. For Method 8015 DRO, samples CS-2 and CS-4, the surrogate DNOP was not recovered due to dilution.	
2. Were data qualification flags used by the laboratory? If yes, define.	Yes
Comments: The laboratory used the following data qualification flag with this data set. S – Spike recovery outside accepted recovery limits.	
3. Were sample chain-of-custody forms complete?	Yes
Comments: The COC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.	
4. Were detection limits in accordance with the QAPP, permit, or method, or indicated as acceptable by the Tier I validator?	Yes
Comments: Detection limits were reviewed and appeared to be acceptable. Dilutions of 20 times were applied to samples CS-2 and CS-4 for DRO analysis. The final usability of the data with respect to dilutions will be determined by the project team.	
5. Were the requested analytical methods in compliance with the QAPP, permit, or COC?	Yes
Comments: The requested analytical methods were in compliance with what was requested on the COC.	
6. Were samples received in good condition within method specified requirements?	Yes
Comments: Samples were received intact and in good condition. Cooler temperatures were within the 4°C +/- 2°C acceptable range at 6.0°C, as noted in the Sample Receipt Checklist.	
7. Were samples analyzed within method specified or technical holding times?	Yes
Comments: Samples were analyzed within the acceptable hold time.	
8. Were reported units appropriate for the associated sample matrix/matrices and method(s) of analyses?	Yes
Comments: Analyte concentrations were reported in units of mg/kg. The reported units are acceptable for the soil matrix. The equipment blanks were reported in mg/L which is acceptable for the water matrix.	
9. Do the laboratory reports include all constituents requested to be reported as indicated by the Tier I validator?	Yes
Comments: As indicated on the Tier I data validation, laboratory reported constituents were in accordance with those requested. A MS/MSD sample was collected and not used as a matrix spike. Discussions with the laboratory determined that this was acceptable and required no further action.	
10. Was there indication from the laboratory that the initial or continued calibration verification results were within acceptable limits?	N/A
Comments: Initial and continuing calibration data were not included as part of this data set; however, these data are assumed to be acceptable as the laboratory did not note that any calibration verification results were outside acceptable limits.	
11. Was the total number of method blank samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Method blanks were prepared on a greater than 5% basis.	
12. Were method blank detections reported for this data set?	No
Comments: Method blank detections were not reported for this data set.	

VALIDATION CRITERIA CHECKLIST	
13. Was the total number of matrix spike samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	No
Comments: Matrix spike samples were not prepared for this data set although the COC listed a matrix spike sample collected for sample CS-2. The laboratory was contacted and stated that the sample concentration was too high and the spike would be un-recoverable and therefore the matrix spike was not performed. No further action was required.	
14. Were matrix spike recoveries within laboratory-specified limits?	N/A
Comments: Matrix spike samples were not prepared for this data set.	
15. Was the total number of laboratory control samples analyzed equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Laboratory control samples were reported on a greater than 5% basis.	
16. Were laboratory control recoveries within laboratory-specified limits?	Yes
Comments: Laboratory control recoveries were within laboratory-specified limits.	
17. Were surrogate recoveries within laboratory control limits?	Yes
Comments: Surrogate recoveries were within laboratory control limits. The surrogate DNOP for samples CS-2 and CS-4 was not recovered due to dilution. This is acceptable per the method.	
18. Was the number of equipment, trip, or field blanks collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	Yes
Comments: Eight equipment blanks (EB2-031809, EB1-031809-3, EB2-031809-3, EB1-031809-2, EB2-031709, EB2-031809-2, EB1-031709, and EB1-031809) were submitted with this data set which is greater than 10% the total number of samples.	
19. Were detections found in trip blanks, equipment blanks, or field blanks?	No
Comments: There were no detections in the equipment blank.	
20. Were the field duplicates collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	No
Comments: Field duplicates were not collected with this data set.	
21. Were field duplicate RPD values less than the upper RPD limit (soil [50%], water [30%], or air/vapor [25%]), as specified by the laboratory or method?	N/A
Comments: Field duplicates were not collected with this data set.	
22. Were laboratory duplicate RPD values within laboratory-specified limits?	N/A
Comments: Laboratory duplicates were not prepared for this data set.	

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Monday, June 22, 2009

Gaurav Rajen
Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-0227
FAX: (505) 722-0210

RE: Excavation Fan out area

Order No.: 0904327

Dear Gaurav Rajen:

Hall Environmental Analysis Laboratory, Inc. received 8 sample(s) on 4/21/2009 for the analyses presented in the following report.

This report is an addendum to the report dated April 24, 2009. The analysis date for DRO has been corrected.

No determination of compounds below these (denoted by the ND or < sign) has been made. Please don't hesitate to contact Hall Environmental for any additional information or clarifications.

Reporting limits are determined by EPA methodology.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc.

Date: *22-Jun-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan out area
Lab Order: 0904327

Lab ID: 0904327-01 **Collection Date:** 4/21/2009
Client Sample ID: BD042109 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	5500	100		mg/Kg	10	4/22/2009
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	4/22/2009
Surr: DNOP	77.3	61.7-135		%REC	10	4/22/2009

Lab ID: 0904327-02 **Collection Date:** 4/21/2009 1:12:00 PM
Client Sample ID: CS-15 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	5000	100		mg/Kg	10	4/22/2009
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	4/22/2009
Surr: DNOP	112	61.7-135		%REC	10	4/22/2009

Lab ID: 0904327-03 **Collection Date:** 4/21/2009 1:05:00 PM
Client Sample ID: CS-8 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	6100	100		mg/Kg	10	4/22/2009
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	4/22/2009
Surr: DNOP	76.8	61.7-135		%REC	10	4/22/2009

Lab ID: 0904327-04 **Collection Date:** 4/21/2009 10:10:00 AM
Client Sample ID: 1EB042109-1 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/22/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/22/2009
Surr: DNOP	110	58-140		%REC	1	4/22/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *22-Jun-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan out area
Lab Order: 0904327

Lab ID: 0904327-05
Collection Date: 4/21/2009 10:10:00 AM
Client Sample ID: 2EB042109-1
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/22/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/22/2009
Surr: DNOP	113	58-140		%REC	1	4/22/2009

Lab ID: 0904327-06
Collection Date: 4/21/2009 1:28:00 PM
Client Sample ID: CS-14
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	130	10		mg/Kg	1	4/22/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/22/2009
Surr: DNOP	76.3	61.7-135		%REC	1	4/22/2009

Lab ID: 0904327-07
Collection Date: 4/21/2009 1:20:00 PM
Client Sample ID: 1EB042109-2
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/22/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/22/2009
Surr: DNOP	111	58-140		%REC	1	4/22/2009

Lab ID: 0904327-08
Collection Date: 4/21/2009 1:33:00 PM
Client Sample ID: 2EB042109-2
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/22/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/22/2009
Surr: DNOP	110	58-140		%REC	1	4/22/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: Excavation Fan out area **Work Order:** 0904327

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics									
Sample ID: 0904327-02AMSD		*MSD*			Batch ID:	**18909**	Analysis Date:		4/23/2009
Diesel Range Organics (DRO)	3995	mg/Kg	100	-2070	67.4	117	2.50	17.4	S
Sample ID: MB-18909		*MBLK*			Batch ID:	**18909**	Analysis Date:		4/22/2009
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-18909		*LCS*			Batch ID:	**18909**	Analysis Date:		4/22/2009
Diesel Range Organics (DRO)	45.72	mg/Kg	10	91.4	64.6	116			
Sample ID: LCSD-18909		*LCSD*			Batch ID:	**18909**	Analysis Date:		4/22/2009
Diesel Range Organics (DRO)	45.06	mg/Kg	10	90.1	64.6	116	1.45	17.4	
Sample ID: 0904327-02AMS		*MS*			Batch ID:	**18909**	Analysis Date:		4/23/2009
Diesel Range Organics (DRO)	3896	mg/Kg	100	-2260	67.4	117			S
Method: EPA Method 8015B: Diesel Range									
Sample ID: MB-18911		*MBLK*			Batch ID:	**18911**	Analysis Date:		4/22/2009
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-18911		*LCS*			Batch ID:	**18911**	Analysis Date:		4/22/2009
Diesel Range Organics (DRO)	5.116	mg/L	1.0	102	74	157			
Sample ID: LCSD-18911		*LCSD*			Batch ID:	**18911**	Analysis Date:		4/22/2009
Diesel Range Organics (DRO)	5.905	mg/L	1.0	118	74	157	14.3	23	

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: Excavation Fan out area
Work Order: 0904327

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics									
Sample ID: 0904327-02AMSD		*MSD*			Batch ID:	**18909**	Analysis Date:		4/23/2009
Diesel Range Organics (DRO)	3995	mg/Kg	100	-2070	67.4	117	2.50	17.4	S
Sample ID: MB-18909		*MBLK*			Batch ID:	**18909**	Analysis Date:		4/22/2009
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-18909		*LCS*			Batch ID:	**18909**	Analysis Date:		4/22/2009
Diesel Range Organics (DRO)	45.72	mg/Kg	10	91.4	64.6	116			
Sample ID: LCSD-18909		*LCSD*			Batch ID:	**18909**	Analysis Date:		4/22/2009
Diesel Range Organics (DRO)	45.06	mg/Kg	10	90.1	64.6	116	1.45	17.4	
Sample ID: 0904327-02AMS		*MS*			Batch ID:	**18909**	Analysis Date:		4/23/2009
Diesel Range Organics (DRO)	3896	mg/Kg	100	-2260	67.4	117			S
Method: EPA Method 8015B: Diesel Range									
Sample ID: MB-18911		*MBLK*			Batch ID:	**18911**	Analysis Date:		4/22/2009
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-18911		*LCS*			Batch ID:	**18911**	Analysis Date:		4/22/2009
Diesel Range Organics (DRO)	5.116	mg/L	1.0	102	74	157			
Sample ID: LCSD-18911		*LCSD*			Batch ID:	**18911**	Analysis Date:		4/22/2009
Diesel Range Organics (DRO)	5.905	mg/L	1.0	118	74	157	14.3	23	

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name WESTERN REFINING GALLU

Date Received: 4/21/2009

Work Order Number 0904327

Received by: AMF

Sample ID labels checked by: AF (Initials)

Checklist completed by: [signature] (Signature) 4/21/09 (Date)

Matrix:

Carrier name Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	

Container/Temp Blank temperature? 5° *<6° C Acceptable* If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

1 of 1

Chain-of-Custody Record

Client: Western Refining Company Gallup

Mailing Address: Route 3 Box 7 Gallup, NM 87301

Phone #: 505-722-3833

email or Fax#: 505-722-0210

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☒ NELAP ☐ Other _____

☐ EDD (Type) ——

Turn-Around Time:
☐ Standard ☒ Rush 24 hr

Project Name: Excavation Fan out Area

Project #: —

Project Manager: Gaurav Rajan

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 5.6°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
4/21/09	1312	soil	MS/MSD - CS15																			
4/21/09	—	soil	BD042109	4oz jar / 1	none	0904327-1			X													
4/21/09	1312	soil	CS-15	4oz jar / 1	none	-2			X													
4/21/09	1305	soil	CS-8	4oz jar / 1	none	-3			X													
4/21/09	1010	water	1EB042109-1	40mL VOA / 3	HCl	-4			X													
4/21/09	1014	water	2EB042109-1	40mL VOA / 3	HCl	-5			X													
4/21/09	1328	soil	CS-14	4oz jar / 1	none	-6			X													
4/21/09	1320	water	1EB042109-2	40mL VOA / 3	HCl	-7			X													
4/21/09	1333	water	2EB042109-2	40mL VOA / 3	HCl	-8			X													

Date:	Time:	Relinquished by:	Received by:	Date	Time
4/21/09	1400	Regina Mitchell	[signature]	4/21/09	1401
4/21/09	1550	[signature]	[signature]	4/21/09	1550

Remarks: Please copy results to rmitchell@trihydro.com

Soil rush - only soil

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Tier II Data Validation Report Summary

Client: Western Refining Company, Gallup	Laboratory: Hall Environmental Analysis Laboratory, Inc.
Project Name: April 2009 Sampling Event	Sample Matrix: Soil
Project Number: 697-017-002	Sample Start Date: April 21, 2009
Date Validated: June 19, 2009	Sample End Date: April 21, 2009
Parameters Included: Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by Environmental Protection Agency (EPA) Method 8015B	
Laboratory Project IDs: 0904327	
Data Validator's Name: Jessica Swanson, Environmental Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services group on the analytical data report package generated by Hall Environmental Analysis Laboratory, Inc. evaluating samples from the Western Refining Company site located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values of samples from field duplicate pairs. Laboratory accuracy was established by reviewing the demonstrated percent recoveries of matrix spike (MS) and matrix spike duplicate (MSD) samples, and of laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) to verify that none of the data were biased. Additionally, field accuracy was established by collecting equipment blanks to monitor for possible ambient or cross contamination during sampling. Method compliance was established by reviewing holding times, detection limits, surrogate recoveries, method blanks, and the LCS and LCSD percent recoveries against method specific requirements. Completeness was evaluated by determining the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody, laboratory analytical methods, and any other necessary documents associated with this analytical data set.

Data were evaluated in general accordance with validation criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-08-01, June 2008 with additional reference to USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999. Review of duplicates is conducted in accordance with USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
BD042109	0904327-01
CS-15	0904327-02
CS-8	0904327-03
1EB042109-1	0904327-04
2EB042109-1	0904327-05
CS-14	0904327-06
1EB042109-2	0904327-07
2EB042109-2	0904327-08

Tier II Data Validation Report

The samples were analyzed for client-specified analytes. Chain-of-custody (COC) completeness is included in Section #3. The laboratory data were reviewed to evaluate compliance with the required methods and the quality of the reported data. A leading check mark (✓) indicates that the referenced data were deemed acceptable. A preceding crossed circle (⊗) signifies problems with the referenced data that may have warranted attaching qualifiers to the data.

- ✓ Data Completeness
- ✓ COC Documentation
- ✓ Holding Times and Preservation
- ✓ Laboratory Blanks
- ✓ System Monitoring Compounds (i.e. Surrogates)
- ✓ Laboratory Control Samples/Laboratory Control Sample Duplicates (LCS/LCSD)
- ⊗ Matrix Spike/Matrix Spike Duplicates (MS/MSD)
- ✓ Field Duplicates
- ✓ Equipment Blanks

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Section #2.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data which are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R, the data may be used for site evaluation, with the reasons for qualification being given consideration when interpreting sample concentrations. Data points which are assigned an R qualifier should not be used for any site evaluation purposes. Data were qualified as a result of this validation for extreme matrix interference.

Data qualifiers used during this validation included:

J – Estimated concentration

UJ – Estimated reporting limit

Data Completeness

The analyses appeared to be performed as requested on the chain-of-custody records. The associated samples were received by the laboratory and appeared to be analyzed properly. No data points were rejected. The data completeness measure for this data package is 100%.

VALIDATION CRITERIA CHECKLIST	
1. Did the laboratory identify any non-conformances related to the analytical data?	Yes
Comments: The laboratory re-issued the laboratory report to correct the analysis date for DRO on June 22, 2009.	
2. Were data qualification flags used by the laboratory? If yes, define.	Yes
Comments: The laboratory used the following data qualification flag with this data set. S – Spike recovery outside accepted recovery limits.	
3. Were sample chain-of-custody forms complete?	Yes
Comments: The COC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.	
4. Were detection limits in accordance with the QAPP, permit, or method, or indicated as acceptable by the Tier I validator?	Yes
Comments: Detection limits were reviewed and appeared to be acceptable. Dilutions of 10 times were applied to samples BD042109, CS-15, and CS-8 for DRO analyses. The final usability of the data with respect to dilutions will be determined by the project team.	
5. Were the requested analytical methods in compliance with the QAPP, permit, or COC?	Yes
Comments: The requested analytical methods were in compliance with what was requested on the COC.	
6. Were samples received in good condition within method specified requirements?	Yes
Comments: Samples were received intact and in good condition. Cooler temperatures were within the 4°C +/- 2°C acceptable range at 5.0°C, as noted in the Sample Receipt Checklist.	
7. Were samples analyzed within method specified or technical holding times?	Yes
Comments: Samples were analyzed within the acceptable hold time.	
8. Were reported units appropriate for the associated sample matrix/matrices and method(s) of analyses?	Yes
Comments: Analyte concentrations were reported in units of mg/kg. The reported units are acceptable for the soil matrix. The equipment blanks were reported in mg/L which is acceptable for the water matrix.	
9. Do the laboratory reports include all constituents requested to be reported as indicated by the Tier I validator?	Yes
Comments: As indicated on the Tier I data validation, laboratory reported constituents were in accordance with those requested.	
10. Was there indication from the laboratory that the initial or continued calibration verification results were within acceptable limits?	N/A
Comments: Initial and continuing calibration data were not included as part of this data set; however, these data are assumed to be acceptable as the laboratory did not note that any calibration verification results were outside acceptable limits.	
11. Was the total number of method blank samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Method blanks were prepared on a greater than 5% basis.	
12. Were method blank detections reported for this data set?	No
Comments: Method blank detections were not reported for this data set.	
13. Was the total number of matrix spike samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	No
Comments: Matrix spike samples were prepared on a greater than 5% basis with the exceptions of DRO batch 18911. The LCS/LCSD data was used to validate this batch. The MS/MSD sample pair for DRO batch 18909 was prepared from sample CS-15.	

VALIDATION CRITERIA CHECKLIST	
14. Were matrix spike recoveries within laboratory-specified limits?	No
Comments: The MS and MSD recoveries for target analytes were within laboratory-specified limits with the following exceptions. **The MS and MSD for DRO in batch 18909 were below the acceptable limits of 67.4% to 117% at -2070 and -2260%, respectively. As a result of severe matrix interference, the samples were qualified as J for detections and UJ for non-detects for the analytes DRO and MRO.**	
15. Was the total number of laboratory control samples analyzed equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Laboratory control samples were reported on a greater than 5% basis.	
16. Were laboratory control recoveries within laboratory-specified limits?	Yes
Comments: Laboratory control recoveries were within laboratory-specified limits.	
17. Were surrogate recoveries within laboratory control limits?	Yes
Comments: Surrogate recoveries were within laboratory control limits.	
18. Was the number of equipment, trip, or field blanks collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	Yes
Comments: Four equipment blanks (1EB042109-1, 2EB042109-1, 1EB042109-2, and 2EB042109-2) were submitted with this data set which is at least 10% the total number of samples.	
19. Were detections found in trip blanks, equipment blanks, or field blanks?	No
Comments: There were no detections in the equipment blanks.	
20. Were the field duplicates collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	Yes
Comments: One field duplicate, BD042109 was collected as a duplicate of sample CS-8 which is at least 10% the total number of samples.	
21. Were field duplicate RPD values less than the upper RPD limit (soil [50%], water [30%], or air/vapor [25%]), as specified by the laboratory or method?	Yes
Comments: Field duplicate RPD values were less than the upper RPD limit of 50% for soil samples as shown in the Field Duplicate Summary table at the end of this report.	
22. Were laboratory duplicate RPD values within laboratory-specified limits?	N/A
Comments: Laboratory duplicates were not prepared for this data set.	

DATA QUALIFICATION SUMMARY

Analyte	Field Sample ID	Lab Sample ID	Result (mg/kg)	Reviewer Qualifier	Reviewer Qualifier Reason
DRO	BD042109	0904327-01	5500	J	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	BD042109	0904327-01	ND (500)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
DRO	CS-15	0904327-02	5000	J	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	CS-15	0904327-02	ND (500)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
DRO	CS-8	0904327-03	6100	J	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	CS-8	0904327-03	ND (500)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
DRO	1EB042109-1	0904327-04	ND (1.0)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	1EB042109-1	0904327-04	ND (5.0)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
DRO	2-EB042109-1	0904327-05	ND (1.0)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	2-EB042109-1	0904327-05	ND (5.0)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
DRO	CS-14	0904327-06	130	J	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	CS-14	0904327-06	ND (50)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
DRO	1EB042109-2	0904327-07	ND (1.0)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	1EB042109-2	0904327-07	ND (5.0)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.

Analyte	Field Sample ID	Lab Sample ID	Result (mg/kg)	Reviewer Qualifier	Reviewer Qualifier Reason
DRO	2EB042109-2	0904327-08	ND (1.0)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	2EB042109-2	0904327-08	ND (5.0)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.

FIELD DUPLICATE SUMMARY

Client Sample ID: CS-8 Field Duplicate Sample ID: BD042109			
Analyte	**Laboratory Result**	**Duplicate Result**	**Relative Percent Difference (RPD)**
DRO	6100 mg/kg	5500 mg/kg	10.3%
Field duplicate RPD control limits should not exceed 30% for water, 50% for soil, or 25% for air or vapor as established by USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.			

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Wednesday, April 29, 2009

Gaurav Rajen
Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-0227
FAX (505) 722-0210

RE: Excavation Fan Out Area

Order No.: 0904388

Dear Gaurav Rajen:

Hall Environmental Analysis Laboratory, Inc. received 19 sample(s) on 4/24/2009 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc.

Date: *29-Apr-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area
Lab Order: 0904388

Lab ID: 0904388-01 **Collection Date:** 4/22/2009 11:15:00 AM
Client Sample ID: 1EB042209 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/24/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/24/2009
Surr: DNOP	113	58-140		%REC	1	4/24/2009

Lab ID: 0904388-02 **Collection Date:** 4/22/2009 11:10:00 AM
Client Sample ID: 2EB042209 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/24/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/24/2009
Surr: DNOP	104	58-140		%REC	1	4/24/2009

Lab ID: 0904388-03 **Collection Date:** 4/22/2009 5:15:00 PM
Client Sample ID: MS/MSD CS-7 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	510	10		mg/Kg	1	4/27/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/27/2009
Surr: DNOP	113	61.7-135		%REC	1	4/27/2009

Lab ID: 0904388-04 **Collection Date:** 4/22/2009 2:30:00 PM
Client Sample ID: FS-4 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	420	10		mg/Kg	1	4/27/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/27/2009
Surr: DNOP	85.8	61.7-135		%REC	1	4/27/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

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Hall Environmental Analysis Laboratory, Inc.

Date: *29-Apr-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area

Lab Order: 0904388

Lab ID: 0904388-05
Client Sample ID: CS-11
Collection Date: 4/22/2009 3:20:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	380	10		mg/Kg	1	4/27/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/27/2009
Surr: DNOP	92.3	61.7-135		%REC	1	4/27/2009

Lab ID: 0904388-06
Client Sample ID: CS-19
Collection Date: 4/23/2009 4:25:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	1600	100		mg/Kg	10	4/27/2009
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	4/27/2009
Surr: DNOP	98.5	61.7-135		%REC	10	4/27/2009

Lab ID: 0904388-07
Client Sample ID: FS-5
Collection Date: 4/22/2009 5:25:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/27/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/27/2009
Surr: DNOP	69.0	61.7-135		%REC	1	4/27/2009

Lab ID: 0904388-08
Client Sample ID: FS-6
Collection Date: 4/23/2009 2:50:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	280	10		mg/Kg	1	4/27/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/27/2009
Surr: DNOP	93.2	61.7-135		%REC	1	4/27/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

2

Hall Environmental Analysis Laboratory, Inc.

Date: *29-Apr-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area
Lab Order: 0904388

Lab ID: 0904388-09
Collection Date: 4/23/2009 3:15:00 PM
Client Sample ID: CS-13
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/27/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/27/2009
Surr: DNOP	84.8	61.7-135		%REC	1	4/27/2009

Lab ID: 0904388-10
Collection Date: 4/22/2009 5:33:00 PM
Client Sample ID: CS-12
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	490	10		mg/Kg	1	4/27/2009
Motor Oil Range Organics (MRO)	61	50		mg/Kg	1	4/27/2009
Surr: DNOP	100	61.7-135		%REC	1	4/27/2009

Lab ID: 0904388-11
Collection Date: 4/22/2009 3:40:00 PM
Client Sample ID: CS-5
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	34	10		mg/Kg	1	4/27/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/27/2009
Surr: DNOP	87.7	61.7-135		%REC	1	4/27/2009

Lab ID: 0904388-12
Collection Date: 4/22/2009 4:15:00 PM
Client Sample ID: CS-18
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	330	10		mg/Kg	1	4/27/2009
Motor Oil Range Organics (MRO)	60	50		mg/Kg	1	4/27/2009
Surr: DNOP	93.3	61.7-135		%REC	1	4/27/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *29-Apr-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area

Lab Order: 0904388

Lab ID: 0904388-13 **Collection Date:** 4/23/2009
Client Sample ID: BD **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	1700	100		mg/Kg	10	4/27/2009
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	4/27/2009
Surr: DNOP	102	61.7-135		%REC	10	4/27/2009

Lab ID: 0904388-14 **Collection Date:** 4/22/2009 4:30:00 PM
Client Sample ID: CS-10 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	24	10		mg/Kg	1	4/27/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/27/2009
Surr: DNOP	83.8	61.7-135		%REC	1	4/27/2009

Lab ID: 0904388-15 **Collection Date:** 4/22/2009 5:15:00 PM
Client Sample ID: CS-7 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	400	10		mg/Kg	1	4/27/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/27/2009
Surr: DNOP	107	61.7-135		%REC	1	4/27/2009

Lab ID: 0904388-16 **Collection Date:** 4/22/2009 1:25:00 PM
Client Sample ID: CS-16 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/27/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/27/2009
Surr: DNOP	97.6	61.7-135		%REC	1	4/27/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *29-Apr-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area

Lab Order: 0904388

Lab ID: 0904388-17
Client Sample ID: CS-17
Collection Date: 4/21/2009 4:10:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	73	10		mg/Kg	1	4/27/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/27/2009
Surr: DNOP	98.4	61.7-135		%REC	1	4/27/2009

Lab ID: 0904388-18
Client Sample ID: 1EB042309
Collection Date: 4/23/2009 1:20:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/24/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/24/2009
Surr: DNOP	110	58-140		%REC	1	4/24/2009

Lab ID: 0904388-19
Client Sample ID: 2EB042309
Collection Date: 4/23/2009 1:25:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/24/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	4/24/2009
Surr: DNOP	108	58-140		%REC	1	4/24/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area **Work Order:** 0904388

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics									
Sample ID: MB-18939		*MBLK*			Batch ID:	**18939**	Analysis Date:		4/27/2009
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-18939		*LCS*			Batch ID:	**18939**	Analysis Date:		4/27/2009
Diesel Range Organics (DRO)	45.28	mg/Kg	10	90.6	64.6	116			
Sample ID: LCSD-18939		*LCSD*			Batch ID:	**18939**	Analysis Date:		4/27/2009
Diesel Range Organics (DRO)	47.76	mg/Kg	10	95.5	64.6	116	0	17.4	
Method: EPA Method 8015B: Diesel Range									
Sample ID: MB-18937		*MBLK*			Batch ID:	**18937**	Analysis Date:		4/24/2009
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-18937		*LCS*			Batch ID:	**18937**	Analysis Date:		4/24/2009
Diesel Range Organics (DRO)	5.829	mg/L	1.0	117	74	157			
Sample ID: LCSD-18937		*LCSD*			Batch ID:	**18937**	Analysis Date:		4/24/2009
Diesel Range Organics (DRO)	6.780	mg/L	1.0	136	74	157	15.1	23	

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name WESTERN REFINING GALLU — Date Received: 4/24/2009

Work Order Number 0904388 — Received by: TLS

Checklist completed by: _____ Signature — 4/24/09 Date — Sample ID labels checked by: TS Initials

Matrix: — Carrier name: Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☑	No ☐	N/A ☐	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	

Container/Temp Blank temperature? **6°** *<6° C Acceptable* If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

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Client: Western Refining Company Gallup

Mailing Address: Route 3 Box 7 Gallup, NM 87301

Phone #: 505-722-3833

email or Fax#: 505-722-0210

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☒ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Excavation Fan Out Area

Project #: —

Project Manager: Gaurav Rajen

Sampler: Regina Mitchell / John Reitz

On Ice: Yes No

Sample Temperature: °C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0904388	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
4/22/09	1115	water	1EB 042209	40mL VOA / 3	HCl	1			X													
4/22/09	1110	water	2EB 042209	40mL VOA / 3	HCl	2			X													
4/22/09	1715	soil	MS/MSD CS-7	4oz jar / 1	None	3			X													
4/22/09	1430	soil	FS-4	4oz jar / 1	none	4			X													
4/22/09	1520	soil	CS-11	4oz jar / 1	none	5			X													
4/23/09	1625	soil	CS-19	4oz jar / 1	none	6			X													
4/22/09	1725	soil	FS-5	4oz jar / 1	none	7			X													
4/23/09	1450	soil	FS-6	4oz jar / 1	none	8			X													
4/23/09	1515	soil	CS-13	4oz jar / 1	none	9			X													
4/22/09	1733	soil	CS-12	4oz jar / 1	none	10			X													
4/22/09	1540	soil	CS-5	4oz jar / 1	None	11			X													
4/22/09	1615	soil	CS-18	4oz jar / 1	none	12			X													

Date:	Time:	Relinquished by:	Received by:	Date	Time
4/23/09	1730	Regina Mitchell	[signature]	4/23/09	1731
4/24/09	8:00	[signature]	[signature]	4/24/09	807

Remarks: Please copy results to Regina@rmitchell@trihydro.com

*as per R.M. requested rush analysis as 4/24

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

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Chain-of-Custody Record

Client: Western Refining Company

Mailing Address: Route 3 Box 7
Gallup, NM 87301

Phone #: 505-722-3833

email or Fax#: 505-722-0210

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☒ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Excavation Fan out area

Project #: —

Project Manager: Gaurav Rajen

Sampler: Regina Mitchell / John Peitz

On Ice: ☒ Yes ☐ No

Sample Temperature: [illegible]

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0904383	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
4/23/09	—	soil	BD	4oz jar / 1	None	13			X													
4/22/09	1630	soil	CS-10	4oz jar / 1	None	14			X													
4/22/09	1715	soil	CS-7	4oz jar / 1	None	15			X													
4/22/09	1325	soil	CS-16	4oz jar / 1	None	16			X													
4/21/09	1610	soil	CS-17	4oz jar / 1	None	17			X													
4/23/09	1320	water	7EB042309	40ml VOA / 3	HCl	18			X													
4/23/09	1325	water	2EB042309	40ml VOA / 3	HCl	19			X													

Date:	Time:	Relinquished by:	Received by:	Date	Time
4/23/09	1730	Regina Mitchell	[signature]	4/23/09	1731
8/06 4/24/09		[signature]	[signature]	4/24/09	802

Remarks: Please copy results to regina at rmitchell@trihydro.com

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Tier II Data Validation Report Summary

Client: Western Refining Company, Gallup	Laboratory: Hall Environmental Analysis Laboratory, Inc.
Project Name: April 2009 Sampling Event	Sample Matrix: Soil
Project Number: 697-017-002	Sample Start Date: April 21, 2009
Date Validated: June 22, 2009	Sample End Date: April 23, 2009
Parameters Included: Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by Environmental Protection Agency (EPA) Method 8015B	
Laboratory Project IDs: 0904388	
Data Validator's Name: Jessica Swanson, Environmental Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services group on the analytical data report package generated by Hall Environmental Analysis Laboratory, Inc. evaluating samples from the Western Refining Company site located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values of samples from field duplicate pairs. Laboratory accuracy was established by reviewing the demonstrated percent recoveries of laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) to verify that none of the data were biased. Additionally, field accuracy was established by collecting equipment blanks to monitor for possible ambient or cross contamination during sampling. Method compliance was established by reviewing holding times, detection limits, surrogate recoveries, method blanks, and the LCS and LCSD percent recoveries against method specific requirements. Completeness was evaluated by determining the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody, laboratory analytical methods, and any other necessary documents associated with this analytical data set.

Data were evaluated in general accordance with validation criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-08-01, June 2008 with additional reference to USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999. Review of duplicates is conducted in accordance with USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.

Tier II Data Validation Report Summary

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
1EB042209	0904388-01
2EB042209	0904388-02
MS/MSD CS-7	0904388-03
FS-4	0904388-04
CS-11	0904388-05
CS-19	0904388-06
FS-5	0904388-07
FS-6	0904388-08
CS-13	0904388-09
CS-12	0904388-10
CS-5	0904388-11
CS-18	0904388-12
BD	0904388-13
CS-10	0904388-14
CS-7	0904388-15
CS-16	0904388-16
CS-17	0904388-17
1EB042309	0904388-18
2EB042309	0904388-19

Tier II Data Validation Report

The samples were analyzed for client-specified analytes. Chain-of-custody (COC) completeness is included in Section #3. The laboratory data were reviewed to evaluate compliance with the required methods and the quality of the reported data. A leading check mark (✓) indicates that the referenced data were deemed acceptable. A preceding crossed circle (⊗) signifies problems with the referenced data that may have warranted attaching qualifiers to the data.

- ✓ Data Completeness
- ✓ COC Documentation
- ✓ Holding Times and Preservation
- ✓ Laboratory Blanks
- ✓ System Monitoring Compounds (i.e. Surrogates)
- ✓ Laboratory Control Samples/Laboratory Control Sample Duplicates (LCS/LCSD)
- ✓ Field Duplicates
- ✓ Equipment Blanks

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Section #2.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data which are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R, the data may be used for site evaluation, with the reasons for qualification being given consideration when interpreting sample concentrations. Data points which are assigned an R qualifier should not be used for any site evaluation purposes. Data were not qualified as a result of this validation.

Data Completeness

The analyses appeared to be performed as requested on the chain-of-custody records. The associated samples were received by the laboratory and appeared to be analyzed properly. No data points were rejected. The data completeness measure for this data package is 100%.

VALIDATION CRITERIA CHECKLIST	
1. Did the laboratory identify any non-conformances related to the analytical data?	No
Comments: The laboratory did not identify any non-conformances related to this data set.	
2. Were data qualification flags used by the laboratory? If yes, define.	No
Comments: The laboratory did not use data qualification flags with this data set.	
3. Were sample chain-of-custody forms complete?	Yes
Comments: The COC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.	
4. Were detection limits in accordance with the QAPP, permit, or method, or indicated as acceptable by the Tier I validator?	Yes
Comments: Detection limits were reviewed and appeared to be acceptable. Dilutions of 10 times were applied to samples CS-19 and BD for DRO analyses. The final usability of the data with respect to dilutions will be determined by the project manager.	
5. Were the requested analytical methods in compliance with the QAPP, permit, or COC?	Yes
Comments: The requested analytical methods were in compliance with what was requested on the COC.	
6. Were samples received in good condition within method specified requirements?	Yes
Comments: Samples were received intact and in good condition. Cooler temperatures were within the 4°C +/- 2°C acceptable range at 6.0°C, as noted in the Sample Receipt Checklist. Custody seals were present and intact on the sample bottles.	
7. Were samples analyzed within method specified or technical holding times?	Yes
Comments: Samples were analyzed within the acceptable hold time.	
8. Were reported units appropriate for the associated sample matrix/matrices and method(s) of analyses?	Yes
Comments: Analyte concentrations were reported in units of mg/kg. The reported units are acceptable for the soil matrix. The equipment blanks were reported in mg/L which is acceptable for the water matrix.	
9. Do the laboratory reports include all constituents requested to be reported as indicated by the Tier I validator?	Yes
Comments: As indicated on the Tier I data validation, laboratory reported constituents were in accordance with those requested. A MS/MSD sample was collected and not used as a matrix spike. Discussions with the laboratory determined that this was acceptable and required no further action.	
10. Was there indication from the laboratory that the initial or continued calibration verification results were within acceptable limits?	N/A
Comments: Initial and continuing calibration data were not included as part of this data set; however, these data are assumed to be acceptable as the laboratory did not note that any calibration verification results were outside acceptable limits.	
11. Was the total number of method blank samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Method blanks were prepared on a greater than 5% basis.	
12. Were method blank detections reported for this data set?	No
Comments: Method blank detections were not reported for this data set.	
13. Was the total number of matrix spike samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	No
Comments: Matrix spike samples were not prepared for this data set even though a MS/MSD sample was submitted. The laboratory was contacted and stated that the sample concentration was too high and the spike would be un-recoverable and therefore the matrix spike was not performed. No further action was required.	

VALIDATION CRITERIA CHECKLIST	
14. Were matrix spike recoveries within laboratory-specified limits?	N/A
Comments: Matrix spike samples were not prepared for this data set.	
15. Was the total number of laboratory control samples analyzed equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Laboratory control samples were reported on a greater than 5% basis.	
16. Were laboratory control recoveries within laboratory-specified limits?	Yes
Comments: Laboratory control recoveries were within laboratory-specified limits.	
17. Were surrogate recoveries within laboratory control limits?	Yes
Comments: Surrogate recoveries were within laboratory control limits.	
18. Was the number of equipment, trip, or field blanks collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	Yes
Comments: Four equipment blanks (1EB042209, 2EB042209, 1EB042309, and 2EB042309) were submitted with this data set which is at least 10% the total number of samples.	
19. Were detections found in trip blanks, equipment blanks, or field blanks?	No
Comments: There were no detections in the equipment blanks.	
20. Were the field duplicates collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	No
Comments: One field duplicate, BD was collected as a duplicate of sample CS-19 which is less than 10% the total number of samples.	
21. Were field duplicate RPD values less than the upper RPD limit (soil [50%], water [30%], or air/vapor [25%]), as specified by the laboratory or method?	Yes
Comments: Field duplicate RPD values were less than the upper RPD limit of 50% for soil samples as shown in the Field Duplicate Summary table at the end of this report.	
22. Were laboratory duplicate RPD values within laboratory-specified limits?	N/A
Comments: Laboratory duplicates were not prepared for this data set.	

FIELD DUPLICATE SUMMARY

Client Sample ID: CS-19 Field Duplicate Sample ID: BD			
Analyte	**Laboratory Result**	**Duplicate Result**	**Relative Percent Difference (RPD)**
DRO	1600 mg/kg	1700 mg/kg	6.1%
Field duplicate RPD control limits should not exceed 30% for water, 50% for soil, or 25% for air or vapor as established by USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.			

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Friday, May 22, 2009

Gaurav Rajen
Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-0227
FAX (505) 722-0210

RE: Excavation Fan Out Area

Order No.: 0905343

Dear Gaurav Rajen:

Hall Environmental Analysis Laboratory, Inc. received 4 sample(s) on 5/19/2009 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

ACCREDITED IN ACCORDANCE WITH nelac

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

CASE NARRATIVE

"S" flags denote that the surrogate was not recoverable due to sample dilution or matrix interferences.

Hall Environmental Analysis Laboratory, Inc.

Date: *22-May-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area

Lab Order: 0905343

Lab ID: 0905343-01
Client Sample ID: CS-20
Collection Date: 5/19/2009 10:50:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	13000	200		mg/Kg	20	5/21/2009
Motor Oil Range Organics (MRO)	ND	1000		mg/Kg	20	5/21/2009
Surr: DNOP	0	61.7-135	S	%REC	20	5/21/2009

Lab ID: 0905343-02
Client Sample ID: MS/MSD-CS20
Collection Date: 5/19/1990 10:50:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	12000	200		mg/Kg	20	5/21/2009
Motor Oil Range Organics (MRO)	ND	1000		mg/Kg	20	5/21/2009
Surr: DNOP	0	61.7-135	S	%REC	20	5/21/2009

Lab ID: 0905343-03
Client Sample ID: CS-21
Collection Date: 5/19/2009 10:56:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	3000	100		mg/Kg	10	5/21/2009
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	5/21/2009
Surr: DNOP	89.6	61.7-135		%REC	10	5/21/2009

Lab ID: 0905343-04
Client Sample ID: BD051909
Collection Date: 5/19/2009
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	2100	100		mg/Kg	10	5/21/2009
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	5/21/2009
Surr: DNOP	94.6	61.7-135		%REC	10	5/21/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area **Work Order:** 0905343

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics									
Sample ID: MB-19148		*MBLK*			Batch ID:	**19148**	Analysis Date:		5/21/2009
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-19148		*LCS*			Batch ID:	**19148**	Analysis Date:		5/21/2009
Diesel Range Organics (DRO)	52.42	mg/Kg	10	105	64.6	116			
Sample ID: LCSD-19148		*LCSD*			Batch ID:	**19148**	Analysis Date:		5/21/2009
Diesel Range Organics (DRO)	53.43	mg/Kg	10	107	64.6	116	1.90	17.4	

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name WESTERN REFINING GALLU

Date Received: 5/19/2009

Work Order Number 0905343

Received by: TLS

Sample ID labels checked by: TD
Initials

Checklist completed by: [signature] Signature 5/19/09 Date

Matrix:

Carrier name: Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☑	No ☐	N/A ☐	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		Number of preserved bottles checked for pH:
Water - VOA vials have zero headspace?	No VOA vials submitted ☑	Yes ☐	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	*<2 >12 unless noted below.*
Container/Temp Blank temperature?	**4.9°**	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

Client: Western Refining Company Gallup

Mailing Address: Route 3 Box 7 Gallup NM 87301

Phone #: 505 722-3833

email or Fax#: 505 722 0210

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☒ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Excavation Far Out area

Project #: —

Project Manager: Gaurav Rajen

Sampler: John Rez

On Ice: ☒ Yes ☐ No

Sample Temperature: 4.6°

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0905343	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
~~5/19/09~~	~~1050~~	~~Soil~~	~~CS-20~~																			
5/19/09	1050	Soil	CS-20	4oz jar / 1	None	1			X													
5/19/09	1050	Soil	MS/MSD-CS20	4oz jar / 1	None	2			X													
5/19/09	1056	Soil	CS-21	4oz jar / 1	None	3			X													
5/19/09	—	Soil	BD 051909	4oz jar / 1	None	4			X													

Date:	Time:	Relinquished by:	Received by:	Date	Time
5/19/09	1333	[signature]	[signature]	5/19/09	1333
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Tier II Data Validation Report Summary

Client: Western Refining Company, Gallup	Laboratory: Hall Environmental Analysis Laboratory, Inc.
Project Name: May 2009 Sampling Event	Sample Matrix: Soil
Project Number: 697-017-002	Sample Start Date: May 19, 2009
Date Validated: June 22, 2009	Sample End Date: May 19, 2009
Parameters Included: Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by Environmental Protection Agency (EPA) Method 8015B	
Laboratory Project IDs: 0905343	
Data Validator's Name: Jessica Swanson, Environmental Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services group on the analytical data report package generated by Hall Environmental Analysis Laboratory, Inc. evaluating samples from the Western Refining Company site located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values of samples from field duplicate pairs. Laboratory accuracy was established by reviewing the demonstrated percent recoveries of laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) to verify that none of the data were biased. Method compliance was established by reviewing holding times, detection limits, surrogate recoveries, method blanks, and the LCS and LCSD percent recoveries against method specific requirements. Completeness was evaluated by determining the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody, laboratory analytical methods, and any other necessary documents associated with this analytical data set.

Data were evaluated in general accordance with validation criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-08-01, June 2008 with additional reference to USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999. Review of duplicates is conducted in accordance with USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
CS-20	0905343-01
MS/MSD CS-20	0905343-02
CS-21	0905343-03
BD-51909	0905343-04

Tier II Data Validation Report

The samples were analyzed for client-specified analytes. Chain-of-custody (COC) completeness is included in Section #3. The laboratory data were reviewed to evaluate compliance with the required methods and the quality of the reported data. A leading check mark (✓) indicates that the referenced data were deemed acceptable. A preceding crossed circle (⊗) signifies problems with the referenced data that may have warranted attaching qualifiers to the data.

- ✓ Data Completeness
- ✓ COC Documentation
- ✓ Holding Times and Preservation
- ✓ Laboratory Blanks
- ✓ System Monitoring Compounds (i.e. Surrogates)
- ✓ Laboratory Control Samples/Laboratory Control Sample Duplicates (LCS/LCSD)
- ✓ Field Duplicates

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Section #2.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data which are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R, the data may be used for site evaluation, with the reasons for qualification being given consideration when interpreting sample concentrations. Data points which are assigned an R qualifier should not be used for any site evaluation purposes. Data were not qualified as a result of this validation.

Data Completeness

The analyses appeared to be performed as requested on the chain-of-custody records. The associated samples were received by the laboratory and appeared to be analyzed properly. No data points were rejected. The data completeness measure for this data package is 100%.

VALIDATION CRITERIA CHECKLIST	
1. Did the laboratory identify any non-conformances related to the analytical data?	Yes
Comments: The laboratory noted in the case narrative that the S flag denotes that the surrogate was not recoverable due to sample dilution or matrix interferences.	
2. Were data qualification flags used by the laboratory? If yes, define.	Yes
Comments: The laboratory used the following data qualification flag with this data set. S – Surrogate not recoverable due to sample dilution or matrix interference	
3. Were sample chain-of-custody forms complete?	Yes
Comments: The COC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.	
4. Were detection limits in accordance with the QAPP, permit, or method, or indicated as acceptable by the Tier I validator?	Yes
Comments: Detection limits were reviewed and appeared to be acceptable. Dilutions of 10 to 20 times were applied to the samples for DRO analyses. The final usability of data with respect to dilutions with be determined by the project team.	
5. Were the requested analytical methods in compliance with the QAPP, permit, or COC?	Yes
Comments: The requested analytical methods were in compliance with what was requested on the COC.	
6. Were samples received in good condition within method specified requirements?	Yes
Comments: Samples were received intact and in good condition. Cooler temperatures were within the 4°C +/- 2°C acceptable range at 4.9°C, as noted in the Sample Receipt Checklist. Custody seals were present and intact on the sample bottles.	
7. Were samples analyzed within method specified or technical holding times?	Yes
Comments: Samples were analyzed within the acceptable hold time.	
8. Were reported units appropriate for the associated sample matrix/matrices and method(s) of analyses?	Yes
Comments: Analyte concentrations were reported in units of mg/kg. The reported units are acceptable for the soil matrix.	
9. Do the laboratory reports include all constituents requested to be reported as indicated by the Tier I validator?	Yes
Comments: As indicated on the Tier I data validation, laboratory reported constituents were in accordance with those requested. A MS/MSD sample was collected and not used as a matrix spike. Discussions with the laboratory determined that this was acceptable and required no further action.	
10. Was there indication from the laboratory that the initial or continued calibration verification results were within acceptable limits?	N/A
Comments: Initial and continuing calibration data were not included as part of this data set; however, these data are assumed to be acceptable as the laboratory did not note that any calibration verification results were outside acceptable limits.	
11. Was the total number of method blank samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Method blanks were prepared on a greater than 5% basis.	
12. Were method blank detections reported for this data set?	No
Comments: Method blank detections were not reported for this data set.	

VALIDATION CRITERIA CHECKLIST	
13. Was the total number of matrix spike samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	No
Comments: Matrix spike samples were not prepared for this data set even though a MS/MSD sample was submitted. The laboratory was contacted and stated that the sample concentration was too high and the spike would be un-recoverable and therefore the matrix spike was not performed. No further action was required.	
14. Were matrix spike recoveries within laboratory-specified limits?	N/A
Comments: Matrix spike samples were not prepared for this data set.	
15. Was the total number of laboratory control samples analyzed equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Laboratory control samples were reported on a greater than 5% basis.	
16. Were laboratory control recoveries within laboratory-specified limits?	Yes
Comments: Laboratory control recoveries were within laboratory-specified limits.	
17. Were surrogate recoveries within laboratory control limits?	Yes
Comments: Surrogate recoveries were within laboratory control limits. The surrogate DNOP was not reportable in samples CS-20 and MS/MSD CS-20. This is acceptable per the method.	
18. Was the number of equipment, trip, or field blanks collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	No
Comments: Blank samples were not submitted with this data set.	
19. Were detections found in trip blanks, equipment blanks, or field blanks?	N/A
Comments: Blank samples were not submitted with this data set.	
20. Were the field duplicates collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	Yes
Comments: One field duplicate, BD051909 was collected as a duplicate of sample CS-21 which is at least 10% the total number of samples.	
21. Were field duplicate RPD values less than the upper RPD limit (soil [50%], water [30%], or air/vapor [25%]), as specified by the laboratory or method?	Yes
Comments: Field duplicate RPD values were less than the upper RPD limit of 50% for soil samples as shown in the Field Duplicate Summary table at the end of this report.	
22. Were laboratory duplicate RPD values within laboratory-specified limits?	N/A
Comments: Laboratory duplicates were not prepared for this data set.	

FIELD DUPLICATE SUMMARY

Client Sample ID: CS-21 Field Duplicate Sample ID: BD051919			
Analyte	**Laboratory Result**	**Duplicate Result**	**Relative Percent Difference (RPD)**
DRO	3000 mg/kg	2100 mg/kg	35.3%
Field duplicate RPD control limits should not exceed 30% for water, 50% for soil, or 25% for air or vapor as established by USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.			

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Monday, June 08, 2009

Gaurav Rajen
Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-0227
FAX (505) 722-0210

RE: Excavation Fan Out Area

Order No.: 0906074

Dear Gaurav Rajen:

Hall Environmental Analysis Laboratory, Inc. received 4 sample(s) on 6/4/2009 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

ACCREDITED IN ACCORDANCE WITH nelac

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc.

Date: *08-Jun-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area
Lab Order: 0906074

Lab ID: 0906074-01
Collection Date: 6/3/2009 3:15:00 PM
Client Sample ID: CS-24
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/5/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/5/2009
Surr: DNOP	97.0	61.7-135		%REC	1	6/5/2009

Lab ID: 0906074-02
Collection Date: 6/3/2009 3:00:00 PM
Client Sample ID: CS-23
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/5/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/5/2009
Surr: DNOP	93.1	61.7-135		%REC	1	6/5/2009

Lab ID: 0906074-03
Collection Date: 6/3/2009 2:40:00 PM
Client Sample ID: CS-22
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	170	10		mg/Kg	1	6/5/2009
Motor Oil Range Organics (MRO)	52	50		mg/Kg	1	6/5/2009
Surr: DNOP	94.3	61.7-135		%REC	1	6/5/2009

Lab ID: 0906074-04
Collection Date: 6/3/2009
Client Sample ID: BD
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/5/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/5/2009
Surr: DNOP	96.1	61.7-135		%REC	1	6/5/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area **Work Order:** 0906074

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics									
Sample ID: 0906074-03AMSD		*MSD*			Batch ID:	**19269**	Analysis Date:		6/5/2009
Diesel Range Organics (DRO)	128.2	mg/Kg	10	-75.2	67.4	117	0.657	17.4	S
Sample ID: MB-19269		*MBLK*			Batch ID:	**19269**	Analysis Date:		6/5/2009
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-19269		*LCS*			Batch ID:	**19269**	Analysis Date:		6/5/2009
Diesel Range Organics (DRO)	49.97	mg/Kg	10	99.9	64.6	116			
Sample ID: LCSD-19269		*LCSD*			Batch ID:	**19269**	Analysis Date:		6/5/2009
Diesel Range Organics (DRO)	50.82	mg/Kg	10	102	64.6	116	1.69	17.4	
Sample ID: 0906074-03AMS		*MS*			Batch ID:	**19269**	Analysis Date:		6/5/2009
Diesel Range Organics (DRO)	127.4	mg/Kg	10	-76.9	67.4	117			S

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name WESTERN REFINING GALLU

Date Received: 6/4/2009

Work Order Number 0906074

Received by: AT

Sample ID labels checked by: AS
Initials

Checklist completed by: [signature] 6/4/09
Signature Date

Matrix: Carrier name Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☑	No ☐	N/A ☐	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		Number of preserved bottles checked for pH:
Water - VOA vials have zero headspace?	No VOA vials submitted ☑	Yes ☐	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	*<2 >12 unless noted below.*
Container/Temp Blank temperature?	**1.0°**	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

Client: Western Refining Company

Mailing Address: Route 3 Box 7
Gallup, NM 87301

Phone #: 505-722-3833

email or Fax#: 505-722-0210

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☒ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☐ Standard ☒ Rush 2-3 days

Project Name: Excavation Fan out Area

Project #: —

Project Manager:

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 4.0°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0906071	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)				Air Bubbles (Y or N)
6/3/09	1515	Soil	CS-24	4oz jar / 1	None	-1			X												
6/3/09	1500	Soil	CS-23	4oz jar / 1	None	-2			X												
6/3/09	1440	Soil	CS-22	4oz jar / 1	None	-3			X												
6/3/09	1440	Soil	MS/MSD CS-22	4oz jar / 1	None	-3			X												
6/3/09	[illegible]	Soil	BD	4oz jar / 1	None	-4			X												

Date:	Time:	Relinquished by:	Received by:	Date	Time
6/3/09	2100	Regina Mitchell	[signature]	6/3/09	2100
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: Please copy results to rmitchell@trihydro.com

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Tier II Data Validation Report Summary

Client: Western Refining Company, Gallup	Laboratory: Hall Environmental Analysis Laboratory, Inc.
Project Name: June 2009 Sampling Event	Sample Matrix: Soil
Project Number: 697-017-002	Sample Start Date: June 3, 2009
Date Validated: June 22, 2009	Sample End Date: June 3, 2009
Parameters Included: Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by Environmental Protection Agency (EPA) Method 8015B	
Laboratory Project IDs: 0906074	
Data Validator's Name: Jessica Swanson, Environmental Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services group on the analytical data report package generated by Hall Environmental Analysis Laboratory, Inc. evaluating samples from the Western Refining Company site located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values of samples from field duplicate pairs. Laboratory accuracy was established by reviewing the demonstrated percent recoveries of matrix spike (MS) and matrix spike duplicate (MSD) samples, and of laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) to verify that none of the data were biased. Method compliance was established by reviewing holding times, detection limits, surrogate recoveries, method blanks, and the LCS and LCSD percent recoveries against method specific requirements. Completeness was evaluated by determining the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody, laboratory analytical methods, and any other necessary documents associated with this analytical data set.

Data were evaluated in general accordance with validation criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-08-01, June 2008 with additional reference to USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999. Review of duplicates is conducted in accordance with USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
CS-24	0906074-01
CS-23	0906074-02
CS-22	0906074-03
BD	0906074-04

Tier II Data Validation Report

The samples were analyzed for client-specified analytes. Chain-of-custody (COC) completeness is included in Section #3. The laboratory data were reviewed to evaluate compliance with the required methods and the quality of the reported data. A leading check mark (✓) indicates that the referenced data were deemed acceptable. A preceding crossed circle (⊗) signifies problems with the referenced data that may have warranted attaching qualifiers to the data.

- ✓ Data Completeness
- ✓ COC Documentation
- ✓ Holding Times and Preservation
- ✓ Laboratory Blanks
- ✓ System Monitoring Compounds (i.e. Surrogates)
- ✓ Laboratory Control Samples/Laboratory Control Sample Duplicates (LCS/LCSD)
- ⊗ Matrix Spike/Matrix Spike Duplicates (MS/MSD)
- ✓ Field Duplicates

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Section #2.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data which are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R, the data may be used for site evaluation, with the reasons for qualification being given consideration when interpreting sample concentrations. Data points which are assigned an R qualifier should not be used for any site evaluation purposes. Data were qualified as a result of this validation for low matrix spike recoveries.

Data qualifiers used during this validation included:

J – Estimated concentration

UJ – Estimated reporting limit

Data Completeness

The analyses appeared to be performed as requested on the chain-of-custody records. The associated samples were received by the laboratory and appeared to be analyzed properly. No data points were rejected. The data completeness measure for this data package is 100%.

VALIDATION CRITERIA CHECKLIST	
1. Did the laboratory identify any non-conformances related to the analytical data?	No
Comments: The laboratory did not identify any non-conformances related to this data set.	
2. Were data qualification flags used by the laboratory? If yes, define.	Yes
Comments: The laboratory used the following data qualification flag with this data set. S – Spike recovery outside accepted recovery limits.	
3. Were sample chain-of-custody forms complete?	Yes
Comments: The COC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.	
4. Were detection limits in accordance with the QAPP, permit, or method, or indicated as acceptable by the Tier I validator?	Yes
Comments: Detection limits were reviewed and appeared to be acceptable. Dilutions were not applied to the samples in this data set.	
5. Were the requested analytical methods in compliance with the QAPP, permit, or COC?	Yes
Comments: The requested analytical methods were in compliance with what was requested on the COC.	
6. Were samples received in good condition within method specified requirements?	Yes
Comments: Samples were received intact and in good condition. Cooler temperatures were below the 4°C +/- 2°C acceptable range at 1.0°C, as noted in the Sample Receipt Checklist. The cooler temperature below 2°C was judged as acceptable since the samples were not reported to be frozen upon receipt at the laboratory and the sample containers were reported to be intact.	
7. Were samples analyzed within method specified or technical holding times?	Yes
Comments: Samples were analyzed within the acceptable hold time.	
8. Were reported units appropriate for the associated sample matrix/matrices and method(s) of analyses?	Yes
Comments: Analyte concentrations were reported in units of mg/kg. The reported units are acceptable for the soil matrix.	
9. Do the laboratory reports include all constituents requested to be reported as indicated by the Tier I validator?	Yes
Comments: As indicated on the Tier I data validation, laboratory reported constituents were in accordance with those requested.	
10. Was there indication from the laboratory that the initial or continued calibration verification results were within acceptable limits?	N/A
Comments: Initial and continuing calibration data were not included as part of this data set; however, these data are assumed to be acceptable as the laboratory did not note that any calibration verification results were outside acceptable limits.	
11. Was the total number of method blank samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Method blanks were prepared on a greater than 5% basis.	
12. Were method blank detections reported for this data set?	No
Comments: Method blank detections were not reported for this data set.	
13. Was the total number of matrix spike samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Matrix spike samples were prepared on a greater than 5% basis. The MS/MSD sample pairs for DRO batch 19269 were prepared from sample CS-22.	

VALIDATION CRITERIA CHECKLIST	
14. Were matrix spike recoveries within laboratory-specified limits?	No
Comments: The MS and MSD recoveries for target analytes were within laboratory-specified limits with the following exceptions. **The MS and MSD for DRO in batch 19269 were outside the acceptable limits of 67.4% to 117% at -76.9% and -75.2%, respectively. As a result of severe matrix interference, the samples were qualified as J for detections and UJ for non-detects for both DRO and MRO.**	
15. Was the total number of laboratory control samples analyzed equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Laboratory control samples were reported on a greater than 5% basis.	
16. Were laboratory control recoveries within laboratory-specified limits?	Yes
Comments: Laboratory control recoveries were within laboratory-specified limits.	
17. Were surrogate recoveries within laboratory control limits?	Yes
Comments: Surrogate recoveries were within laboratory control limits.	
18. Was the number of equipment, trip, or field blanks collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	No
Comments: Blank samples were not submitted with this data set.	
19. Were detections found in trip blanks, equipment blanks, or field blanks?	N/A
Comments: Blank samples were not submitted with this data set.	
20. Were the field duplicates collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	Yes
Comments: One field duplicate, BD was collected as a duplicate of sample CS-23 which is at least 10% the total number of samples.	
21. Were field duplicate RPD values less than the upper RPD limit (soil [50%], water [30%], or air/vapor [25%]), as specified by the laboratory or method?	N/A
Comments: Field duplicate RPD values could not be calculated since both samples were non-detect for the requested analytes.	
22. Were laboratory duplicate RPD values within laboratory-specified limits?	N/A
Comments: Laboratory duplicates were not prepared for this data set.	

DATA QUALIFICATION SUMMARY

Analyte	Field Sample ID	Lab Sample ID	Result (mg/kg)	Reviewer Qualifier	Reviewer Qualifier Reason
DRO	CS-24	0906074-01	ND (10)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	CS-24	0906074-01	ND (50)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
DRO	CS-23	0906074-02	ND (10)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	CS-23	0906074-02	ND (50)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
DRO	CS-22	0906074-03	170 mg/kg	J	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	CS-22	0906074-03	52 mg/kg	J	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
DRO	BD	0906074-04	ND (10)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	BD	0906074-04	ND (50)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Thursday, July 30, 2009

Gaurav Rajen
Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-0227
FAX (505) 722-0210

RE: Excavation Fan Out Area

Order No.: 0907447

Dear Gaurav Rajen:

Hall Environmental Analysis Laboratory, Inc. received 7 sample(s) on 7/24/2009 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
for Nancy McDuffie, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

ACCREDITED IN ACCORDANCE WITH nelac

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area
Lab Order: 0907447

CASE NARRATIVE

"S" flags denote that the surrogate was not recoverable due to sample dilution or matrix interferences.

Hall Environmental Analysis Laboratory, Inc.

Date: *30-Jul-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area

Lab Order: 0907447

Lab ID: 0907447-01 **Collection Date:** 7/23/2009 3:21:00 PM
Client Sample ID: CS-25 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	6800	200		mg/Kg	20	7/29/2009
Motor Oil Range Organics (MRO)	ND	1000		mg/Kg	20	7/29/2009
Surr: DNOP	0	61.7-135	S	%REC	20	7/29/2009

Lab ID: 0907447-02 **Collection Date:** 7/23/2009 3:36:00 PM
Client Sample ID: CS-26 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	17000	200		mg/Kg	20	7/29/2009
Motor Oil Range Organics (MRO)	ND	1000		mg/Kg	20	7/29/2009
Surr: DNOP	0	61.7-135	S	%REC	20	7/29/2009

Lab ID: 0907447-03 **Collection Date:** 7/23/2009
Client Sample ID: BD-072309 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	14000	200		mg/Kg	20	7/29/2009
Motor Oil Range Organics (MRO)	ND	1000		mg/Kg	20	7/29/2009
Surr: DNOP	0	61.7-135	S	%REC	20	7/29/2009

Lab ID: 0907447-04 **Collection Date:** 7/23/2009 3:55:00 PM
Client Sample ID: CS-27 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	1800	100		mg/Kg	10	7/29/2009
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	7/29/2009
Surr: DNOP	0	61.7-135	S	%REC	10	7/29/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *30-Jul-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area

Lab Order: 0907447

Lab ID: 0907447-05
Client Sample ID: CS-28

Collection Date: 7/23/2009 4:05:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	110	10		mg/Kg	1	7/29/2009
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/29/2009
Surr: DNOP	94.6	61.7-135		%REC	1	7/29/2009

Lab ID: 0907447-07
Client Sample ID: Rinsate-1

Collection Date: 7/23/2009 11:03:00 AM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	7/28/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	7/28/2009
Surr: DNOP	99.1	58-140		%REC	1	7/28/2009

Lab ID: 0907447-08
Client Sample ID: Rinsate-2

Collection Date: 7/23/2009 3:24:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	7/28/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	7/28/2009
Surr: DNOP	107	58-140		%REC	1	7/28/2009

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area **Work Order:** 0907447

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics									
Sample ID: 0907447-05AMSD		*MSD*			Batch ID:	**19724**	Analysis Date:		7/29/2009
Diesel Range Organics (DRO)	139.2	mg/Kg	10	48.8	67.4	117	17.6	17.4	SR
Sample ID: MB-19724		*MBLK*			Batch ID:	**19724**	Analysis Date:		7/29/2009
Diesel Range Organics (DRO)	ND	mg/Kg	10						
Motor Oil Range Organics (MRO)	ND	mg/Kg	50						
Sample ID: LCS-19724		*LCS*			Batch ID:	**19724**	Analysis Date:		7/29/2009
Diesel Range Organics (DRO)	35.49	mg/Kg	10	71.0	64.6	116			
Sample ID: LCSD-19724		*LCSD*			Batch ID:	**19724**	Analysis Date:		7/29/2009
Diesel Range Organics (DRO)	41.25	mg/Kg	10	82.5	64.6	116	15.0	17.4	
Sample ID: 0907447-05AMS		*MS*			Batch ID:	**19724**	Analysis Date:		7/29/2009
Diesel Range Organics (DRO)	166.1	mg/Kg	10	103	67.4	117			
Method: EPA Method 8015B: Diesel Range									
Sample ID: MB-19723		*MBLK*			Batch ID:	**19723**	Analysis Date:		7/28/2009
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-19723		*LCS*			Batch ID:	**19723**	Analysis Date:		7/28/2009
Diesel Range Organics (DRO)	5.319	mg/L	1.0	106	74	157			
Sample ID: LCSD-19723		*LCSD*			Batch ID:	**19723**	Analysis Date:		7/28/2009
Diesel Range Organics (DRO)	5.545	mg/L	1.0	111	74	157	4.14	23	

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name **WESTERN REFINING GALLU** Date Received: **7/24/2009**

Work Order Number **0907447** Received by: ARS

Sample ID labels checked by: _____ Initials

Checklist completed by: _____ Signature 7/24/09 Date

Matrix: Carrier name: Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☑	No ☐	N/A ☐	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		Number of preserved bottles checked for pH:
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	_____
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	*<2 >12 unless noted below.*
Container/Temp Blank temperature?	**1.6°**	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

Client: Western Refining Company Gallup

Mailing Address: Route 3 Box 7 Gallup NM 87301

Phone #: 505 722-3833

email or Fax#: 505 722 0210

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☒ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Excavation Fan out Area

Project #:

Project Manager: Gayray Rajen

Sampler: John Peltz

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.6

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0907447	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
7/23/09	1521	Soil	CS-25	4oz jar/1	None	1			X													
7/23/09	1536	Soil	CS-26	4oz jar/1	None	2			X													
7/23/09	—	Soil	BD-072309	4oz jar/1	None	3			X													
7/23/09	1555	Soil	CS-27	4oz jar/1	None	4			X													
7/23/09	1605	Soil	CS-28	4oz jar/1	None	5			X													
7/23/09	1605	Soil	MS/MSD-CS28	4oz jar/1	None	~~6~~ 5 AT 7/24/09			X													
7/23/09	1103	Water	Rinsate-1	VOA-3	HT	7			X													
7/23/09	1524	Water	Rinsate-2	VOA-3	HT	8			X													

Date:	Time:	Relinquished by:	Received by:	Date	Time
7/24	855	John Peltz 307-399-0977	[signature]	7/24/09	8:55

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Tier II Data Validation Report Summary

Client: Western Refining Company, Gallup	Laboratory: Hall Environmental Analysis Laboratory, Inc.
Project Name: July 2009 Sampling Event	Sample Matrix: Soil and Water
Project Number: 697-017-002	Sample Start Date: July 23, 2009
Date Validated: December 18, 2009	Sample End Date: July 23, 2009
Parameters Included: Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by Environmental Protection Agency (EPA) Method 8015B	
Laboratory Project IDs: 0907447	
Data Validator: Jessica Swanson, Environmental Chemist	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services group on the analytical data report package generated by Hall Environmental Analysis Laboratory, Inc. evaluating samples from the Western Refining Company site located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values of samples from field duplicate pairs and laboratory duplicate pairs. Laboratory accuracy was established by reviewing the demonstrated percent recoveries of matrix spike (MS) and matrix spike duplicate (MSD) samples, and of laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) to verify that none of the data were biased. Method compliance was established by reviewing holding times, detection limits, surrogate recoveries, method blanks, and the LCS and LCSD percent recoveries against method specific requirements. Completeness was evaluated by determining the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody, laboratory analytical methods, and any other necessary documents associated with this analytical data set.

Data were evaluated in general accordance with validation criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-08-01, June 2008 with additional reference to USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999. Review of duplicates is conducted in accordance with USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
CS-25	0907447-01
CS-26	0907447-02
BD-072309	0907447-03
CS-27	0907447-04
CS-28	0907447-05
Rinsate-1	0907447-07
Rinsate-2	0907447-08

Tier II Data Validation Report

The samples were analyzed for client-specified analytes. Chain-of-custody (COC) completeness is included in Section #3. The laboratory data were reviewed to evaluate compliance with the required methods and the quality of the reported data. A leading check mark (✓) indicates that the referenced data were deemed acceptable. A preceding crossed circle (⊗) signifies problems with the referenced data that may have warranted attaching qualifiers to the data.

- ✓ Data Completeness
- ✓ COC Documentation
- ✓ Holding Times and Preservation
- ✓ Laboratory Blanks
- ✓ System Monitoring Compounds (i.e. Surrogates)
- ✓ Laboratory Control Samples/Laboratory Control Sample Duplicates (LCS/LCSD)
- ⊗ Matrix Spike/Matrix Spike Duplicates (MS/MSD)
- ✓ Field Duplicates
- ✓ Equipment Blanks

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Section #2.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data which are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R, the data may be used for site evaluation, with the reasons for qualification being given consideration when interpreting sample concentrations. Data points which are assigned an R qualifier should not be used for any site evaluation purposes. Data were qualified as a result of this validation due to a low matrix spike recovery and a high MS/MSD RPD value.

Data qualifiers used during this validation included:

J – Estimated concentration

UJ – Estimated reporting limit

Data Completeness

The analyses appeared to be performed as requested on the chain-of-custody records. The associated samples were received by the laboratory and appeared to be analyzed properly. No data points were rejected. The data completeness measure for this data package is 100%.

VALIDATION CRITERIA CHECKLIST	
1. Was the report free of any non-conformances related to the analytical data identified by the laboratory?	Yes
Comments: The laboratory did not identify any non-conformances related to this data set.	
2. Were data qualification flags or any other notes used by the laboratory? If yes, define.	Yes
Comments: The laboratory used the following data qualification flag with this data set. S – Spike recovery outside accepted recovery limits. R – RPD outside accepted recovery limits. S – Surrogate was not recoverable due to sample dilution or matrix interferences.	
3. Were sample COC forms complete?	Yes
Comments: The COC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.	
4. Were detection limits in accordance with the QAPP, permit, or method, or indicated as acceptable by the Tier I validator?	Yes
Comments: Detection limits were reviewed and appeared to be acceptable. Dilutions up to 20 times were applied to the samples in this data set. The final usability of the data with respect to dilutions will be determined by the project manager.	
5. Were the requested analytical methods in compliance with the QAPP, permit, or COC?	Yes
Comments: The requested analytical methods were in compliance with what was requested on the COC.	
6. Were samples received in good condition within method specified requirements?	Yes
Comments: Samples were received intact and in good condition. Cooler temperatures were below the 4°C +/- 2°C acceptable range at 1.6°C, as noted in the Sample Receipt Checklist. The cooler temperature below 2°C was judged as acceptable since the samples were not reported to be frozen upon receipt at the laboratory and the sample containers were reported to be intact.	
7. Were samples analyzed within method specified or technical holding times?	Yes
Comments: Samples were analyzed within the acceptable hold time.	
8. Were reported units appropriate for the associated sample matrix/matrices and method(s) of analyses?	Yes
Comments: Analyte concentrations were reported in units of mg/kg. The reported units are acceptable for the soil matrix. The results for the rinsate samples were reported in units of mg/L, which are appropriate for water samples.	
9. Do the laboratory reports include all constituents requested to be reported as indicated by the Tier I validator?	Yes
Comments: As indicated on the Tier I data validation, laboratory reported constituents were in accordance with those requested.	
10. Was there indication from the laboratory that the initial or continued calibration verification results were within acceptable limits?	N/A
Comments: Initial and continuing calibration data were not included as part of this data set; however, these data are assumed to be acceptable as the laboratory did not note that any calibration verification results were outside acceptable limits.	
11. Was the total number of method blank samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Method blanks were prepared on a greater than 5% basis.	

VALIDATION CRITERIA CHECKLIST	
12. Were method blank samples free of analyte contamination?	Yes
Comments: Method blank detections were not reported for this data set.	
13. Was the total number of matrix spike samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Matrix spike samples were prepared on a greater than 5% basis for the total number of samples. The MS/MSD sample pairs for DRO batch 19724 were prepared from sample CS-28.	
14. Were MS/MSD percent recoveries and MS/MSD RPD values within data validation or laboratory QC limits?	No
Comments: The MS and MSD recoveries for target analytes were within laboratory-specified limits with the following exceptions. Matrix spike samples were not prepared for motor oil analyses. However, the diesel range organics MS/MSD were used to evaluate the accuracy of the motor oil analyses. **The MSD for DRO in batch 197247 was outside the acceptable limits of 67.4% to 117% at 48.8%. Additionally the MS/MSD RPD value was above the upper limit of 17.4% at 17.6%. Due to matrix interference and possible poor repeatability, the associated samples were qualified as J for detections and UJ for non-detects for both DRO and MRO.**	
15. Was the total number of laboratory control samples analyzed equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Laboratory control samples were reported on a greater than 5% basis. Laboratory control samples were not prepared for motor oil analyses. However, the diesel range organics LCS/LCSD were used to evaluate the accuracy of the motor oil analyses.	
16. Were LCS/LCSD percent recoveries and LCS/LCSD RPD values within laboratory QC limits?	Yes
Comments: Laboratory control recoveries were within laboratory-specified limits.	
17. Were surrogate recoveries within laboratory control limits?	Yes
Comments: Surrogate recoveries were within laboratory control limits. The surrogates associated with samples CS-25, CS-26, BD-072309, and CS-27 were not recoverable due to sample dilution. This is acceptable per the method and required no further action.	
18. Was the number of equipment, trip, or field blanks collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	Yes
Comments: Field and trip blank samples were not submitted with this data set. The equipment blank samples Rinsate-1 and Rinsate-2 were submitted with the samples of this data set.	
19. Were the trip blank, field blank, and/or equipment blank samples free of analyte contamination?	Yes
Comments: There were not detections of the requested analytes in the Rinsate samples.	
20. Were the field duplicates collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	Yes
Comments: One field duplicate, BD-072309 was collected as a duplicate of sample CS-26 which is at least 10% the total number of samples.	
21. Were field duplicate RPD values within data validation QC limits (soil 0-50%, water 0-30%, or air 0-25%)?	Yes
Comments: Field duplicate RPD values were less than the upper RPD limit of 50% for soil samples as shown in the Field Duplicate Summary table at the end of this report.	
22. Were laboratory duplicate RPD values within laboratory-specified limits?	N/A
Comments: Laboratory duplicates were not prepared for this data set.	

DATA QUALIFICATION SUMMARY

Analyte	Field Sample ID	Lab Sample ID	Result (mg/kg)	Reviewer Qualifier	Reviewer Qualifier Reason
DRO	CS-25	0907447-01	6800	J	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	CS-25	0907447-01	ND (1000)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
DRO	CS-26	0907447-02	17000	J	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	CS-26	0907447-02	ND (1000)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
DRO	BD-072309	0907447-03	14000	J	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	BD-072309	0907447-03	ND (1000)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
DRO	CS-27	0907447-04	1800	J	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	CS-27	0907447-04	ND (500)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
DRO	CS-28	0907447-05	110	J	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.
MRO	CS-28	0907447-05	ND (50)	UJ	The MS and/or MSD recovery(ies) were below the acceptable limits indicating possible matrix interference.

FIELD DUPLICATE SUMMARY

Client Sample ID: CS-26 Field Duplicate Sample ID: BD-072309			
Analyte	**Laboratory Result (mg/kg)**	**Duplicate Result (mg/kg)**	**Relative Percent Difference (RPD)**
DRO	17000	14000	19.4%
Field duplicate RPD control limits should not exceed 30% for water, 50% for soil, or 25% for air or vapor as established by USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.			

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Monday, October 19, 2009

Gaurav Rajen
Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-0227
FAX (505) 722-0210

RE: Excavation Fan Out Area

Order No.: 0910112

Dear Gaurav Rajen:

Hall Environmental Analysis Laboratory, Inc. received 6 sample(s) on 10/7/2009 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc.

Date: *19-Oct-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area
Lab Order: 0910112

Lab ID: 0910112-01
Client Sample ID: CS-29
Collection Date: 10/1/2009 3:10:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/17/2009 1:00:39 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/17/2009 1:00:39 PM
Surr: DNOP	100	61.7-135		%REC	1	10/17/2009 1:00:39 PM

Lab ID: 0910112-02
Client Sample ID: CS-30
Collection Date: 10/1/2009 3:15:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/17/2009 1:35:43 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/17/2009 1:35:43 PM
Surr: DNOP	103	61.7-135		%REC	1	10/17/2009 1:35:43 PM

Lab ID: 0910112-03
Client Sample ID: CS-31
Collection Date: 10/1/2009 3:20:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	150	10		mg/Kg	1	10/17/2009 5:06:47 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/17/2009 5:06:47 PM
Surr: DNOP	78.7	61.7-135		%REC	1	10/17/2009 5:06:47 PM

Lab ID: 0910112-04
Client Sample ID: A-1
Collection Date: 10/2/2009 2:45:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/17/2009 2:11:03 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/17/2009 2:11:03 PM
Surr: DNOP	94.8	61.7-135		%REC	1	10/17/2009 2:11:03 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

1

Hall Environmental Analysis Laboratory, Inc.

Date: *19-Oct-09*

CLIENT: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area

Lab Order: 0910112

Lab ID: 0910112-05
Client Sample ID: A-2

Collection Date: 10/2/2009 2:50:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/17/2009 2:46:08 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/17/2009 2:46:08 PM
Surr: DNOP	89.6	61.7-135		%REC	1	10/17/2009 2:46:08 PM

Lab ID: 0910112-06
Client Sample ID: A-3

Collection Date: 10/2/2009 2:55:00 PM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/17/2009 3:21:13 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/17/2009 3:21:13 PM
Surr: DNOP	82.6	61.7-135		%REC	1	10/17/2009 3:21:13 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area

Work Order: 0910112

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics											
Sample ID: MB-20277		*MBLK*				Batch ID:	**20277**	Analysis Date:	10/17/2009 5:31:02 AM		
Diesel Range Organics (DRO)	ND	mg/Kg	10								
Motor Oil Range Organics (MRO)	ND	mg/Kg	50								
Sample ID: LCS-20277		*LCS*				Batch ID:	**20277**	Analysis Date:	10/17/2009 6:06:23 AM		
Diesel Range Organics (DRO)	47.11	mg/Kg	10	50	0	94.2	64.6	116			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area **Work Order:** 0910112

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics											
Sample ID: MB-20277		*MBLK*				Batch ID:	**20277**	Analysis Date:	10/17/2009 5:31:02 AM		
Diesel Range Organics (DRO)	ND	mg/Kg	10								
Motor Oil Range Organics (MRO)	ND	mg/Kg	50								
Sample ID: LCS-20277		*LCS*				Batch ID:	**20277**	Analysis Date:	10/17/2009 6:06:23 AM		
Diesel Range Organics (DRO)	47.11	mg/Kg	10	50	0	94.2	64.6	116			
Sample ID: LCSD-20277		*LCSD*				Batch ID:	**20277**	Analysis Date:	10/17/2009 6:41:48 AM		
Diesel Range Organics (DRO)	44.58	mg/Kg	10	50	0	89.2	64.6	116	5.52	17.4	

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name **WESTERN REFINING GALLU**

Date Received: **10/7/2009**

Work Order Number **0910112**

Received by: ARS

Sample ID labels checked by: TS
Initials

Checklist completed by: _____ 10/7/09
Signature Date

Matrix:

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☑	No ☐	N/A ☐	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		Number of preserved bottles checked for pH:
Water - VOA vials have zero headspace?	No VOA vials submitted ☑	Yes ☐	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	_____
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	*<2 >12 unless noted below.*
Container/Temp Blank temperature?	**5.9°**	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

Client: WESTERN - REFINING
GALLUP REFINERY
Mailing Address: RT 3 BOX 9
GALLUP NM 87301
Phone #: 5057223833
email or Fax#: 5057220210
QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)
☐ Other
☐ EDD (Type)

Turn-Around Time:
☐ Standard ☐ Rush

Project Name: EVACUATION FAN OUT AREA
Project #:
Project Manager: GAURAV, RAJEN
Sampler: LORETTA, BECK, ALVIN
On Ice: ☑ Yes ☐ No
Sample Temperature: 5.9

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0910112	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
10-01-09	1510	Soil	CS-29	8oz Jar 2	NONE	1			X													
10-01-09	1515	↓	CS-30	8oz Jar 2	NONE	2			X													
10-01-09	1520	↓	CS-31	8oz Jar 2	NONE	3			X													
10-02-09	1445		A-1	8oz Jar 2	NONE	4			X													
10-02-09	1450		A-2	8oz Jar 2	NONE	5			X													
10-02-09	1455		A-3	8oz Jar 2	NONE	6			X													

Date	Time	Relinquished by:	Received by:	Date	Time
10-06-09	12:00	[signature]	[signature]		
Date:	Time:	Relinquished by:	Received by:	Date	Time
			[signature]	9:15 10/7/09	

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Hall Environmental Analysis Laboratory, Inc.

18-Dec-09

Lab Order: 0910112
Client: Western Refining Southwest, Gallup
Project: Excavation Fan Out Area

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Instrument Run ID	QC Batch ID	Prep Date	Analysis Date
0910112-01A	CS-29	10/1/2009 3:10:00 PM	Soil	EPA Method 8015B: Diesel Range Organics	FID(17A)_091017A	20277	10/9/2009	10/17/2009
0910112-02A	CS-30	10/1/2009 3:15:00 PM		EPA Method 8015B: Diesel Range Organics	FID(17A)_091017A	20277	10/9/2009	10/17/2009
0910112-03A	CS-31	10/1/2009 3:20:00 PM		EPA Method 8015B: Diesel Range Organics	FID(17A)_091017A	20277	10/9/2009	10/17/2009
0910112-04A	A-1	10/2/2009 2:45:00 PM		EPA Method 8015B: Diesel Range Organics	FID(17A)_091017A	20277	10/9/2009	10/17/2009
0910112-05A	A-2	10/2/2009 2:50:00 PM		EPA Method 8015B: Diesel Range Organics	FID(17A)_091017A	20277	10/9/2009	10/17/2009
0910112-06A	A-3	10/2/2009 2:55:00 PM		EPA Method 8015B: Diesel Range Organics	FID(17A)_091017A	20277	10/9/2009	10/17/2009

Tier II Data Validation Report Summary

Client: Western Refining Company, Gallup	Laboratory: Hall Environmental Analysis Laboratory, Inc.
Project Name: October 2009 Sampling Event	Sample Matrix: Soil
Project Number: 697-017-002	Sample Start Date: October 1, 2009
Date Validated: December 18, 2009	Sample End Date: October 2, 2009
Parameters Included: Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by Environmental Protection Agency (EPA) Method 8015B	
Laboratory Project IDs: 0910112	
Data Validator: Nella Dagnillo, Chemical Engineer, E.I.T.	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services group on the analytical data report package generated by Hall Environmental Analysis Laboratory, Inc. evaluating samples from the Western Refining Company site located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values of samples from laboratory duplicate pairs. Laboratory accuracy was established by reviewing the demonstrated percent recoveries of laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) to verify that none of the data were biased. Method compliance was established by reviewing holding times, detection limits, surrogate recoveries, method blanks, and the LCS and LCSD percent recoveries against method specific requirements. Completeness was evaluated by determining the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody, laboratory analytical methods, and any other necessary documents associated with this analytical data set.

Data were evaluated in general accordance with validation criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-08-01, June 2008 with additional reference to USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999. Review of duplicates is conducted in accordance with USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.

SAMPLE NUMBERS TABLE

Client Sample ID	Laboratory Sample Number
CS-29	0910112-01
CS-30	0910112-02
CS-31	0910112-03
A-1	0910112-04
A-2	0910112-05
A-3	0910112-06

Tier II Data Validation Report

The samples were analyzed for client-specified analytes. Chain-of-custody (COC) completeness is included in Section #3. The laboratory data were reviewed to evaluate compliance with the required methods and the quality of the reported data. A leading check mark (✓) indicates that the referenced data were deemed acceptable. A preceding crossed circle (⊗) signifies problems with the referenced data that may have warranted attaching qualifiers to the data.

- ✓ Data Completeness
- ✓ COC Documentation
- ✓ Holding Times and Preservation
- ✓ Laboratory Blanks
- ✓ System Monitoring Compounds (i.e. Surrogates)
- ✓ Laboratory Control Samples/Laboratory Control Sample Duplicates (LCS/LCSD)

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Section #2.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data which are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R, the data may be used for site evaluation, with the reasons for qualification being given consideration when interpreting sample concentrations. Data points which are assigned an R qualifier should not be used for any site evaluation purposes. Data were not qualified during this validation.

Data Completeness

The analyses appeared to be performed as requested on the chain-of-custody records. The associated samples were received by the laboratory and appeared to be analyzed properly. No data points were rejected. The data completeness measure for this data package is 100% and is acceptable.

VALIDATION CRITERIA CHECKLIST	
1. Was the report free of any non-conformances related to the analytical data identified by the laboratory? Comments: The laboratory did not identify any non-conformances related to this data set.	Yes
2. Were data qualification flags or any other notes used by the laboratory? If yes, define. Comments: The laboratory did not use data qualification flag with this data set.	No
3. Were sample COC forms complete? Comments: The COC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.	Yes
4. Were detection limits in accordance with the QAPP, permit, or method, or indicated as acceptable by the Tier I validator? Comments: Detection limits were reviewed and appeared to be acceptable. Dilutions were not required for the samples and analyses in this data set.	Yes
5. Were the requested analytical methods in compliance with the QAPP, permit, or COC? Comments: The requested analytical methods were in compliance with what was requested on the COC.	Yes
6. Were samples received in good condition within method specified requirements? Comments: Samples were received intact and in good condition. Cooler temperatures were within the 4°C +/- 2°C acceptable range at 5.9°C, as noted in the Sample Receipt Checklist.	Yes
7. Were samples analyzed within method specified or technical holding times? Comments: Samples were analyzed within the acceptable hold time.	Yes
8. Were reported units appropriate for the associated sample matrix/matrices and method(s) of analyses? Comments: Analyte concentrations were reported in units of mg/kg. The reported units are acceptable for the soil matrix.	Yes
9. Do the laboratory reports include all constituents requested to be reported as indicated by the Tier I validator? Comments: As indicated on the Tier I data validation, laboratory reported constituents were in accordance with those requested.	Yes
10. Was there indication from the laboratory that the initial or continued calibration verification results were within acceptable limits? Comments: Initial and continuing calibration data were not included as part of this data set; however, these data are assumed to be acceptable as the laboratory did not note that any calibration verification results were outside acceptable limits.	N/A
11. Was the total number of method blank samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method? Comments: Method blanks were prepared on a greater than 5% basis.	Yes
12. Were method blank samples free of analyte contamination? Comments: Method blank detections were not reported for this data set.	Yes
13. Was the total number of matrix spike samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method? Comments: Matrix spike samples were not prepared for this data set.	No

VALIDATION CRITERIA CHECKLIST	
14. Were MS/MSD percent recoveries and MS/MSD RPD values within data validation or laboratory QC limits? Comments: Matrix spike samples were not prepared for this data set.	N/A
15. Was the total number of laboratory control samples analyzed equal to at least 5% of the total number of samples, or analyzed as required by the method? Comments: Laboratory control samples were reported on a greater than 5% basis. Laboratory control samples were not prepared for motor oil analyses. However, the diesel range organics LCS/LCSD were used to evaluate the accuracy of the motor oil analyses.	Yes
16. Were LCS/LCSD percent recoveries and LCS/LCSD RPD values within laboratory QC limits? Comments: Laboratory control recoveries were within laboratory-specified limits.	Yes
17. Were surrogate recoveries within laboratory control limits? Comments: Surrogate recoveries were within laboratory control limits.	Yes
18. Was the number of equipment, trip, or field blanks collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator? Comments: Blank samples were not submitted with this data set.	No
19. Were the trip blank, field blank, and/or equipment blank samples free of analyte contamination? Comments: Blank samples were not submitted with this data set.	N/A
20. Were the field duplicates collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator? Comments: Duplicate samples were not submitted with this data set.	No
21. Were field duplicate RPD values within data validation QC limits (soil 0-50%, water 0-30%, or air 0-25%)? Comments: Duplicate samples were not submitted with this data set.	N/A
22. Were laboratory duplicate RPD values within laboratory-specified limits? Comments: Laboratory duplicates were not prepared for this data set.	N/A

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Monday, August 30, 2010

Ed Riege
Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-3833
FAX (505) 722-0210

RE: Far-out Area

Order No.: 1008A31

Dear Ed Riege:

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 8/25/2010 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology.

Please do not hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Laboratory Manager

NM Lab # NM9425 NM0901
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc.

Date: *30-Aug-10*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	CS-35
Lab Order:	1008A31	**Collection Date:**	8/25/2010 10:30:00 AM
Project:	Far-out Area	**Date Received:**	8/25/2010
Lab ID:	1008A31-01	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **JB**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/28/2010 11:24:24 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/28/2010 11:24:24 PM
Surr: DNOP	105	61.7-135		%REC	1	8/28/2010 11:24:24 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: Far-out Area **Work Order:** 1008A31

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics											
Sample ID: MB-23548		*MBLK*				Batch ID:	**23548**	Analysis Date:		8/28/2010 2:18:51 PM	
Diesel Range Organics (DRO)	ND	mg/Kg	10								
Motor Oil Range Organics (MRO)	ND	mg/Kg	50								
Sample ID: LCS-23548		*LCS*				Batch ID:	**23548**	Analysis Date:		8/28/2010 2:52:59 PM	
Diesel Range Organics (DRO)	42.58	mg/Kg	10	50	0	85.2	64.6	116			
Sample ID: LCSD-23548		*LCSD*				Batch ID:	**23548**	Analysis Date:		8/28/2010 3:27:06 PM	
Diesel Range Organics (DRO)	44.33	mg/Kg	10	50	0	88.7	64.6	116	4.04	17.4	

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	NC	Non-Chlorinated
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name WESTERN REFINING GALLU

Date Received: 8/25/2010

Work Order Number 1008A31

Received by: AMG

Checklist completed by: _____ Signature 8/25/10 Date

Sample ID labels checked by: _____ Initials

Matrix:

Carrier name: Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		Number of preserved bottles checked for pH:
Water - VOA vials have zero headspace?	No VOA vials submitted ☑	Yes ☐	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	*<2 >12 unless noted below.*
Container/Temp Blank temperature?	**7.3°**	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

Client: Western Refining

Mailing Address: Route 3 Box 7
Gallup, NM 87301

Phone #: (505) 722-3833

email or Fax#: (505) 722-0210

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☒ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☑ Rush 3 day

Project Name: Fan-out Area

Project #: 697-039-001

Project Manager: Ed Riege

Sampler: G. Price / A. Dorsey

On Ice: ☒ Yes ☐ No

Sample Temperature: 7.3

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
9/25/10	10:30	Soil	CS-35	1-9 oz	ice	1008A31			X													

Date	Time	Relinquished by:	Received by:	Date	Time
9/25/10	4:18	[signature]	Ashley M Gallegos	9/25/10	16:18
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Wednesday, August 25, 2010

Ed Riege
Western Refining Southwest, Gallup
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-0227
FAX (505) 722-0210

RE: Fan-Out Area

Order No.: 1008920

Dear Ed Riege:

Hall Environmental Analysis Laboratory, Inc. received 13 sample(s) on 8/24/2010 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites.

Reporting limits are determined by EPA methodology.

Please do not hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Laboratory Manager

NM Lab # NM9425 NM0901
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc. **Date:** *25-Aug-10*

CLIENT: Western Refining Southwest, Gallup
Project: Fan-Out Area
Lab Order: 1008920

CASE NARRATIVE

Analytical Comments for METHOD 8015DRO_S, SAMPLE 1008920-08A: DNOP not recovered due to dilution

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-10*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	CS-36
Lab Order:	1008920	**Collection Date:**	8/23/2010 10:00:00 AM
Project:	Fan-Out Area	**Date Received:**	8/24/2010
Lab ID:	1008920-01	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **JB**
Diesel Range Organics (DRO)	21	10		mg/Kg	1	8/24/2010 8:23:27 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/24/2010 8:23:27 PM
Surr: DNOP	104	61.7-135		%REC	1	8/24/2010 8:23:27 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-10*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	CS-38
Lab Order:	1008920	**Collection Date:**	8/23/2010 10:25:00 AM
Project:	Fan-Out Area	**Date Received:**	8/24/2010
Lab ID:	1008920-02	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/24/2010 8:57:17 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/24/2010 8:57:17 PM
Surr: DNOP	103	61.7-135		%REC	1	8/24/2010 8:57:17 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-10*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	BD1
Lab Order:	1008920	**Collection Date:**	8/23/2010
Project:	Fan-Out Area	**Date Received:**	8/24/2010
Lab ID:	1008920-03	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **JB**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/24/2010 9:31:09 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/24/2010 9:31:09 PM
Surr: DNOP	105	61.7-135		%REC	1	8/24/2010 9:31:09 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-10*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	CS-39
Lab Order:	1008920	**Collection Date:**	8/23/2010 10:40:00 AM
Project:	Fan-Out Area	**Date Received:**	8/24/2010
Lab ID:	1008920-04	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **JB**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/24/2010 10:05:00 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/24/2010 10:05:00 PM
Surr: DNOP	105	61.7-135		%REC	1	8/24/2010 10:05:00 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-10*

CLIENT: Western Refining Southwest, Gallup
Lab Order: 1008920
Project: Fan-Out Area
Lab ID: 1008920-05

Client Sample ID: CS-39 MS/MSD
Collection Date: 8/23/2010 10:40:00 AM
Date Received: 8/24/2010
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
						Analyst: JB
EPA METHOD 8015B: DIESEL RANGE ORGANICS						
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/24/2010 10:38:52 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/24/2010 10:38:52 PM
Surr: DNOP	105	61.7-135		%REC	1	8/24/2010 10:38:52 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-10*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	CS-40
Lab Order:	1008920	**Collection Date:**	8/23/2010 10:50:00 AM
Project:	Fan-Out Area	**Date Received:**	8/24/2010
Lab ID:	1008920-06	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **JB**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/25/2010 12:54:16 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/25/2010 12:54:16 AM
Surr: DNOP	106	61.7-135		%REC	1	8/25/2010 12:54:16 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-10*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	CS-42
Lab Order:	1008920	**Collection Date:**	8/23/2010 11:00:00 AM
Project:	Fan-Out Area	**Date Received:**	8/24/2010
Lab ID:	1008920-07	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **JB**
Diesel Range Organics (DRO)	21	10		mg/Kg	1	8/25/2010 1:28:06 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/25/2010 1:28:06 AM
Surr: DNOP	108	61.7-135		%REC	1	8/25/2010 1:28:06 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-10*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	CS-41
Lab Order:	1008920	**Collection Date:**	8/23/2010 11:10:00 AM
Project:	Fan-Out Area	**Date Received:**	8/24/2010
Lab ID:	1008920-08	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	210	100		mg/Kg	10	8/25/2010 4:50:07 AM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	8/25/2010 4:50:07 AM
Surr: DNOP	0	61.7-135	S	%REC	10	8/25/2010 4:50:07 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-10*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	CS-37
Lab Order:	1008920	**Collection Date:**	8/23/2010 12:10:00 PM
Project:	Fan-Out Area	**Date Received:**	8/24/2010
Lab ID:	1008920-09	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	36	10		mg/Kg	1	8/25/2010 6:19:32 AM
Motor Oil Range Organics (MRO)	59	50		mg/Kg	1	8/25/2010 6:19:32 AM
Surr: DNOP	106	61.7-135		%REC	1	8/25/2010 6:19:32 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-10*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	CS-33
Lab Order:	1008920	**Collection Date:**	8/23/2010 11:40:00 AM
Project:	Fan-Out Area	**Date Received:**	8/24/2010
Lab ID:	1008920-10	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	58	10		mg/Kg	1	8/25/2010 2:35:46 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/25/2010 2:35:46 AM
Surr: DNOP	106	61.7-135		%REC	1	8/25/2010 2:35:46 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-10*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	BD2
Lab Order:	1008920	**Collection Date:**	8/23/2010
Project:	Fan-Out Area	**Date Received:**	8/24/2010
Lab ID:	1008920-11	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	76	10		mg/Kg	1	8/25/2010 3:09:22 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/25/2010 3:09:22 AM
Surr: DNOP	104	61.7-135		%REC	1	8/25/2010 3:09:22 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-10*

CLIENT:	Western Refining Southwest, Gallup	**Client Sample ID:**	CS-32
Lab Order:	1008920	**Collection Date:**	8/23/2010 11:50:00 AM
Project:	Fan-Out Area	**Date Received:**	8/24/2010
Lab ID:	1008920-12	**Matrix:**	SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **JB**
Diesel Range Organics (DRO)	55	10		mg/Kg	1	8/25/2010 3:42:56 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/25/2010 3:42:56 AM
Surr: DNOP	109	61.7-135		%REC	1	8/25/2010 3:42:56 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Aug-10*

CLIENT: Western Refining Southwest, Gallup
Lab Order: 1008920
Project: Fan-Out Area
Lab ID: 1008920-13

Client Sample ID: CS-34
Collection Date: 8/23/2010 12:00:00 PM
Date Received: 8/24/2010
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
						Analyst: JB
EPA METHOD 8015B: DIESEL RANGE ORGANICS						
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/25/2010 4:16:32 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/25/2010 4:16:32 AM
Surr: DNOP	107	61.7-135		%REC	1	8/25/2010 4:16:32 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- NC Non-Chlorinated
- PQL Practical Quantitation Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Western Refining Southwest, Gallup
Project: Fan-Out Area

Work Order: 1008920

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range Organics											
Sample ID: 1008920-05AMSD		*MSD*				Batch ID:	**23513**	Analysis Date:		8/24/2010 11:46:33 PM	
Diesel Range Organics (DRO)	49.96	mg/Kg	10	50	9.529	80.9	67.4	117	1.64	17.4	
Sample ID: MB-23513		*MBLK*				Batch ID:	**23513**	Analysis Date:		8/24/2010 6:41:38 PM	
Diesel Range Organics (DRO)	ND	mg/Kg	10								
Motor Oil Range Organics (MRO)	ND	mg/Kg	50								
Sample ID: LCS-23513		*LCS*				Batch ID:	**23513**	Analysis Date:		8/24/2010 7:15:44 PM	
Diesel Range Organics (DRO)	43.25	mg/Kg	10	50	0	86.5	64.6	116			
Sample ID: LCSD-23513		*LCSD*				Batch ID:	**23513**	Analysis Date:		8/24/2010 7:49:35 PM	
Diesel Range Organics (DRO)	42.58	mg/Kg	10	50	0	85.2	64.6	116	1.56	17.4	
Sample ID: 1008920-05AMS		*MS*				Batch ID:	**23513**	Analysis Date:		8/24/2010 11:12:43 PM	
Diesel Range Organics (DRO)	50.79	mg/Kg	10	50	9.529	82.5	67.4	117			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	NC	Non-Chlorinated
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name WESTERN REFINING GALLU

Date Received: 8/24/2010

Work Order Number 1008920

Received by: AMF

Sample ID labels checked by: _____ Initials

Checklist completed by: _____ Signature 8/24/10 Date

Matrix: Carrier name Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☑	No ☐	N/A ☐	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		Number of preserved bottles checked for pH:
Water - VOA vials have zero headspace?	No VOA vials submitted ☑	Yes ☐	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	_____
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	*<2 >12 unless noted below.*
Container/Temp Blank temperature?	**5.3°**	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

Client: Western Refining

Mailing Address: Route 3 Box 7
Gallup, NM 87301

Phone #: (505) 722-3833

email or Fax#: (505) 722-0210

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☐ Standard ☑ Rush 24 hour

Project Name: Fan-Out Area

Project #: 697-039-001

Project Manager: Ed Riege

Sampler: G. Price, A. Dorsey

On Ice: ☒ Yes ☐ No

Sample Temperature: 5.3

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1008920	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
8/23	10:00	Soil	CS-36	1-9 oz	ice	1			X													
8/23	10:25	Soil	CS-38	1-9 oz	ice	2			X													
8/23		Soil	BD1	1-9 oz	ice	3			X													
8/23	10:40	Soil	CS-39	1-9 oz	ice	4			X													
8/23	10:40	Soil	CS-39 MS/MSD	1-9 oz	ice	5			X													
8/23	10:50	Soil	CS-40	1-9 oz	ice	6			X													
8/23	11:00	Soil	CS-42	1-9 oz	ice	7			X													
8/23	11:10	Soil	CS-41	1-9 oz	ice	8			X													
8/23	~~11:25~~	Soil	CS-37 12:10	1-9 oz	ice	9			X													
8/23	11:40	Soil	CS-33	1-9 oz	ice	10			X													
8/23		Soil	BD2	1-9 oz	ice	11			X													
8/23	11:50	Soil	CS-32	1-9 oz	ice	12			X													

Date:	Time:	Relinquished by:	Received by:	Date	Time
8/23/10	6:00	Grant Price	[signature]	8/23/10	6:01
Date:	Time:	Relinquished by:	Received by:	Date	Time
			[signature]	8/24/10	8:30

Remarks: Please call Grant Price @ 307-399-0890 as soon as preliminary results are ready.

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Chain-of-Custody Record

Client: Western Refining

Mailing Address: Route 3 Box 7
Gallup, NM 87301

Phone #: (505) 722-3833

email or Fax#: (505) 722-0210

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☐ Standard ☑ Rush 24 hour

Project Name: Far-out Area

Project #: 697-039-001

Project Manager: Ed Riege

Sampler: G Price, A. Dorsey

On Ice: ☑ Yes ☐ No

Sample Temperature: 5.3

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1008920	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)				Air Bubbles (Y or N)
		Soil	~~CS-35~~	1-902	ice				X												
8/23	12:00	Soil	CS-34	1-902	ice	13			X												
			End of Record.																		

Date:	Time:	Relinquished by:	Received by:	Date	Time
8/23/10	6:00	Grant Price	[signature]	8/23/10	6:01
Date:	Time:	Relinquished by:	Received by:	Date	Time
			[signature]	8/24/10	8:30

Remarks: Please call Grant Price @ 307-399-0890 as soon as preliminary results are ready.

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Tier II Data Validation Report Summary

Client: Western Refining Company, Gallup	Laboratory: Hall Environmental Analysis Laboratory, Inc.
Project Name: Gallup-2010 Environmental Compliance	Sample Matrix: Soil
Project Number: 697-039-001	Sample Start Date: August 23, 2010
Date Validated: September 8, 2010	Sample End Date: August 25, 2010
Parameters Included: Diesel Range Organics (DRO) and Motor Oil Range Organics (MRO) by Environmental Protection Agency (EPA) Method 8015B	
Laboratory Project IDs: 1008920 and 1008A31	
Data Validator: Aubrey L. Farris, E.I.T., Civil Engineer	

DATA EVALUATION CRITERIA SUMMARY

A Tier II Data Validation was performed by Trihydro Corporation's Chemical Data Evaluation Services group on the analytical data report package generated by Hall Environmental Analysis Laboratory, Inc. evaluating samples from the Western Refining Company site located in Gallup, New Mexico.

Precision, accuracy, method compliance, and completeness of this data package were assessed during this data review. Precision was determined by evaluating the calculated relative percent difference (RPD) values of samples from field duplicate pairs and laboratory duplicate pairs. Laboratory accuracy was established by reviewing the demonstrated percent recoveries of matrix spike (MS) and matrix spike duplicate (MSD) samples, and of laboratory control samples (LCS) and laboratory control sample duplicates (LCSD) to verify that none of the data were biased. Method compliance was established by reviewing holding times, detection limits, surrogate recoveries, method blanks, and the LCS and LCSD percent recoveries against method specific requirements. Completeness was evaluated by determining the overall ratio of the number of samples planned versus the number of samples with valid analyses. Determination of completeness included a review of the chain-of-custody, laboratory analytical methods, and any other necessary documents associated with this analytical data set.

Data were evaluated in general accordance with validation criteria set forth in the USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Superfund Organic Methods Data Review, document number USEPA-540-R-08-01, June 2008 with additional reference to USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Organic Data Review, document number EPA 540/R-99-008 of October 1999. Review of duplicates is conducted in accordance with USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.

Tier II Data Validation Report Summary

SAMPLE NUMBERS TABLES

Data Set 1008920

Client Sample ID	Laboratory Sample Number
CS-36	1008920-01
CS-38	1008920-02
BD1	1008920-03
CS-39	1008920-04
CS-39 MS/MSD	1008920-05
CS-40	1008920-06
CS-42	1008920-07
CS-41	1008920-08
CS-37	1008920-09
CS-33	1008920-10
BD2	1008920-11
CS-32	1008920-12
CS-34	1008920-13

Data Set 1008A31

Client Sample ID	Laboratory Sample Number
CS-35	1008A31-01

Tier II Data Validation Report

The samples were analyzed for client-specified analytes. Chain-of-custody (CoC) completeness is included in Section #3. The laboratory data were reviewed to evaluate compliance with the required methods and the quality of the reported data. A leading check mark (✓) indicates that the referenced data were deemed acceptable. A preceding crossed circle (⊗) signifies problems with the referenced data that may have warranted attaching qualifiers to the data.

- ✓ Data Completeness
- ✓ CoC Documentation
- ✓ Holding Times and Preservation
- ✓ Laboratory Blanks
- ✓ System Monitoring Compounds (i.e. Surrogates)
- ✓ Laboratory Control Samples/Laboratory Control Sample Duplicates (LCS/LCSD)
- ✓ Matrix Spike/Matrix Spike Duplicates (MS/MSD)
- ✓ Field Duplicates

OVERALL DATA PACKAGE ASSESSMENT

Based on a data validation review, the data are acceptable as delivered. Data qualified by the laboratory are discussed in Section #2.

The purpose of validating data and assigning qualifiers is to assist in proper data interpretation. Data which are not qualified meet the site data quality objectives. If values are assigned qualifiers other than an R, the data may be used for site evaluation, with the reasons for qualification being given consideration when interpreting sample concentrations. Data points which are assigned an R qualifier should not be used for any site evaluation purposes. Data were not qualified during this validation.

Data Completeness

The analyses appeared to be performed as requested on the chain-of-custody records. The associated samples were received by the laboratory and appeared to be analyzed properly. No data points were rejected. The data completeness measure for this data package is 100% and is acceptable.

VALIDATION CRITERIA CHECKLIST	
1. Was the report free of any non-conformances related to the analytical data identified by the laboratory?	No
Comments: The laboratory identified the following non-conformances related to data set 1008920. Analytical Comments for Method 8015DRO_S, Sample 1008920-08A: DNOP not recovered due to dilution.	
2. Were data qualification flags or any other notes used by the laboratory? If yes, define.	No
Comments: The laboratory did not use data qualification flag with this data set.	
3. Were sample CoC forms complete?	Yes
Comments: The CoC records from field to laboratory were complete, and custody was maintained as evidenced by field and laboratory personnel signatures, dates, and times of receipt.	
4. Were detection limits in accordance with the QAPP, permit, or method, or indicated as acceptable by the Tier I validator?	Yes
Comments: Detection limits were reviewed and appeared to be acceptable. Dilutions were not required for the samples and analyses in this data set with the following exception. Dilutions of 10 times were applied to sample CS-41 by Method 8015B in data set 1008920. The final usability of the data with respect to detection limits and dilutions will be determined by the project staff.	
5. Were the requested analytical methods in compliance with the QAPP, permit, or CoC?	Yes
Comments: The requested analytical methods were in compliance with what was requested on the CoC.	
6. Were samples received in good condition within method specified requirements?	Yes
Comments: Samples were received intact and in good condition. Cooler temperatures were within and outside the 4°C +/- 2°C acceptable range at 5.3°C (data set 1008920) and 7.3°C (data set 1008A31), as noted in the Sample Receipt Checklist. The cooler temperature that was above 6°C was judged as acceptable since the samples were delivered to the lab directly after collection and had not had sufficient time to cool.	
7. Were samples analyzed within method specified or technical holding times?	Yes
Comments: Samples were analyzed within the acceptable hold time.	
8. Were reported units appropriate for the associated sample matrix/matrices and method(s) of analyses?	Yes
Comments: Analyte concentrations were reported in units of mg/kg. The reported units are acceptable for the soil matrix.	
9. Do the laboratory reports include all constituents requested to be reported as indicated by the Tier I validator?	Yes
Comments: The laboratory reported constituents were in accordance with those requested.	
10. Was there indication from the laboratory that the initial or continued calibration verification results were within acceptable limits?	N/A
Comments: Initial and continuing calibration data were not included as part of this data set; however, these data are assumed to be acceptable as the laboratory did not note that any calibration verification results were outside acceptable limits.	
11. Was the total number of method blank samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Method blanks were prepared on a greater than 5% basis.	
12. Were method blank samples free of analyte contamination?	Yes
Comments: Method blank detections were not reported for this data set.	

VALIDATION CRITERIA CHECKLIST	
13. Was the total number of matrix spike samples prepared equal to at least 5% of the total number of samples, or analyzed as required by the method?	No
Comments: The matrix spike samples for batch 23513 were prepared from sample CS-39 of data set 1008920. Matrix spike samples were not prepared for batch 23548 of data set 1008A31. The laboratory control sample results were used to evaluate the accuracy and precision of this data.	
14. Were MS/MSD percent recoveries and MS/MSD RPD values within data validation or laboratory QC limits?	Yes
Comments: The MS and MSD recoveries and RPD values were within laboratory-specified limits.	
15. Was the total number of laboratory control samples analyzed equal to at least 5% of the total number of samples, or analyzed as required by the method?	Yes
Comments: Laboratory control samples were reported on a greater than 5% basis. Laboratory control samples were not prepared for motor oil analyses. However, the diesel range organics LCS/LCSD were used to evaluate the accuracy of the motor oil analyses.	
16. Were LCS/LCSD percent recoveries and LCS/LCSD RPD values within laboratory QC limits?	Yes
Comments: Laboratory control recoveries were within laboratory-specified limits.	
17. Were surrogate recoveries within laboratory control limits?	Yes
Comments: Surrogate recoveries were within laboratory control limits.	
18. Was the number of equipment, trip, or field blanks collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	No
Comments: Blank samples were not submitted with this data set.	
19. Were the trip blank, field blank, and/or equipment blank samples free of analyte contamination?	N/A
Comments: Blank samples were not submitted with this data set.	
20. Were the field duplicates collected equal to at least 10% of the total number of samples, or as required by the project guidelines, QAPP, SAP, or permit, or as indicated by the Tier I validator?	Yes
Comments: Two field duplicates, BD1 was collected as a duplicate of sample CS-38 and BD2 was collected as a duplicated of CS-33.	
21. Were field duplicate RPD values within data validation QC limits (soil 0-50%, water 0-30%, or air 0-25%)?	Yes
Comments: Field duplicate RPD values were less than the upper RPD limit of 50% for soil samples. Field duplicate RPD values are presented in the Field Duplicate Summary Table at the end of this report. The results for CS-38 and BD1 were undetected; therefore, not RPD could be calculated.	
22. Were laboratory duplicate RPD values within laboratory-specified limits?	N/A
Comments: Laboratory duplicates were not prepared for this data set.	

FIELD DUPLICATE SUMMARY

Client Sample ID: CS-33 Field Duplicate Sample ID: BD2			
Analyte	Laboratory Result (mg/Kg)	Duplicate Result (mg/Kg)	Relative Percent Difference (RPD)
Diesel Range Organics (DRO)	58	76	26.9%
Field duplicate RPD control limits should not exceed 30% for water, 50% for soil, or 25% for air or vapor as established by USEPA Region 1 Laboratory Data Validation Function Guidelines for Evaluation of Organic Analysis, December 1996.			

APPENDIX E

NMED NOTICE OF DISAPPROVAL
MAY 2008 RAILROAD RACK LAGOON FAN-OUT AREA EXCAVATION WORK PLAN

NEW MEXICO ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

BILL RICHARDSON
Governor

DIANE DENISH
Lieutenant Governor

2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Phone (505) 476-6000 Fax (505) 476-6030
www.nmenv.state.nm.us

RON CURRY
Secretary

JON GOLDSTEIN
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

July 22, 2008

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

RE: NOTICE OF DISAPPROVAL
RAILROAD RACK LAGOON FAN-OUT AREA
EXCAVATION WORK PLAN
WESTERN REFINING SOUTHWEST, INC. GALLUP REFINERY
EPA ID #: NMD000333211
HWB-GRCC-07-002

Dear Mr. Riege:

The New Mexico Environment Department (NMED) has reviewed Western Refining Southwest, Inc. Gallup Refinery's (the Permittee) *Railroad Rack Lagoon Fan-out Area Excavation Work Plan* (Excavation Plan), dated May 2, 2008 and hereby issues this Notice of Disapproval (NOD). NMED has the following comments.

Comment 1

In the third paragraph of the Permittee's cover letter dated May 12, 2008, the Permittee states "[f]or example, in areas in which the sampled materials had no detectable levels of contaminants at 3 feet, we plan to excavate to depths of 5 feet. Similarly in the few areas at which there is contamination at greater depths, we plan to excavate to far greater depths than which we found no detectable levels of contaminants. Similarly, you will notice that at point L1 we found no detectable levels of contamination; yet, on a conservative basis, we plan to excavate an areal extent far more extensive than the clean point L1 would indicate."

Location L-1 was not found in Figure 1. The Permittee must revise the Excavation Plan to cite the correct reference or submit a revised Figure 1 to identify the location of point L1.

Comment 2

In the "Completed Field Work" Section of the Excavation Plan, the Permittee references test pit location B-9; however, this location is not found in Figure 1. The Permittee must provide an additional figure to the Excavation Plan that identifies all the original soil boring locations as identified in Attachment 1 of NMED's September 19, 2006 *Approval with Modifications Work Plan for Investigation of the Overflow Ditch and Fan-Out of Area Railroad Rack Lagoon, SWMU #8.*

Comment 3

The Permittee states in the Excavation Plan on page one, paragraph 3, that soil sampled at location B-9 was below the diesel range organics (DRO) clean-up standard of 890 mg/kg. This conflicts with information provided in the October 2, 2007 letter from Trihydro to Jim Lieb which states that the center sample of the excavation at B-9 at three feet (ft) below ground surface (bgs) exceeded the DRO clean-up standard of 890 mg/kg. A hand auger was then used to collect an additional center sample at B-9 at five ft and detected DRO concentrations were below 890 mg/kg.

It is not clear if the contaminated soil detected at B-9 from the three foot to five foot interval has been removed. The Permittee must revise the Excavation Plan to clarify this discrepancy and explain if the contaminated soil at B-9 at the three ft to five ft depth interval has been removed. If the contamination at B-9 has not been removed, the Excavation Plan must address removal of the contaminated soil.

Comment 4

From review of the Excavation Plan and Figure 1, the Permittee has not delineated the contamination in the vicinity of location B-8 to the southwest, approximately six feet directly west of borehole M, in the outflow ditch between sample locations B-8 and B-9. Because soil at locations B-8 and possibly B-9 contain DRO concentrations above 890 mg/kg, it is likely that similar contamination is present in soils in the overflow ditch between B-8 and B-9.

The Permittee must revise the Excavation Plan to propose additional sampling and analyses of soils located between B-8 and B-9. A figure must be provided depicting the proposed sampling locations. This location will also satisfy the need for step-out sampling directly west of borehole M. Depending on the sample analytical results, additional excavation may be needed in the vicinity of between B-8 and B-9.

Comment 5

The Excavation Plan does not address confirmation of the complete removal of soils containing DRO concentrations greater than the applicable screening level. The Permittee must revise the Excavation Plan to discuss confirmation sampling and include a figure depicting the proposed frequency of collection of confirmation samples. The Permittee must also list what chemical analyses will be performed on the confirmation samples.

Comment 6

On page three and four of the Excavation Plan, the Permittee states that the excavated soil will be disposed of in Gallup's Northeast Oil Conservation Division (OCD) Land Farm. The Permittee must obtain permission from OCD prior to disposing the soil in the Landfarm. Both NMED and OCD must be informed of the final soil disposal location. The Permittee must revise the Excavation Plan to state that the Permittee will obtain approval from OCD prior to disposing of the excavated soil in the OCD Landfarm.

Comment 7

As a general comment, NMED recommends the Permittee wait until the results of confirmation sample analyses indicate the DRO contamination is below 890 mg/kg before backfilling the remedial excavation.

The Permittee must address all comments contained in this NOD and submit a revised Excavation Plan. The revised Excavation Plan must be accompanied with a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments. The Permittee must also submit an electronic copy of the Revised Excavation Plan with all edits and modifications shown in redline-strikeout format. The revised Excavation Plan is due to NMED on or before September 22, 2008.

If you have any questions regarding this letter please contact Hope Monzeglio of my staff at (505) 476-6045.

Sincerely,

James P. Bearzi
Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
H. Monzeglio, NMED HWB
W. Price, OCD
G. Ragen, GRCC
File: GRCC 2008 and Reading
HWB-GRCC-07-002

APPENDIX F

NMED APPROVAL WITH DIRECTION

SEPTEMBER 2008 RAILROAD RACK LAGOON FAN-OUT AREA EXCAVATION WORK PLAN

NEW MEXICO ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

BILL RICHARDSON
Governor

DIANE DENISH
Lieutenant Governor

2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Phone (505) 476-6000 Fax (505) 476-6030
www.nmenv.state.nm.us

RON CURRY
Secretary

JON GOLDSTEIN
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

December 11, 2008

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

RE: APPROVAL WITH DIRECTION
RAILROAD RACK LAGOON FAN-OUT AREA EXCAVATION WORK PLAN
WESTERN REFINING SOUTHWEST, INC. GALLUP REFINERY
EPA ID #: NMD000333211
HWB-GRCC-07-002

Dear Mr. Riege:

The New Mexico Environment Department (NMED) has reviewed Western Refining Southwest, Inc. Gallup Refinery's (the Permittee) *Railroad Rack Overflow Ditch and Fan-out Area Soil Investigation Work Plan* (Work Plan), dated September 17, 2008. This Work Plan was submitted in response to NMED's July 22, 2008 *Notice of Disapproval Railroad Rack Lagoon Fan-out Area Excavation Work Plan.* NMED hereby issues this Approval with Direction. The Permittee must adhere to all requirements established within this letter.

Comment 1

In Section 2.1.2 (Vertical Delineation), page 2-2, the Permittee states "[e]xisting borehole B8(B8-NEW-SE-S1) was drilled to a depth of 23 ft-bgs to vertically delineate the extent of DRO contamination. This borehole was selected for vertical delineation because the previous sampling event showed that this borehole had a DRO exceedance of 2,600 mg/kg at 7-ft-bgs."

One borehole to a depth of 23 feet below ground surface is not representative of the entire area to be excavated (as shown in Figure 6) and cannot be used delineate the vertical extent of DRO contamination. Note, approximately four feet from borehole B8(B8-NEW-SE-S1) is borehole A(B8-NEW-SE) with a detected DRO concentration of 19,000 mg/kg at nine feet bgs. According to Figures 4 and 6, at borehole A(B8-NEW-SE), samples have not been collected below a depth of nine feet to determine the approximate maximum depth of contamination. Therefore, the Permittee has not fully delineated the vertical extent of DRO contamination. During the excavation, the Permittee must ensure the vertical and horizontal extent of contamination has been delineated. See Comments 2 and 3.

Comment 2

In Section 2.1.3 (Sample Results), page 2-3, the Permittee states that "[s]amples were submitted to the laboratory for analysis. The laboratory analyzed the samples using USEPA Method 8015B. The results for samples collected from new boreholes M-1, I-1, G-1, and K-1 at depths of 3, 8, and 13 bgs and existing borehole B8 (B8-NEW-SE-S1) at 8, 13, 18, and 23 ft-bgs were non-detect for DRO. Trihydro believes that this new data effectively delineates both the horizontal and vertical extent of DRO contamination associated with test pit B-8. These results are illustrated on Figure 4."

Based on Figure 4, the Permittee has not defined the vertical extent of DRO contamination associated with test pit B-8 at locations B8-NE and A(B8-NEW-SE), which contain DRO concentrations of 1,300 mg/kg at three feet (ft) bgs and 19,000 mg/kg at nine ft bgs, respectively. These detections are above the NMED TPH guideline of 890 mg/kg. The Permittee must ensure that during the excavation, the contaminated soil associated with these locations is removed. The Permittee must also collect a representative number of confirmation samples to demonstrate that residual DRO contamination is below 890 mg/kg. Based on field events, confirmation samples must be collected from the bottom and side-walls of the excavation. See Comment 3.

Comment 3

The Permittee discusses confirmation sample collection in Section 4.3. The Permittee proposes to collect 10 confirmation samples which are identified in Figure 6. The Permittee states on page 4-2, that "[t]he area to be excavated to 13-ft-bgs has four sidewalls. However, four samples with DRO concentrations below the cleanup standard have already been collected from the sidewalls of this area (as the result of previous delineation activities.) Because of this, Trihydro believes that one additional sidewall confirmation sample collected from the area to be excavated to 13 ft-bgs will be sufficient to demonstrate that DRO contaminated soil has been removed from this area.....[a] summary of the proposed soil confirmation sampling is presented in Table 1."

NMED does not agree with the proposed confirmation sampling. The Permittee is asking NMED to approve a specific number of confirmation samples when field conditions may prove

otherwise. Additional confirmation bottom and side-wall samples may be necessary to demonstrate compliance. NMED has the following comments related to the remedial activities:

a. There are data gaps in the delineation of the vertical and horizontal extent of DRO contamination. For example, in reference to Figure 6, sample points K, H, I, and M were sampled at depths of three and five feet. These locations have DRO detections above the cleanup standard at three feet and detections below the cleanup standards at five feet. The Permittee has not demonstrated that between three and five feet, the DRO concentrations in the soil are below the cleanup standard of 890 mg/kg or whether additional soil must be removed between these depths. In addition, there is approximately 20 feet between locations J, K, G, H, I, and M and K-1, G-1, I-1, and M-1. With the exception of location L, there are no sampling locations or analytical data to demonstrate if DRO is present in soil at concentrations greater than the cleanup level within this 20 foot gap. (See items b-e)

b. The area to be excavated to 13 feet may require additional bottom and side-wall confirmation samples than what was proposed in the Work Plan in order to demonstrate that residual soil DRO concentrations are below the clean up standard. This shall be determined by the Permittee based on field observations.

c. Sample locations E, K, H, I, and M are all near the limits of the excavation between depths of three and five feet (as shown in Figure 6). Contamination is present at concentrations that exceed the cleanup standard at three feet at all of these locations. It is not clear if soils will be excavated to five feet or three feet at these locations. The Permittee must ensure that all of the contaminated soil is removed and that a representative number of confirmation samples are collected from the bottom and side-walls of the excavation to demonstrate successful removal.

d. The Permittee must collect additional confirmation samples from the following locations: between CS-8 and M-1, between I-1 and M-1, and between 8-8NEW-NW and J. Confirmation samples must be collected from the bottom of the excavation. Side-wall confirmation samples must also be collected pending observations based on field screening. Side-wall samples must be collected to demonstrate that all soil containing DRO contamination at levels greater than the cleanup standard has been removed. NMED has provided an attached Figure (6) that identifies the additional locations for confirmation sample collection (locations are marked in red with a circled X). The Permittee may need to collect additional confirmation samples based on field observations.

e. The Permittee must use field screening methods to determine if additional excavation and confirmation sampling are necessary. Depending on field observations, it may be necessary to collect additional side-wall samples in addition to bottom samples (e.g., if contamination is found where it was not expected, excavation side-wall and bottom confirmation samples must be collected to demonstrate that contaminated soils have been removed).

Comment 4
In Section 4.2 (Excavation), page 4-1, the Permittee states "[u]pon completion of the excavation and receipt of sample results that verify that DRO concentrations are below the cleanup standard, the area will be backfilled with clean native material obtained from within the Refinery boundary."

The Permittee must demonstrate that the native material used as backfill has not been contaminated from refinery operations.

Comment 5
In Section 6.1 (Photographs), page 6-1, the Permittee states "[p]hotographs will be used to substantiate and augment the field notes. Photo-documentation will be utilized to show that the staked boundaries have been excavated to the appropriate depths. Each photograph will be numbered and recorded on a photograph log."

If the Permittee provides photographic documentation in the investigation report, the photographs must include the direction from which the photograph was taken (e.g., facing east).

Comment 6
The Permittee provides the following notation under "Explanation" in Figures 4 and 6 that states "* A(B8-NEW-SE) = MAY EVENT(AUGUST EVENT)" and "* B(B8-NEW-SE-S1) = MAY EVENT(AUGUST EVENT)."

If these notations are depicted on the figures in the final report, the Permittee must explain their meaning.

Comment 7
In accordance with NMED's July 22, 2008 Notice of Disapproval, the Permittee was supposed to submit an electronic copy of the Revised Excavation Plan with all edits and modifications shown in redline-strikeout format.

A redline –strikeout copy of the Revised Excavation Plan was not provided. In the future the Permittee must ensure that all requested information is submitted, or provide a reason for not including the requested information.

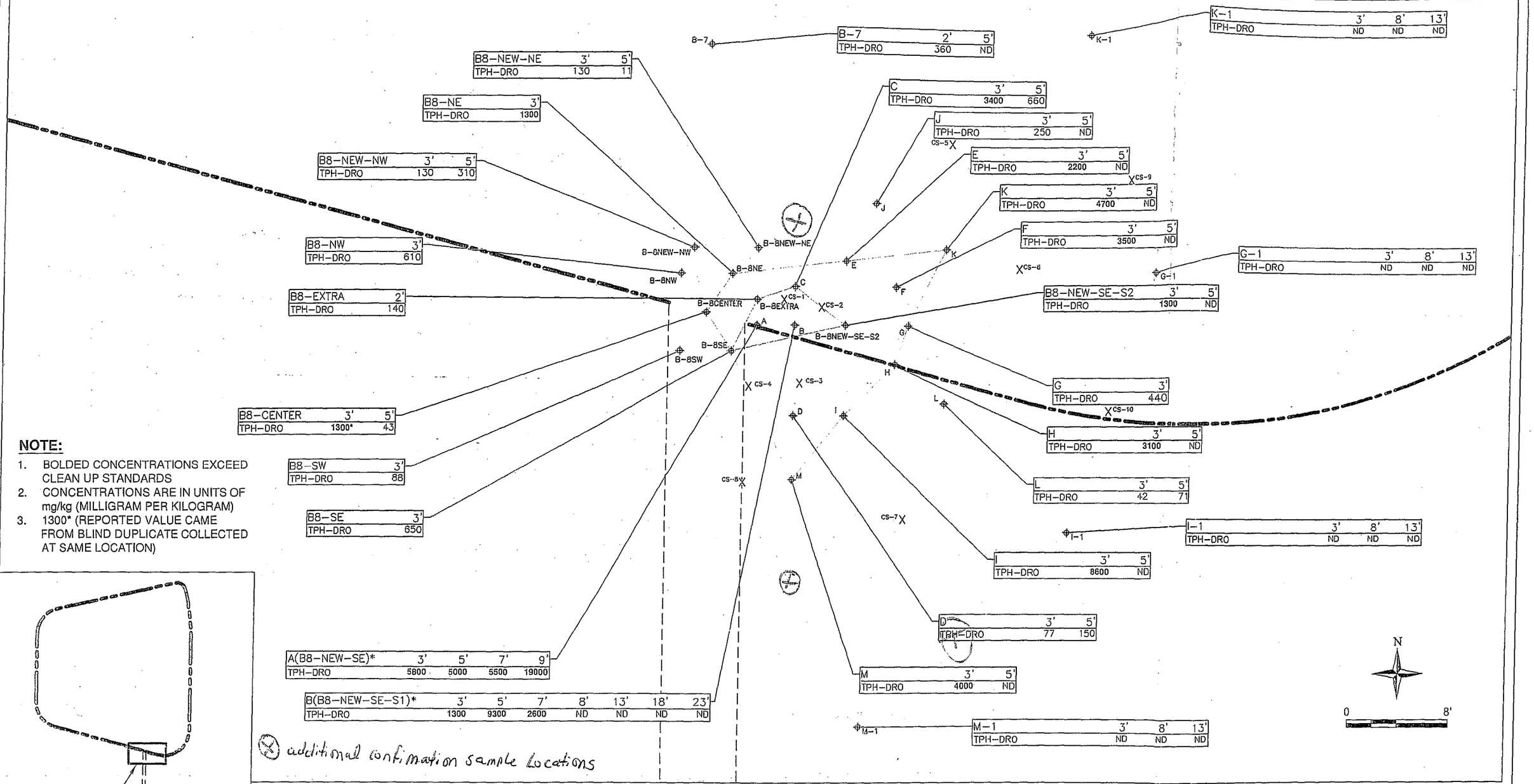
The Permittee must adhere to all requirements established within the Approval with Direction. The Work Plan must be implemented no later than April 1, 2009 and the Remedy Completion Report must be submitted to NMED no later than July 1, 2009. The Permittee must notify NMED one week prior to the start of field activities. No response to this letter is necessary.

If you have any questions regarding this letter please contact Hope Monzeglio of my staff at (505) 476-6045.

Sincerely,

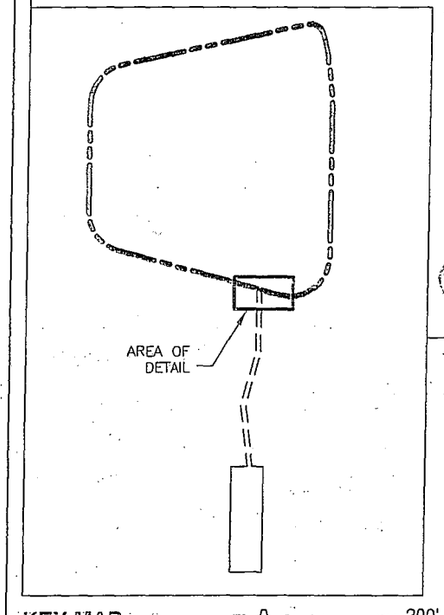
John E. Kieling
Program Manager
Permits Management Program
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
H. Monzeglio, NMED HWB
W. Price, OCD
G. Ragen, GRCC
File: GRCC 2008 and Reading
HWB-GRCC-07-002



NOTE:

1. BOLDED CONCENTRATIONS EXCEED CLEAN UP STANDARDS
2. CONCENTRATIONS ARE IN UNITS OF mg/kg (MILLIGRAM PER KILOGRAM)
3. 1300* (REPORTED VALUE CAME FROM BLIND DUPLICATE COLLECTED AT SAME LOCATION)



KEY MAP 0 200'

EXPLANATION

- OUTFLOW DITCH
- FAN-OUT AREA
- RAILROAD RACK LAGOON
- PREVIOUSLY EXCAVATED AREA
- EXCAVATE TO 3 FEET
- EXCAVATE TO 5 FEET
- EXCAVATE TO 13 FEET

Φ_{M-1} SOIL SAMPLE LOCATION AND DESIGNATION

ND NON DETECT

* A(B8-NEW-SE) = MAY EVENT(AUGUST EVENT)
B(B8-NEW-SE-S1) = MAY EVENT(AUGUST EVENT)

X^{CS-7} PROPOSED CONFIRMATION SAMPLE LOCATION

CONSTITUENT TABLE EXPLANATION

WELL DESIGNATION →	M-1	3'	8'	13' ← SAMPLE DEPTH
TOTAL PETROLEUM HYDROCARBONS AS DIESEL RANGE ORGANICS →	TPH-DRO	ND	ND	ND } CONCENTRATION SHOWN HERE IN MAXIMUM VALUE

Trihydro CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 6

RAILROAD RACK LAGOON OVERFLOW DITCH, FAN-OUT AREA SOIL SAMPLE LOCATIONS, AND RESULTS AND CONFIRMATION SAMPLE LOCATIONS

WESTERN REFINING, LLC
GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: RES	Checked By: RA	Scale: 1" = 8'	Date: 7/31/08	File: 072SOILSAMPAREA200804-6

APPENDIX G

NMED NOTICE OF DISAPPROVAL
JANUARY 2010 FINAL REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Phone (505) 476-6000 Fax (505) 476-6030
www.nmenv.state.nm.us

BILL RICHARDSON
Governor

DIANE DENISH
Lieutenant Governor

RON CURRY
Secretary

SARAH COTTRELL
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

May 12, 2010

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

RE: NOTICE OF DISAPPROVAL
RAILROAD RACK LAGOON OVERFLOW DITCH AND FAN-OUT AREA,
SWMU No. 8 SUBSURFACE INVESTIGATION FINAL REPORT
WESTERN REFINING COMPANY SOUTHWEST, INC., GALLUP REFINERY
EPA ID # NMD000333211
HWB-WRG-10-002

Dear Mr. Riege:

The New Mexico Environment Department (NMED) reviewed the *Railroad Rack Lagoon Overflow Ditch and Fan-Out Area, SWMU No. 8, Subsurface Investigation Final Report* (Report), dated January 2010, submitted on behalf of Western Refining Company Southwest Inc., Gallup Refinery (Permittee) and hereby issues this Notice of Disapproval (NOD) with the following comments.

Comment 1

NMED's December 11, 2009 *Approval with Modifications*, required the Permittee to define the vertical and horizontal extent of contamination at the overflow and fan-out area. From the Report, it is not clear that the Permittee completed the task to define the vertical extent of contamination. Table 1 (DRO Analytical Data Summary) lists results that are above the Total Petroleum Hydrocarbon (TPH) Diesel Range Organics (DRO) cleanup level of 890 mg/kg. Figure 5 (Railroad Rack Lagoon Overflow Ditch B-8 Excavation Areas and DRO Results)

presents sample results and areas that were excavated, but it does not appear that confirmation samples were collected at the bottom of the excavation. The excavation bottom samples were required by NMED's March 14, 2009 letter *Approval with Direction* which stated "[i]f the excavation does not exceed three feet below ground surface (bgs), the Permittee may collect confirmation samples from the bottom of the excavations only. If the excavation exceeds three feet bgs, then confirmation samples must be collected from all sidewalls of the excavations in addition to from the base of the excavations." The Permittee did not follow this directive, for example, in Area 3, which was excavated to seven feet; confirmation samples were not collected from the base of this excavation. In Area 4, which was excavated to 13 feet, the Permittee collected six samples around the perimeter of the excavation at a depth of 13 feet and only three samples were collected from the base of the excavation. At one point (A (B8-NEW-SE)) there is an increase in DRO concentration with depth and apparently no sample collected to demonstrate that the DRO-contaminated soil was removed.

In order to determine whether or not the removal of all soils containing concentrations of DRO above 890 mg/kg from the fan-out area was completed, the Permittee needed to collect samples from the base and sidewalls of the excavation. Therefore, confirmation samples must be collected at the excavation bottom and from the sidewalls using a systematic sampling pattern and samples must also be collected from areas of visible staining, elevated moisture levels, and contaminated zones identified by field-screening and beneath areas with detected residual contamination. Until the Permittee defines the extent of the contamination, NMED cannot determine if further remediation is necessary. The Permittee must conduct additional confirmation sampling and, if necessary, conduct additional excavation activities if the confirmation samples contain DRO concentrations greater than the acceptable cleanup level. In the revised Report, the Permittee must submit a figure depicting the locations of the final confirmation sample locations, depths the samples were taken, and the analytical results. The Permittee must submit proposed confirmation sample locations for NMED approval no less than 30 days before confirmation sampling activities begin.

Comment 2

In Section 3.2 (Excavation Activities), page 3-2, paragraph 3, the Permittee states "[c]onfirmation sample locations were strategically located to supplement the existing DRO data." The Permittee must include more detail regarding the confirmation sampling (i.e., provide the rationale for the "strategic" location of the confirmation samples). The Permittee must revise the Report to include specific details regarding the confirmation sampling locations and the logic behind the selection of the sampling locations.

Comment 3

In Section 3.2 (Excavation Activities), page 3-2, paragraph 3, the Permittee states "[d]ue to

confirmation sample DRO exceedences, the size of the excavation, as proposed in the 2008 Excavation Work Plan, was increased ... Excavation activities continued through October 2009 due to additional confirmation sample exceedences and visually impacted soil." The Permittee must revise the Report to include additional detail regarding the excavation. For example, the Permittee must state, or include a figure with, the locations where the exceedences were found (e.g., sample location, depth, cardinal direction), discuss the amount of soil removed during each of the excavations, and describe confirmation sampling.

Comment 4

In Section 3.2 (Excavation Activities), page 3-2 and 3-3, the Permittee states "Test Pit B-8 confirmation sample locations and results are illustrated in Figure 5. Area 1 was excavated to depth of 3 feet below ground surface (ft bgs), and excavation activities in this area were overseen by Trihydro. Area 2 was excavated to a depth of 5 ft bgs by Gallup personnel. Area 3 and 4 excavations were overseen by a combination of Trihydro and Gallup personnel and extended to 7 and 13 ft bgs." The Permittee must revise the Report to discuss the basis for excavation to the various depths (e.g., the confirmation sample detections that indicated the need for additional soil removal). The Permittee must revise Figure 5 or provide an additional figure to show the final confirmation sample locations, see Comment 1.

Comment 5

In Section 4.3.1.1 (Delineation Sample Locations), page 4-2, paragraph 2, the Permittee states "[t]he sampling locations in these three delineation sampling events (May, August, and December 2007) were determined based on exceedences identified during the preceding sampling events. These locations are illustrated on Figures 5 and 6." The Permittee must list these sampling locations by name in the text, so that the locations can be identified in the figures. Additionally, Figure 5 appears to illustrate the locations of multiple sampling events beyond the three delineation events mentioned above. The Permittee must revise the Report to refer to specific sampling locations, instead of referring to the locations generally.

Comment 6

In Section 4.3.2.1 (Confirmation Sample Locations), page 4-4, paragraph 1, the Permittee states "[a] total of ten sidewall and base confirmation sample locations were proposed in the 2008 Excavation Work Plan. Three additional locations were added at the suggestion of NMED in the December 11, 2008 Approval with Direction letter provided as Appendix F. These 13 locations were strategically located in areas where DRO delineation data was limited in an attempt to fill potential data gaps. Of the 13 approved confirmation sampling locations, 3 exceeded the DRO cleanup standard prompting expansion of the excavation." The Permittee must revise the Report to be specific regarding the sample location names (e.g.,instead of stating "of the 13 approved

sampling locations, 3 exceeded," list the specific location designations).

Comment 7

In Section 4.4 (Investigation Derived Waste), page 4-5, the Permittee states "[e]xcavated soils and soil cuttings produced during the sampling events have been transported to Gallup's Land Farm as permitted by OCD." The Permittee must revise the Report to describe the estimated volume of soil cuttings and excavated soil that were disposed of at the Land Farm.

Comment 8

In Section 6.1 (Test Pit B-9), the Permittee states "samples collected from each corner of the excavation at depths of 3 ft bgs and the center of the excavation at a depth of 5 ft bgs showed DRO concentrations below the clean up standard." The sample points are illustrated in Figure 6 (Railroad Rack Lagoon Overflow Ditch B-9 Final Excavation Area and Sample Results); the Permittee excavated the ditch to 5 feet, but in the figure it is not apparent that the 3 ft samples are sidewall samples. The Permittee must revise the Report and Figures to differentiate between sidewall and bottom confirmation samples (e.g., use different symbols or colors on the figures, provide additional figures or in a table cross-referenced in the figure key).

Comment 9

In Section 6.2 (Test Pit B-8), the Permittee states "[a]s illustrated on Figure 5, between delineation and confirmation sampling activities, a total of 67 soil samples showing DRO concentrations below the cleanup standard have been excavated from the vicinity of Test Pit B-8. A summary of the analytical data is provided as Table 1." Figure 5 and Table 1 appear to show either residual contamination, or that the Permittee did not collect confirmation samples from the base of the excavation. See Comment 1 regarding Figure 5, Table 1 and additional confirmation sampling requirements.

The Permittee must address all comments contained in this NOD and submit a revised Work Plan to NMED and OCD on or before July 20, 2010. The revised Report must be accompanied by a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments. In addition, the Permittees must submit a redline-strikeout version that includes all changes and edits to the Report (electronic copy) with the response to this NOD.

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

Sincerely,

James P. Bearzi
Chief
Hazardous Waste Bureau

cc: J. Kieling, NMED HWB
D. Cobrain NMED HWB
H. Monzeglio NMED HWB
K. Van Horn NMED HWB
C. Chavez, OCD
R. Gaurav, Gallup
File: Reading File and WRG 2010 File
HWB-WRG-10-002

APPENDIX H

WESTERN RESPONSE TO NMED NOTICE OF DISAPPROVAL

JUNE 2010

June 23, 2010

Mr. James P. Bearzi
Chief – Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

RE: NMED's "NOTICE OF DISAPPROVAL
RAILROAD RACK LAGOON OVERFLOW DITCH AND FAN-OUT AREA,
SWMU No. 8 SUBSURFACE INVESTIGATION FINAL REPORT
WESTERN REFINING COMPANY SOUTHWEST, INC., GALLUP REFINERY EPA
ID # NMD000333211
HWB-WRG-10-002"

Dear Mr. Bearzi:

The purpose of this letter is to respond to the New Mexico Environment Department's (NMED) comments to the *Railroad Rack Lagoon Overflow Ditch and Fan-Out Area, SWMU No. 8, Subsurface Investigation Final Report* (Report), dated January 6, 2010, submitted on behalf of Western Refining Company Southwest Inc., Gallup Refinery (Western). NMED issued comments to the Report in a *Notice of Disapproval*, dated May 12, 2010.

NMED's May 12 comments are repeated below for convenience. Each comment is followed by Western's response. NMED Comment 1 has been divided into subcomments so that each topic could be addressed separately.

NMED Comment 1

NMED's December 11, 2009 *Approval with Modifications,* required the Permittee to define the vertical and horizontal extent of contamination at the overflow and fan-out area. From the Report, it is not clear that the Permittee completed the task to define the vertical extent of contamination. Table 1 (DRO Analytical Data Summary) lists results that are above the Total Petroleum Hydrocarbon (TPH) Diesel Range Organics (DRO) cleanup level of 890 mg/kg.

Response to Comment 1

Table 1 of the Report lists all DRO data associated with the B-8 and B-9 excavations. These two locations were determined to be the only areas of concern based on the October 2006 investigation. In order to define the vertical and horizontal extent of

contamination, contaminated soil must be identified. Therefore, Western deemed it appropriate to show the results of the contaminated soil on Table 1 and Figure 5. When DRO exceedances were discovered, the excavation was expanded to remove the DRO contaminated soil and additional confirmation samples were collected. Table 2 (as subset of Table 1) has been created to show the confirmation samples collected at the base and sidewalls of the excavation. These samples have DRO concentrations below the cleanup level of 890 mg/kg, thus delineating the vertical and horizontal extent of contamination. Table 2 is included as an attachment to this correspondence and, upon NMED approval, will be included in a revised version of the Report.

NMED Comment 1 cont'd

Figure 5 (Railroad Rack Lagoon Overflow Ditch B-8 Excavation Areas and DRO Results) presents sample results and areas that were excavated, but it does not appear that confirmation samples were collected at the bottom of the excavation. The excavation bottom samples were required by NMED's March 14, 2009 letter *Approval with Direction* which stated "[i]f the excavation does not exceed three feet below ground surface (bgs), the Permittee may collect confirmation samples from the bottom of the excavations only. If the excavation exceeds three feet bgs, then confirmation samples must be collected from all sidewalls of the excavations in addition to from the base of the excavations." The Permittee did not follow this directive, for example, in Area 3, which was excavated to seven feet; confirmation samples were not collected from the base of this excavation.

Response to Comment 1 cont'd

Sample CS-14, located on the northwest corner of Area 3, was collected at 7 ft bgs from the edge of Areas 3 and 4. Thus, it can be considered a base confirmation sample for Area 3 and a sidewall confirmation sample for Area 4.

Sample CS-22 was collected approximately 2 feet north of Area 3. CS-22 was collected at 7 ft bgs to vertically delineate DRO contamination discovered in samples CS-19, CS-20, and CS-21 (3 ft bgs, 3.5 ft bgs, and 3.5 ft bgs, respectively). These samples, in part, necessitated extending the depth of the excavation in Area 3 (from 3 ft bgs to 7 ft bgs). Sample CS-22 was initially planned to be a base confirmation sample in Area 3; there are no DRO exceedances in the immediate vicinity of this sample location necessitating excavation deeper than 7 ft bgs. However, due to the nature of excavating with a backhoe (i.e. the precision and accuracy of the backhoe) and the fact that the areas were measured after the excavation had been completed, the portion of Area 3 including CS-22 was excavated to 13 ft bgs. Western believes that CS-22 may still be used to demonstrate vertical delineation (as a base sample) at Area 3 at a depth of 7 ft bgs even though it is technically located approximately 2 feet north of Area 3.

NMED Comment 1 cont'd
In Area 4, which was excavated to 13 feet, the Permittee collected six samples around the perimeter of the excavation at a depth of 13 feet and only three samples were collected from the base of the excavation.

Response to Comment 1 cont'd
Western is unclear as to NMED's comment that six samples were collected from around the perimeter of the excavation at a depth of 13 feet. As presented on Figure 5 and Table 1, three samples were collected from the base at perimeter of the 13 foot excavation (A-1, A-2, and A-3) and three internal base samples were collected from within the 13 foot excavation (CS-1, CS-16, and "B"). Thus, Western believes a total of six base confirmation samples were collected from Area 4. Further, four sidewall samples were collected from the 13-foot excavation. These sidewall samples include B-8 Center (5 feet), E (5 feet), K (5 feet), and M (5 feet).

To help clarify this issue, Western has created Figure 7 to illustrate base and sidewall confirmation samples for each area. The sidewall samples are shown as orange and base samples are shown as magenta. There are a few samples that can be considered both base and sidewall samples. For example, CS-14 is collected at 7 ft bgs on the corner of Area 3 and Area 4. In respect to Area 3, this is a base sample. In respect to Area 4, it is a sidewall sample. These "base/sidewall" samples are illustrated on Figure 7 in cyan. Figure 7 is included as an attachment to this correspondence and, pending NMED approval, will be included in a revised version of the Report.

NMED Comment 1 cont'd
At one point (A (B8-NEW-SE)) there is an increase in DRO concentration with depth and apparently no sample collected to demonstrate that the DRO-contaminated soil was removed.

Response to Comment 1 cont'd
At the time that additional delineation samples were being collected in the vicinity of A(B8-NEW-SE) (henceforth referred to as "A") to help determine the vertical extent of DRO contamination, a hollow stem auger drill rig was being used to collect soil samples. Due to the open excavation immediately adjacent to "A", deeper samples were not able to be safely collected at this exact location. Instead, deeper samples were collected at B(B8-NEW-SE-S1) (henceforth referred to as "B") which also showed DRO exceedances at depths as deep as 7 ft bgs. The "B" sample location is approximately 2 to 3 feet east of "A" and samples collected from 13 ft bgs, 18 ft bgs, and 23 ft bgs were each non-detect for DRO, thus verifying that the 13 ft bgs excavation was sufficient to remove DRO-contaminated soil

NMED Comment 1 cont'd

In order to determine whether or not the removal of all soils containing concentrations of DRO above 890 mg/kg from the fan-out area was completed, the Permittee needed to collect samples from the base and sidewalls of the excavation. Therefore, confirmation samples must be collected at the excavation bottom and from the sidewalls using a systematic sampling pattern and samples must also be collected from areas of visible staining, elevated moisture levels, and contaminated zones identified by field-screening and beneath areas with detected residual contamination.

Response to Comment 1 cont'd

In the March 14, 2009 letter *Approval with Direction*, NMED had originally requested that 13 confirmation samples be collected for the original excavation area. However, because CS-2, CS-4, and CS-8 exceeded the DRO cleanup level, the excavation was expanded and 33 confirmation samples were collected (26 base, 4 sidewall, 3 base/sidewall – see Figure 7).

Western collected confirmation samples in accordance with the locations that NMED approved in the "Approval With Direction, Railroad Rack Lagoon Fan-Out Area Excavation Work Plan, Western Refining Southwest, Inc., Gallup Refinery, EPA ID #: NMD000333211, HWB-GRCC-07-002." When the size of the excavation was increased due to DRO exceedances, the same methodology was used to collect additional confirmation samples. An example of this methodology is shown using samples CS-19, CS-20, CS-21 and CS-22. Samples CS-19, CS-20, and CS-21 were above the DRO cleanup level at 3 or 3.5 ft bgs. Thus, the excavation was extended to 7 ft bgs in this area and CS-22 (horizontally located in the middle of CS-19, CS-20, and CS-21) was collected to vertically delineate DRO contamination.

As mentioned in section 4.3.3 of the Report, due to limited correlation shown between field screening data and confirmation sampling results, NMED permitted Western to proceed with the excavation utilizing visual observations and confirmation sampling results in lieu of field screening. When areas exhibiting visual contamination were identified, the size of the excavation was expanded and confirmation samples were collected. This was the case for CS-19 and CS-20. When the CS-19 and CS-20 samples were being collected, visible staining was observed. Thus, once the laboratory results were received, it was decided to excavate the area to 7 feet. This was the depth at which the staining was visibly removed.

NMED Comment 1 cont'd
Until the Permittee defines the extent of the contamination, NMED cannot determine if further remediation is necessary. The Permittee must conduct additional confirmation sampling and, if necessary, conduct additional excavation activities if the confirmation samples contain DRO concentrations greater than the acceptable cleanup level.

Response to Comment 1 cont'd
As mentioned in Section 7.0 of the Report, the B8 DRO exceedances discovered during the investigation/excavation are surrounded by at total of 67 soil samples showing DRO concentrations less than the cleanup standard. Western believes these 67 soil samples define the extent of the DRO contamination and no additional confirmation sampling is necessary. A total of 784 cubic yards of DRO-contaminated soil encompassed by these 67 samples has been excavated. Therefore, Western believes no further excavation activities are necessary.

NMED Comment 1 cont'd
In the revised Report, the Permittee must submit a figure depicting the locations of the final confirmation sample locations, depths the samples were taken, and the analytical results. The Permittee must submit proposed confirmation sample locations for NMED approval no less than 30 days before confirmation sampling activities begin.

Response to Comment 1 cont'd
Figure 5 of the Report shows all sample locations, depths, and analytical results. Figure 7 and Table 2 (provided as attachments to this correspondence) have been created to show only the final confirmation sample locations. The revised Report will be updated to included Figure 7 and Table 2.

Note that Figure 7 and Table 2 only show confirmation sample results of those samples that were collected from the base or sidewall of the final excavation. Numerous other samples (for example, CS-24 and CS-18) were also necessary for delineating the DRO contaminated area. However, since these samples were not collected from the base or sidewall of the final excavation, they are not included on Figure 7 or Table 2. Figure 7 and Table 2 will be incorporated into the revised Report.

NMED Comment 2
In Section 3.2 (Excavation Activities), page 3-2, paragraph 3, the Permittee states "[c]onfirmation sample locations were strategically located to supplement the existing DRO data." The Permittee must include more detail regarding the confirmation sampling (i.e., provide the rationale for the "strategic" location of the confirmation samples). The Permittee must revise

the Report to include specific details regarding the confirmation sampling locations and the logic behind the selection of the sampling locations.

Response to Comment 2

Thirteen original confirmation sample locations and depths were approved by NMED in the "Approval With Direction, Railroad Rack Lagoon Fan-Out Area Excavation Work Plan, Western Refining Southwest, Inc., Gallup Refinery, EPA ID #: NMD000333211, HWB-GRCC-07-002." These locations were selected because limited DRO data existed in these areas. These confirmation samples are identified as CS-1 through CS-13. If a confirmation sample showed a DRO exceedance, the excavation was expanded. As the excavation was expanded, additional confirmation samples were collected to verify that the soil remaining in place was below the DRO cleanup standard. An example of this logic is provided in the response to Comment 1 (CS-19, CS-20, CS-21, and CS-22).

NMED Comment 3

In Section 3.2 (Excavation Activities), page 3-2, paragraph 3, the Permittee states "[d]ue to confirmation sample DRO exceedances, the size of the excavation; as proposed in the 2008 Excavation Work Plan, was increased ... Excavation activities continued through October 2009 due to additional confirmation sample exceedances and visually impacted soil." The Permittee must revise the Report to include additional detail regarding the excavation. For example, the Permittee must state, or include a figure with, the locations where the exceedances were found (e.g., sample location, depth, cardinal direction), discuss the amount of soil removed during each of the excavations, and describe confirmation sampling.

Response to Comment 3

Per the 2008 Excavation Work Plan, confirmation samples CS-1 through CS-13 were collected from the original excavation. The results of these samples, as well as the results of all samples associated with the excavation, are shown on Table 1 and Figure 5 of the Report. Of the original 13 confirmation samples, CS-2, CS-4, and CS-8 exceeded the DRO cleanup standard. Figure 4 shows the proposed excavation area versus the actual excavation area. As shown on Figure 4, the original confirmation sample exceedances prompted the excavation to be expanded generally to the west and southwest. However, each exceedance identified during delineation and excavation activities prompted additional investigation/excavation. As shown on Table 1, 28 exceedances were identified in the B-8 Excavation. Western deemed it more appropriate to illustrate these exceedances on a figure (Figure 5) rather than attempt to describe each of them in the text of the report.

NMED also requested that Western provide the amount of soil removed during each of the excavations. Western considers this to be a single excavation that was continuously expanded until the DRO contaminated soil was delineated and removed. Intermediate volumes were not required as part of the 2008 Excavation Work Plan, thus this information was not recorded or calculated. However, the final total volume is presented in Section 7.0 of the Report.

Confirmation soil sampling procedures are discussed in Section 4.3.2.2 and 4.3.1.2 of the Report.

NMED Comment 4

In Section 3.2 (Excavation Activities), page 3-2 and 3-3, the Permittee states "Test Pit B-8 confirmation sample locations and results are illustrated in Figure 5. Area 1 was excavated to depth of 3 feet below ground surface (ft bgs), and excavation activities in this area were overseen by Trihydro. Area 2 was excavated to a depth of 5 ft bgs by Gallup personnel. Area 3 and 4 excavations were overseen by a combination of Trihydro and Gallup personnel and extended to 7 and 13 ft bgs." The Permittee must revise the Report to discuss the basis for excavation to the various depths (e.g., the confirmation sample detections that indicated the need for additional soil removal). The Permittee must revise Figure 5 or provide an additional figure to show the final confirmation sample locations, see Comment 1.

Response to Comment 4

As presented in the Report, each area was excavated until the outermost samples (both horizontal and vertical) were below the DRO cleanup standard of 890 mg/kg. For example, an exceedance of DRO was discovered at 9 ft bgs at sample location "A." Therefore, this area was excavated to 13 ft bgs which was shown to be below the cleanup standard at sample location "B." The final confirmation samples prompting cessation of the excavation are illustrated on Figure 7 and Table 2. This Figure and Table are provided as attachments to this document and, pending NMED approval, will be provided in the revised Report.

NMED Comment 5

In Section 4.3.1.1 (Delineation Sample Locations), page 4-2, paragraph 2, the Permittee states "[t]he sampling locations in these three delineation sampling events (May, August, and December 2007) were determined based on exceedances identified during the preceding sampling events. These locations are illustrated on Figures 5 and 6." The Permittee must list these sampling locations by name in the text, so that the locations can be identified in the figures. Additionally, Figure 5 appears to illustrate the locations of multiple sampling events beyond the

three delineation events mentioned above. The Permittee must revise the Report to refer to specific sampling locations, instead of referring to the locations generally.

Response to Comment 5

A total of 101 samples were collected throughout the investigation/excavation. Western believes that attempting to discuss each individual sample result, whether or not the result prompted additional excavation, and what direction the excavation was expanded due to the result of the sample would cause more confusion than clarification. Instead, Western provided this information on Figure 5 where the information can be visualized. Each exceedance identified during delineation and excavation activities prompted additional investigation/excavation. The excavation was expanded until data showed that the remaining outermost samples (both horizontally and vertically) were below the cleanup standard.

As mentioned in NMED's comment, the text of the Report refers to three delineation events (May, August, and November 2007). These delineation events were used to determine the initially proposed excavation area presented in the 2008 Excavation Work Plan, dated September 17, 2008. Western considers subsequent field activities (excavation and confirmation sampling) as one, continuous field event, which is why multiple excavation "events" are not discussed in the text. The data collected from excavation and confirmation sampling is presented on Table 1 and Figure 5 in addition to the data collected from the three delineation events, for completeness. Sample IDs, the date which the sample was collected, the depth at which the sample was collected, and whether or not the sample exceeded the DRO cleanup standards are shown on Table 1. Sample locations, depths, and results are shown Figures 5 and 6. The sample dates shown on Table 1 may be used to determine with which event each sample is associated.

NMED Comment 6

In Section 4.3.2.1 (Confirmation Sample Locations), page 4-4, paragraph 1, the Permittee states "[a] total of ten sidewall and base confirmation sample locations were proposed in the 2008 Excavation Work Plan. Three additional locations were added at the suggestion of NMED in the December 11, 2008 Approval with Direction letter provided as Appendix F. These 13 locations were strategically located in areas where DRO delineation data was limited in an attempt to fill potential data gaps. Of the 13 approved confirmation sampling locations, 3 exceeded the DRO cleanup standard prompting expansion of the excavation." The Permittee must revise the Report to be specific regarding the sample location names (e.g., instead of stating, "of the 13 approved sampling locations, 3 exceeded," list the specific location designations).

Response to Comment 6

As shown in Table 1 of the 2008 Excavation Work Plan, the original proposed confirmation sampling locations are designated CS-1 through CS-10. Per NMED's conditional approval, CS-11 through CS-13 were added. As shown in Table 1 and Figure 5 of the Report, CS-2, CS-4, and CS-8 exceeded the DRO cleanup standard. The revised Report will specify CS-2, CS-4, and CS-8 as the three original confirmation sample locations that exceeded the cleanup level.

NMED Comment 7

In Section 4.4 (Investigation Derived Waste), page 4-5, the Permittee states "[e]xcavated soils and soil cuttings produced during the sampling events have been transported to Gallup's Land Farm as permitted by OCD." The Permittee must revise the Report to describe the estimated volume of soil cuttings and excavated soil that were disposed of at the Land Farm.

Response to Comment 7

As stated in Section 7.0 of the Report, approximately 784 cubic yards of soil were excavated from B-8. Dimensions for the B-9 excavation were also included in the Report, however the volume of soil was not. Approximately 3 cubic yards of soil were excavated from B-9. The revised Report will include the total cubic yards of soil excavated from B-9.

NMED Comment 8

In Section 6.1 (Test Pit B-9), the Permittee states "samples collected from each corner of the excavation at depths of 3 ft bgs and the center of the excavation at a depth of 5 ft bgs showed DRO concentrations below the clean up standard." The sample points are illustrated in Figure 6 (Railroad Rack Lagoon Overflow Ditch B-9 Final Excavation Area and Sample Results); the Permittee excavated the ditch to 5 feet, but in the figure it is not apparent that the 3 ft samples are sidewall samples. The Permittee must revise the Report and Figures to differentiate between sidewall and bottom confirmation samples (e.g., use different symbols or colors on the figures, provide additional figures or in a table cross-referenced in the figure key).

Response to Comment 8

If a sample is collected at the boundary of an area at a depth less than the total depth of the area, it is considered a sidewall sample. If a sample is collected at a depth equal to the total depth of a specific area, it is considered a base sample.

The revised Report will be updated to show base and sidewall samples as magenta and orange, respectively. For the B-9 Excavation, Figure 6 will be updated according to this color scheme.

Due to the complexity of Figure 5, Figure 7 has been created for the B-8 Excavation to show only the final confirmation samples. The above mentioned orange and magenta color scheme is used to differentiate between base and sidewall samples. There are a few samples that can be considered both base and sidewall samples. For example, CS-14 is collected at 7 ft bgs on the corner of Area 3 and Area 4. In respect to Area 3, this is a base sample. In respect to Area 4, it is a sidewall sample. These "base/sidewall" samples are illustrated on Figure 7 in cyan.

NMED Comment 9

In Section 6.2 (Test Pit B-8), the Permittee states "As illustrated on Figure 5, between delineation and confirmation sampling activities, a total of 67 soil samples showing DRO concentrations below the cleanup standard have been excavated from the vicinity of Test Pit B-8. A summary of the analytical data is provided as Table 1." Figure 5 and Table 1 appear to show either residual contamination, or that the Permittee did not collect confirmation samples from the base of the excavation. See Comment 1 regarding Figure 5, Table 1 and additional confirmation sampling requirements.

Response to Comment 9

Figure 5 and Table 1 show all delineation and confirmation sampling data, regardless of whether the data exceeds the DRO cleanup standard or not. The outermost (horizontally and vertically) data do not exceed the cleanup standard. Western deemed it appropriate to include the exceedances so that NMED could see that the DRO contamination has been delineated. Figure 7 and Table 2 have been created to show that confirmation samples below the cleanup standard surround the sidewalls and base of the excavation.

NMED FINAL COMMENT

The Permittee must address all comments contained in this NOD and submit a revised Work Plan to NMED and OCD on or before July 20, 2010. The revised Report must be accompanied by a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments. In addition, the Permittees must submit a redline-strikeout version that includes all changes and edits to the Report (electronic copy) with the response to this NOD.

Final Comment Response

Western believes that the additional explanation provided in this response, along with Figure 7 and Table 2, show that the Fan-out Area DRO contamination has been delineated and excavated. Thus, Western hopes that a revised Work Plan will not be necessary. Upon NMED's approval of these responses, Western will provide a letter detailing the revisions to the Report and cross-referencing NMED's numbered comments.

Western will also provide an electronic redline-strikeout version that includes all changes and edits to the Report.

Western believes that, upon NMED receipt of these responses, a meeting between NMED and Western may be mutually beneficial to help clarify the topics presented in this correspondence. If you have any questions, or if we can be of further service to you, please do not hesitate to call me at (307) 745-7474.

Sincerely,

Ed Riege
Environmental Manager

697-039-001

Attachments

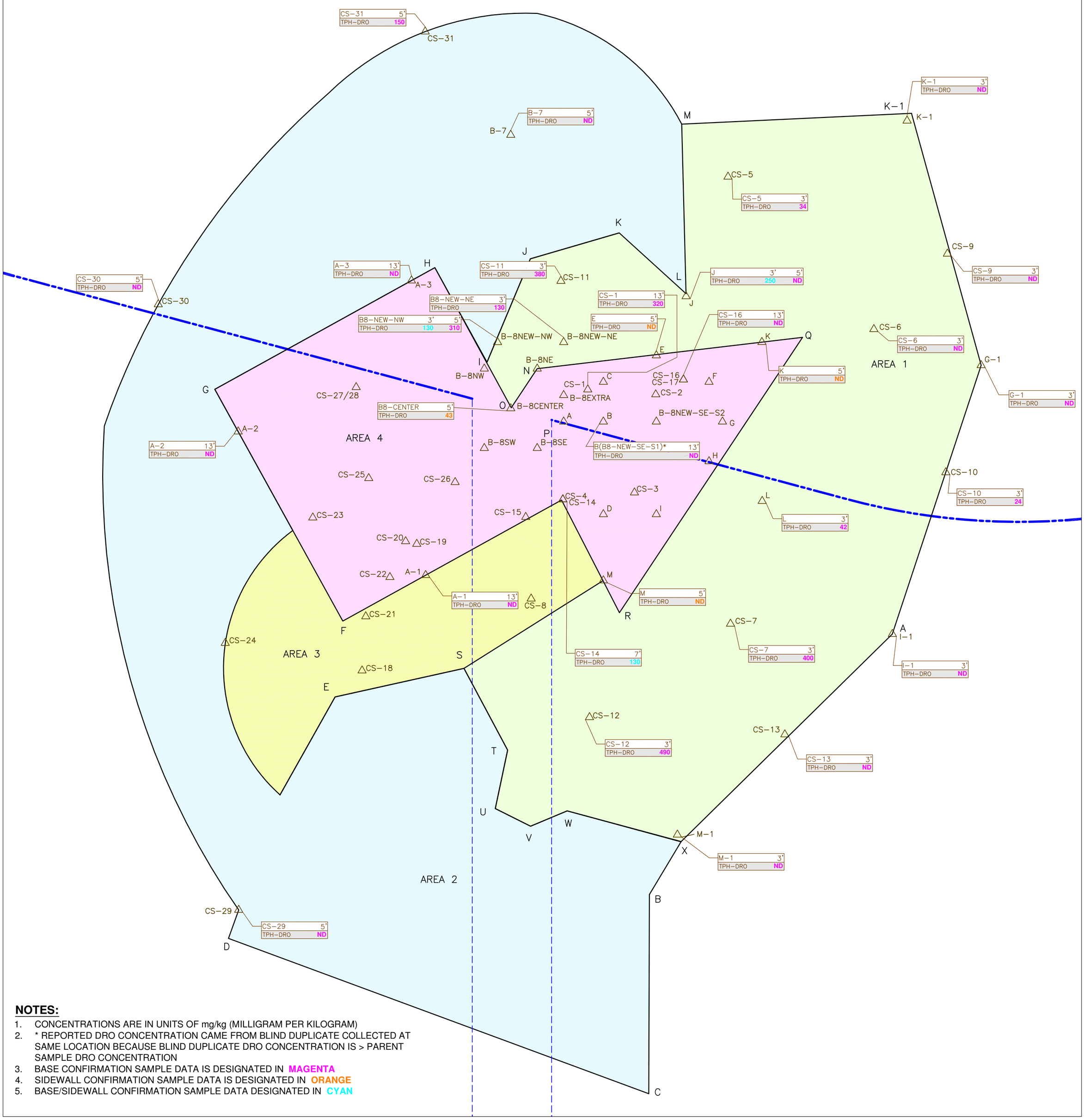
cc: H. Monzeglio NMED HWB
K. Van Horn NMED HWB
C. Chavez, OCD
File: Reading File and WRG 2010 File HWB-WRG-10-002

TABLE 2. FINAL CONFIRMATION SAMPLE ANALYTICAL DATA SUMMARY
RAILROAD RACK LAGOON OVERFLOW DITCH AND FAN-OUT AREA
WESTERN REFINING COMPANY, GALLUP REFINERY, GALLUP, NEW MEXICO

Excavation B-8				
Date	**Sample ID**	**Base Sample/ Sidewall Sample (Area)**	**Depth (ft bgs)**	**Laboratory DRO Result (mg/kg)**
10/18/2006	B-7	BS (Area 2)	5	ND(10)
10/17/2006	B-8Center	SS (Area 4)	5	43
5/23/2007	B-8NEW-NW	BS (Area 1); SS (Area 2)	3	130
5/23/2007	B-8NEW-NW	BS (Area 2)	5	310
5/23/2007	B-8NEW-NE	BS (Area 1)	3	130
12/17/2007	B-8NEW-SE-S1 (aka "B")	BS (Area 4)	13	ND(10)
8/20/2007	E	SS (Area 4)	5	ND(10)(UJ)
8/21/2007	J	BS (Area 1); SS (Area 2)	3	250(J)
8/21/2007	J	BS (Area 2)	5	ND(10)(UJ)
8/20/2007	K	SS (Area 4)	5	ND(10)(UJ)
8/21/2007	L	BS (Area 1)	3	42(J)
8/20/2007	M	SS (Area 3); SS (Area 4)	5	ND(10)(UJ)
12/17/2007	K-1	BS (Area 1)	3	ND(10)(UJ)
12/17/2007	G-1	BS (Area 1)	3	ND(10)
12/17/2007	I-1	BS (Area 1)	3	ND(10)(UJ)
12/17/2007	M-1	BS (Area 1)	3	ND(10)
3/17/2009	CS-1	BS (Area 4)	13	320
4/22/2009	CS-5	BS (Area 1)	3	34
3/18/2009	CS-6	BS (Area 1)	3	ND(10)
4/22/2009	CS-7	BS (Area 1)	3	400
3/18/2009	CS-9	BS (Area 1)	3	ND(10)
4/22/2009	CS-10	BS (Area 1)	3	24
4/22/2009	CS-11	BS (Area 1)	3	380
4/22/2009	CS-12	BS (Area 1)	3	490
4/23/2009	CS-13	BS (Area 1)	3	ND(10)
4/21/2009	CS-14	BS (Area 3); SS (Area 4)	7	130(J)
4/22/2009	CS-16	BS (Area 4)	13	ND(10)
10/1/2009	CS-29	BS (Area 2)	5	ND(10)
10/1/2009	CS-30	BS (Area 2)	5	ND(10)
10/1/2009	CS-31	BS (Area 2)	5	150
10/2/2009	A-1	BS (Area 4)	13	ND(10)
10/2/2009	A-2	BS (Area 4)	13	ND(10)
10/2/2009	A-3	BS (Area 4)	13	ND(10)

Excavation B-9				
Date	**Sample ID**	**Base Sample/ Sidewall Sample (Area)**	**Depth (ft bgs)**	**Laboratory Result (mg/kg)**
5/23/2007	B-9NEW-Center	BS (B9 Excavation)	5	150
5/21/2007	B-9SE	SS (B9 Excavation)	3	210
5/21/2007	B-9SW	SS (Excavation)	3	210
5/21/2007	B-9NE	SS (Excavation)	3	200
5/21/2007	B-9NW	SS (Excavation)	3	130

Notes:
DRO = Diesel Range Organics
ND(10)(UJ): Nondetect (limit)(Data Validation Qualifier)
BS = Base Sample
SS = Sidewall Sample
J = Estimated concentration
UJ = Estimated reporting limit
ft bgs = feet below ground surface



NOTES:

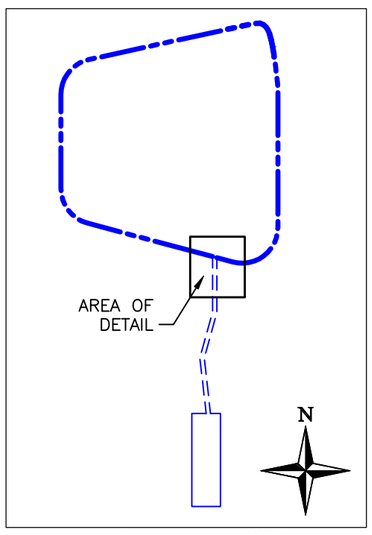
1. CONCENTRATIONS ARE IN UNITS OF mg/kg (MILLIGRAM PER KILOGRAM)
2. * REPORTED DRO CONCENTRATION CAME FROM BLIND DUPLICATE COLLECTED AT SAME LOCATION BECAUSE BLIND DUPLICATE DRO CONCENTRATION IS > PARENT SAMPLE DRO CONCENTRATION
3. BASE CONFIRMATION SAMPLE DATA IS DESIGNATED IN MAGENTA
4. SIDEWALL CONFIRMATION SAMPLE DATA IS DESIGNATED IN ORANGE
5. BASE/SIDEWALL CONFIRMATION SAMPLE DATA DESIGNATED IN CYAN

EXPLANATION

AREA 1	EXCAVATED TO 3 FEET
AREA 2	EXCAVATED TO 5 FEET
AREA 3	EXCAVATED TO 7 FEET
AREA 4	EXCAVATED TO 13 FEET
———	ACTUAL EXCAVATION BOUNDARY
- - - -	OUTFLOW DITCH
———	FAN-OUT AREA
———	RAILROAD RACK LAGOON
ND	NON DETECT
*	A(B8-NEW-SE) = MAY EVENT(AUGUST EVENT) B(B8-NEW-SE-S1) = MAY EVENT(AUGUST EVENT)
△M-1	SAMPLE LOCATION AND DESIGNATION

N

0 5' 10'



KEY MAP 0 200' 400'

CONSTITUENT TABLE EXPLANATION

SAMPLE ID → M-1 3' ← SAMPLE DEPTH
TOTAL PETROLEUM HYDROCARBONS → TPH-DRO ND ← CONCENTRATION
AS DIESEL RANGE ORGANICS

Trihydro CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 7

RAILROAD RACK LAGOON OVERFLOW DITCH B-8 FINAL BASE AND SIDEWALL CONFIRMATION SAMPLE DRO RESULTS

WESTERN REFINING GALLUP REFINERY GALLUP, NEW MEXICO

Drawn By: REP	Checked By: GP	Scale: AS SHOWN	Date: 6/2/2010	File: 697-SOIL-BS-201005

APPENDIX I

WESTERN EXTENSION REQUEST FOR REVISED REPORT

JULY 2010

Western Refining
GALLUP

WNR LISTED NYSE

Certified Mail 7008 2810 0000 4726 2304

July 19, 2010

Mr. James P. Bearzi
Chief – Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

RE: NMED's "NOTICE OF DISAPPROVAL
RAILROAD RACK LAGOON OVERFLOW DITCH AND FAN-OUT AREA,
SWMU No. 8 SUBSURFACE INVESTIGATION FINAL REPORT
WESTERN REFINING COMPANY SOUTHWEST, INC., GALLUP REFINERY EPA
ID # NMD000333211
HWB-WRG-10-002"

Dear Mr. Bearzi:

The purpose of this letter is to request an extension for a revised report as requested in the New Mexico Environment Department's (NMED) comments to the *Railroad Rack Lagoon Overflow Ditch and Fan-Out Area, SWMU No. 8, Subsurface Investigation Final Report* (Report), dated January 6, 2010, submitted on behalf of Western Refining Company Southwest Inc., Gallup Refinery (Western). NMED issued comments to the Report in a *Notice of Disapproval* (NOD), dated May 12, 2010.

The final comment in the May 12 NOD requested that Western address all comments contained in the NOD and, "submit a revised Work Plan to NMED and OCD on or before July 20, 2010. The revised Report must be accompanied by a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments. In addition, the Permittees must submit a redline-strikeout version that includes all changes and edits to the Report (electronic copy) with the response to this NOD."

During a phone call between Western and NMED on July 19, 2010, NMED clarified that a revised Report, not Work Plan, will be required. Western responded to NMED's NOD in a letter dated June 22, 2010. In this correspondence, Western proposed methods to revise the Report based on the comments that NMED issued in the NOD. NMED has not yet responded to the June 22 correspondence. Western is hesitant to update the Report until NMED replies to the June 22 correspondence due to the fact that the several revisions will be dependent on NMED's response. Therefore, Western is requesting an extension of the July 20, 2010 due date. Assuming NMED replies to the June 22 correspondence by July 30, 2010, and that NMED generally agrees that the revisions proposed in the June 22 correspondence will address NMED's comments, Western requests that the due date for the revised Report be extended to August 31, 2010. If you have any questions, or if we can be of further service to you, please do not hesitate to call me at (505) 722-0217.

I-40 Exit 39, Jamestown, New Mexico 87347 • 505 722-3833 • www.wnr.com
Mail: Route 3 Box 7, Gallup, New Mexico 87301

Sincerely,
Western Refining Company

Ed Riege
Environmental Manager

697-039-001

Attachments

cc: H. Monzeglio NMED HWB
K. Van Horn NMED HWB
C. Chavez, OCD
File: Reading File and WRG 2010 File HWB-WRG-10-002

APPENDIX J

NMED DIRECTION FOR ADDITIONAL SOIL CONFIRMATION SAMPLE COLLECTION AND APPROVAL OF EXTENSION REQUEST

JANUARY 2010 FINAL REPORT

NEW MEXICO ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Phone (505) 476-6000 Fax (505) 476-6030
www.nmenv.state.nm.us

BILL RICHARDSON
Governor

DIANE DENISH
Lieutenant Governor

RON CURRY
Secretary

SARAH COTTRELL
Deputy Secretary

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

July 28, 2010

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

RE: DIRECTION FOR ADDITIONAL SOIL CONFIRMATION SAMPLE COLLECTION AND APPROVAL OF EXTENSION REQUEST RAILROAD RACK LAGOON OVERFLOW DITCH AND FAN-OUT AREA, SWMU No. 8 SUBSURFACE INVESTIGATION FINAL REPORT WESTERN REFINING COMPANY SOUTHWEST, INC., GALLUP REFINERY EPA ID # NMD000333211 HWB-WRG-10-002

Dear Mr. Riege:

The New Mexico Environment Department (NMED) received Western Refining Company Southwest Inc., Gallup Refinery's (Permittee) letter entitled *NMED's "Notice of Disapproval Railroad Rack Lagoon Overflow Ditch and Fan-out Area, SWMU No. 8 Subsurface Investigation Final Report"* (Response Letter) dated June 23, 2010. NMED still requires that the Permittee collect additional confirmation samples within the excavation.

NMED's December 11, 2009 *Approval with Modifications* required the Permittee to define the vertical and horizontal extent of contamination at the overflow and fan-out area. The *Railroad Rack Lagoon Overflow Ditch and Fan-out Area, SWMU No. 8 Subsurface Investigation Final Report* (Report), dated January 2010, does not document that the extent has, in fact, been defined. In the Response Letter, the Permittee provided a new figure (Figure 7) and table (Table 2) that focuses on the confirmation samples collected; these should be included in the revised

Report. However, the confirmation samples clearly do not cover the entire excavation. The Permittee's explanation regarding confirmation sample collection in the Response Letter does not address NMED's concerns regarding the spacing of confirmation samples. As a result there is insufficient information for NMED to determine that the site has been cleaned up to the 890 mg/kg diesel range organics (DRO) soil screening level listed in NMED's Total Petroleum Hydrocarbon (TPH) Screening Guidelines. In order to determine whether or not the removal of all soils containing concentrations of DRO above 890 mg/kg from the fan-out area was completed, the Permittee must collect samples from the base and sidewalls of the entire excavation. The Permittee must conduct additional confirmation sampling and, if necessary, conduct additional soil removal activities if the confirmation samples contain DRO concentrations greater than the acceptable cleanup level.

NMED has amended Figure 7 to illustrate confirmation sample locations where the Permittee must collect confirmation samples. The Permittee must collect soil samples at the locations shown on Figure 7 as well as at any locations where field screening (visual, olfactory) indicates evidence of contamination. The additional confirmation sampling is limited in scope and only covers areas where confirmation samples have not been collected. The samples must be submitted to a laboratory for DRO analysis by EPA method 8015.

NMED received the Permittee's July 19, 2010 letter entitled *NMED's Notice of Disapproval Railroad Rack Lagoon Overflow Ditch and Fan-Out Area, SWMU No. 8 Subsurface Investigation Final Report* (Extension Request) by email. The letter requests an extension for the submittal of the Report. NMED approves the extension request with the following modifications. The Permittee must collect the additional confirmation samples and address all comments contained in NMED's May 12, 2010 *Notice of Disapproval* and submit a revised Report to NMED on or before September 30, 2010.

The revised Report must be accompanied by a response letter that details where all revisions have been made, cross-referencing NMED's numbered comments. In addition, the Permittees must submit a redline-strikeout version that includes all changes and edits to the Report (electronic copy) with the response to this NOD.

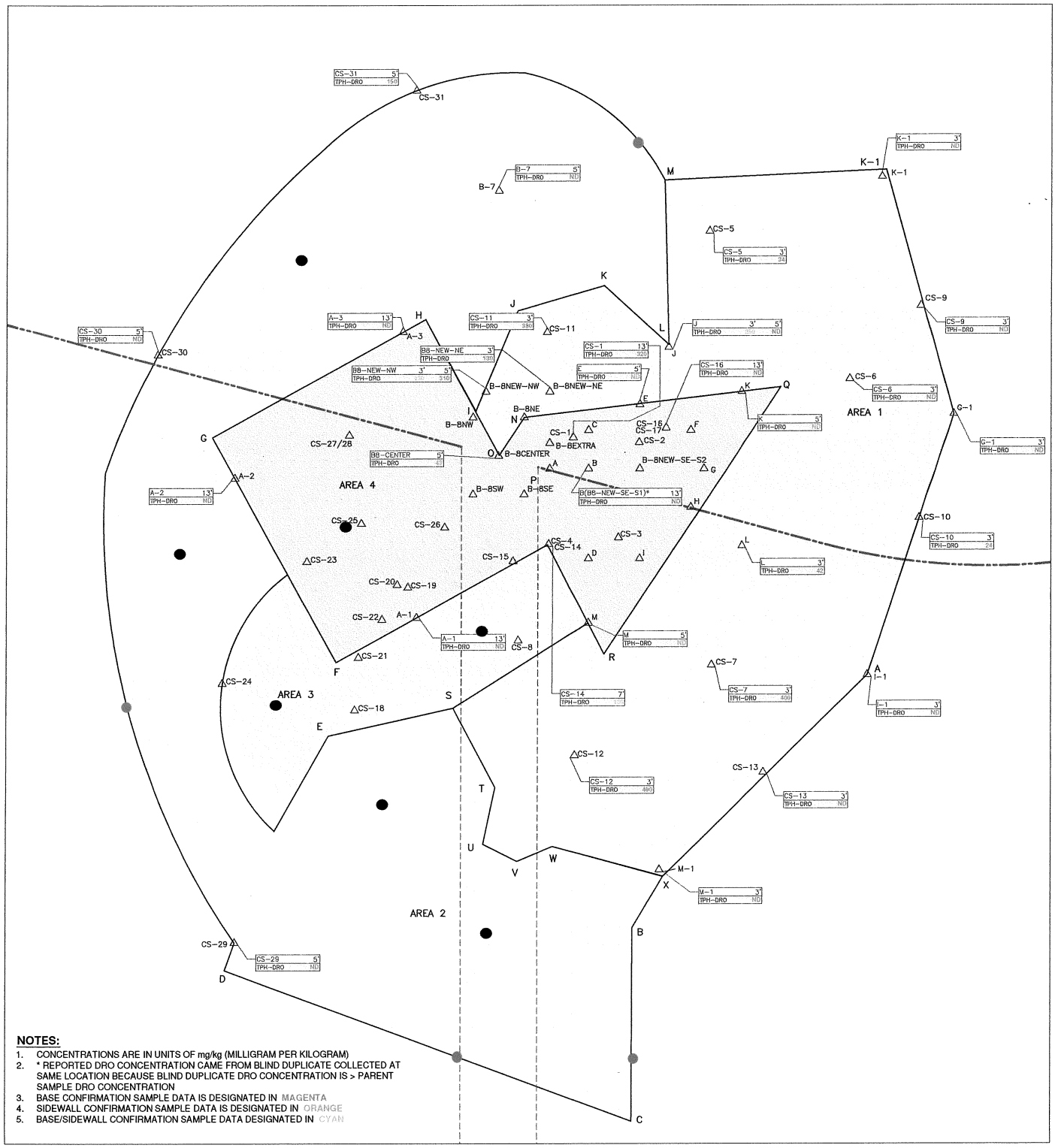
If you have questions regarding this NOD please contact Kristen Van Horn of my staff at 505-476-6046.

Sincerely,

James P. Bearzi
Chief
Hazardous Waste Bureau

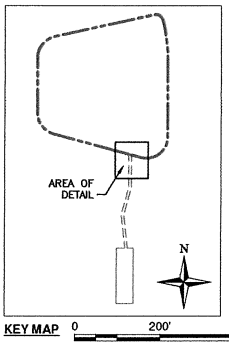
cc: J. Kieling NMED HWB
D. Cobrain NMED HWB
H. Monzeglio NMED HWB
K. Van Horn NMED HWB
C. Chavez, OCD
R. Gaurav, Gallup

File: Reading File and WRG 2010 File
HWB-WRG-10-002



NOTES:

1. CONCENTRATIONS ARE IN UNITS OF mg/kg (MILLIGRAM PER KILOGRAM)
2. * REPORTED DRO CONCENTRATION CAME FROM BLIND DUPLICATE COLLECTED AT SAME LOCATION BECAUSE BLIND DUPLICATE DRO CONCENTRATION IS > PARENT SAMPLE DRO CONCENTRATION
3. BASE CONFIRMATION SAMPLE DATA IS DESIGNATED IN MAGENTA
4. SIDEWALL CONFIRMATION SAMPLE DATA IS DESIGNATED IN ORANGE
5. BASE/SIDEWALL CONFIRMATION SAMPLE DATA DESIGNATED IN CYAN



KEY MAP 0 200' 400'

EXPLANATION

AREA 1	EXCAVATED TO 3 FEET
AREA 2	EXCAVATED TO 5 FEET
AREA 3	EXCAVATED TO 7 FEET
AREA 4	EXCAVATED TO 13 FEET
———	ACTUAL EXCAVATION BOUNDARY
- - - - -	OUTFLOW DITCH
——·——·——	FAN-OUT AREA
———	RAILROAD RACK LAGOON
ND	NON DETECT
*	A(B8-NEW-SE) = MAY EVENT(AUGUST EVENT) B(B8-NEW-SE-S1) = MAY EVENT(AUGUST EVENT)
△M-1	SAMPLE LOCATION AND DESIGNATION

CONFIRMATION SAMPLES
● SIDEWALL SAMPLE
● BASE EXCAVATION SAMPLE

N

0 5' 10'

CONSTITUENT TABLE EXPLANATION

SAMPLE ID — M-1 3' — SAMPLE DEPTH
TOTAL PETROLEUM HYDROCARBONS AS DIESEL RANGE ORGANICS — TPH-DRO ND — CONCENTRATION

Trihydro CORPORATION
1252 Commerce Drive
Laramie, Wyoming 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

FIGURE 7
RAILROAD RACK LAGOON OVERFLOW DITCH
B-8 FINAL BASE AND SIDEWALL CONFIRMATION
SAMPLE DRO RESULTS
WESTERN REFINING
GALLUP REFINERY
GALLUP, NEW MEXICO

Drawn By: REP	Checked By: GP	Scale: AS SHOWN	Date: 6/2/2010	File: 697-SOIL-BS-201005

APPENDIX K

WESTERN APPROVAL OF ADDITIONAL SOIL CONFIRMATION SAMPLING

AUGUST 2010

August 9, 2010

Kristen Van Horn
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303

RE: NMED's "Direction for Additional Soil Confirmation Sample Collection and Approval of Extension Request, Railroad Rack Lagoon Overflow Ditch and Fan-Out Area
SWMU No. 8 Subsurface Investigation Final Report
Western Refining Company Southwest, Inc., Gallup Refinery
EPA Id # NMD000333211 HWB-WRG-10-002"

Dear Ms. Van Horn:

The purpose of this letter is to respond to the New Mexico Environment Department's (NMED) *Direction for Additional Soil Confirmation Sample Collection and Approval of Extension Request, Railroad Rack Lagoon Overflow Ditch and Fan-Out Area, SWMU No. 8 Subsurface Investigation Final Report, Western Refining Company Southwest, Inc., Gallup Refinery EPA ID # NMD000333211 HWB-WRG-10-002* (Direction for Additional Sampling), dated July 28, 2010. The *Railroad Rack Lagoon Overflow Ditch and Fan-Out Area, SWMU No. 8, Subsurface Investigation Final Report* (Report) was submitted on behalf of Western Refining Company Southwest Inc., Gallup Refinery (Western) on January 6, 2010. NMED issued comments to the Report in a *Notice of Disapproval* (NOD), dated May 12, 2010. Western responded to NMED's NOD comments in a correspondence dated June 22, 2010. NMED's July 28 Direction for Additional Sampling was issued in response to Western's June 22 correspondence.

In the Direction for Additional Sampling, NMED requested that Western collect 11 additional confirmation samples to confirm that soil exceeding NMED's Diesel Range Organic (DRO) clean up standard of 890 mg/kg has been removed from the Fan-Out Area. Western agrees to collect the additional confirmation samples at the NMED-proposed locations. Western assumes that NMED's other NOD comments have been adequately addressed in Western's June 22 correspondence. Previously approved sample collection techniques (i.e. collecting samples using a hand auger, spade, or back hoe bucket) will be utilized.

NMED requested that additional sampling be conducted and the revised Report be submitted on or before September 30, 2010. If the results of the additional confirmation sampling are below the clean up standard, Western should be able to meet this deadline. However, if confirmation sampling suggests that additional excavation is required, an additional extension may be needed. Should this situation arise,

Western will contact NMED to discuss the volume of soil requiring excavation and the time needed to perform this work.

Western has begun making preparations for the additional confirmation sampling. The Report will be revised to include the results of the additional confirmation sampling. Other Report revisions described in Western's June 22 correspondence will also be made. The revised Report will be accompanied by a response letter detailing where revisions have been made, cross-referencing NMED's numbered comments. A redline-strikeout version that includes changes and edits to the report (electronic copy) will also be submitted.

If you have any questions, or if we can be of further service to you, please do not hesitate to call me at (505) 722-0217.

Sincerely,
Western Refining Company

Ed Riege
Environmental Superintendent

Attachments

c: H. Monzeglio NMED HWB
C. Chavez, OCD

APPENDIX L

PHOTO DOCUMENTATION

APPENDIX G. PHOTO DOCUMENTATION
GALLUP REFINERY, GALLUP, NEW MEXICO

Photo 1. B9 - Before 2 foot sample location

Photo 2. B9 - 2 foot sample hole with hand auger

Photo 3. B8 - Before 2 foot sample location

Photo 4. B8 - 2 foot sample hole with hand auger

Photo 5. B7 - Before 2 foot sample location

Photo 6. B7 - 2 foot sample hole with hand auger

Photo 7. B9 - 5 foot sample location with hand auger

Photo 8. B8 - 5 foot sample location with hand auger

Photo 9. B8 - 4 foot hole with hand auger, whiteboard, samples

Photo 10. B9 - 4 foot hole with hand auger, whiteboard, samples

Photo 11. B7 - 4 foot hole, whiteboard, samples

Photo 12. Original stake B8 looking North

Photo 13. Original stake B9 looking North

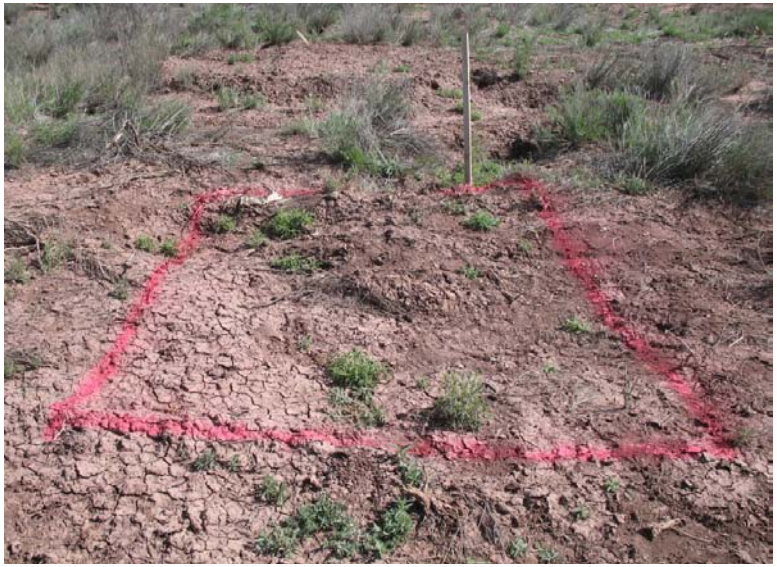


Photo 14. Excavation boundary at B8 looking North

Photo 15. Excavation boundary at B9 (9' x 7') with stakes (4' x 6')

Photo 16. B8 sample locations/spoil pile

Photo 17. B9 sample locations/spoil pile

Photo 18. B8 - Black staining (intact)

Photo 19. B8 - Black staining broken (not evident on fresh surface)

Photo 20. B8 - Showing original Southwest corner and B8 new

Photo 21. B8 - Regina "cleaning" B8 new NE to collect undisturbed sample (3')

Photo 22. B8 new NE ' - Sample collection/clean surface

Photo 23. B8 new NE 5' - Sample collection procedure with geoprobe

Photo 24. B8 new NE 5' - Sample on whiteboard: first half

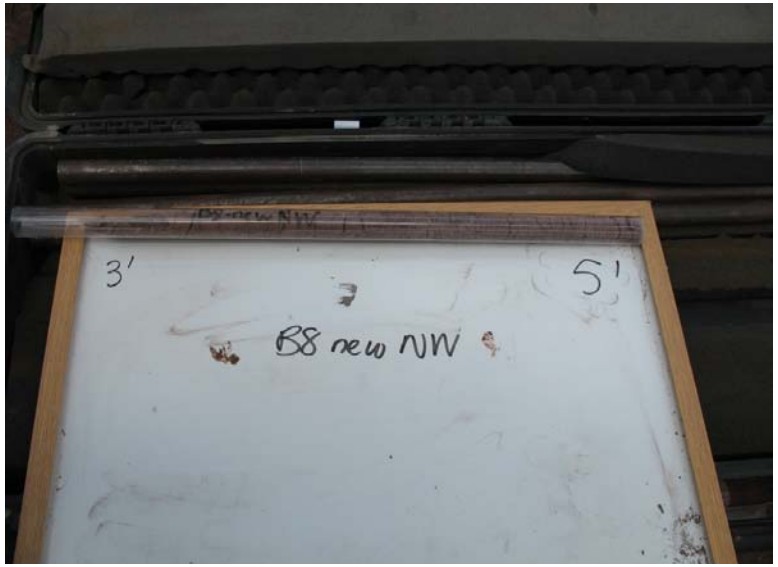


Photo 25. B8 new NW 5' - Sample on whiteboard: first half

Photo 26. B8 new SE 5' - Sample on whiteboard: first half

Photo 27. B9 Center - Sample with geoprobe

Photo 28. B9 new Center 5' - Sample on whiteboard: first half

Photo 29. B8 new SE S1 - 0' to 2' bgs

Photo 30. B8 new SE S1 - 2' to 4' bgs

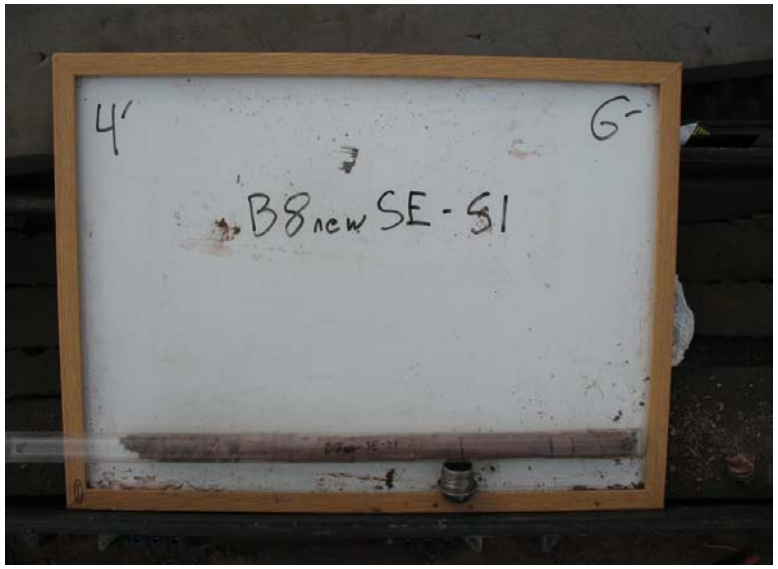


Photo 31. B8 new SE S1 - 4' to 6' bgs

Photo 32. B8 new SE S2 - 0' to 2' bgs

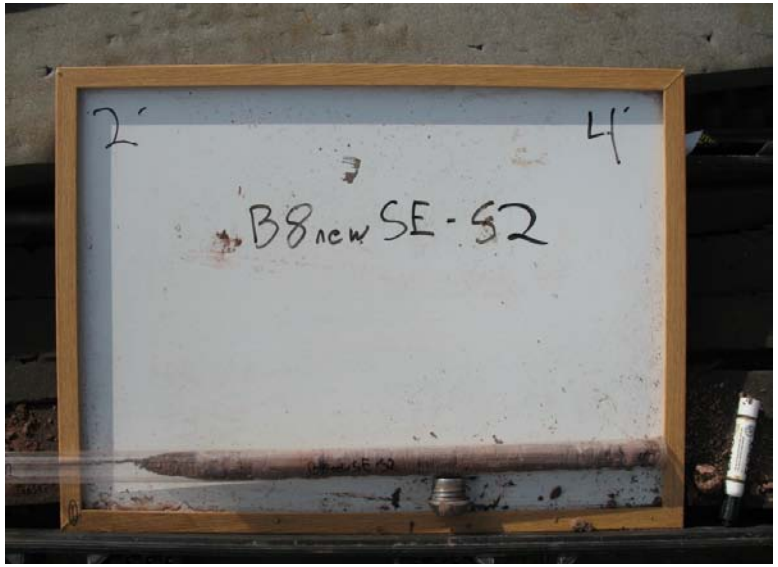


Photo 33. B8 new SE S2 - 2' to 4' bgs

Photo 34. B8 new SE S2 - 4' to 6'

Photo 35. B8 new - Excavated to 5' bgs, shovel in picture is 4' 9", 51/52 stakes in place

Photo 36. B9 new - Excavated to 5' bgs, shovel in picture is 4' 9"

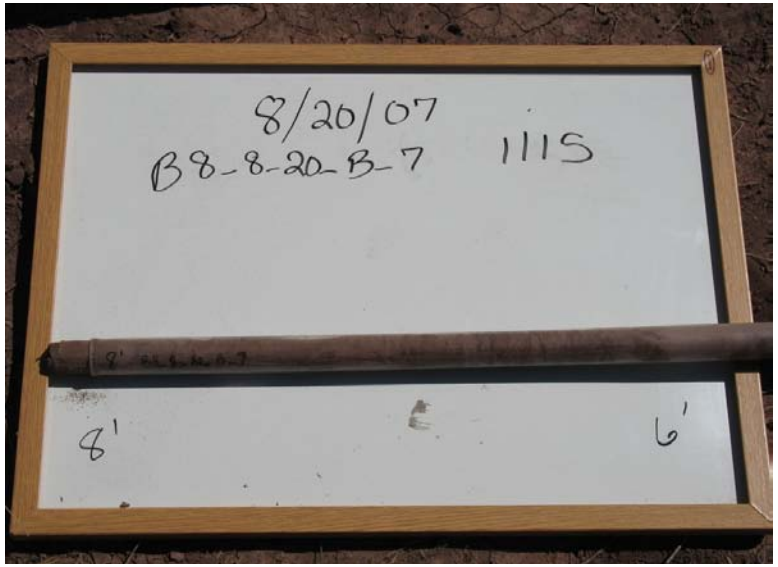


Photo 37. B8_8_20_B_7 - 6' to 8' bgs

Photo 38. B8_8_20_B_9 - 8' to 10' bgs (missing "B" on whiteboard)

Photo 39. B8_8_20_D - 0' to 2' bgs

Photo 40. B8_8_20_D - 2' to 4' bgs

Photo 41. B8_8_20_D_5' - 4' to 6' bgs

Photo 42. B8_8_20_D_7' - 6' to 8' bgs

Photo 43. B8_8_20_C - 0' to 2' bgs

Photo 44. B8_8_20_C - 2' to 4' bgs

Photo 45. B8_8_20_C - 4' to 6' bgs

Photo 46. B8_8_20_C - 6' to 8' bgs

Photo 47. B8_8_20_A - 5' to 6' bgs

Photo 48. B8_8_20_A - 6' to 8' bgs

Photo 49. B8_8_20_A - 8' to 10' bgs

Photo 50. B8_8_20_E - 0' to 2' bgs

Photo 51. B8_8_20_E - 2' to 4' bgs

Photo 52. B8_8_20_E - 4' to 6' bgs

Photo 53. B8_8_20_E - 0' to 2' bgs

Photo 54. B8_8_20_E - 2' to 4' bgs

Photo 55. B8_8_20_E - 4' to 6' bgs

Photo 56. B8_8_20_G - 0' to 2' bgs

Photo 57. B8_8_20_G - 2' to 4' bgs

Photo 58. B8_8_20_G - 6' to 8' bgs

Photo 59. B8_8_20_M - 0' to 2' bgs

Photo 60. B8_8_20_M - 2' to 4'bgs

Photo 61. B8_8_20_M - 4' to 6' bgs

Photo 62. B8_8_20_K - 0' to 2' bgs

Photo 63. B8_8_20_K - 2' to 4' bgs

Photo 64. B8_8_20_K - 4' to 6' bgs

Photo 65. B8_8_21_J - 0' to 2' bgs, 11" base

Photo 66. B8_8_21_J - 2' to 4' bgs

Photo 67. B8_8_21_J - 4' to 6' bgs

Photo 68. All stakes but 3 under spoil pile

Photo 69. B8_8_21_I - 0' to 2' bgs

Photo 70. B8_8_20_I - 2' to 4' bgs

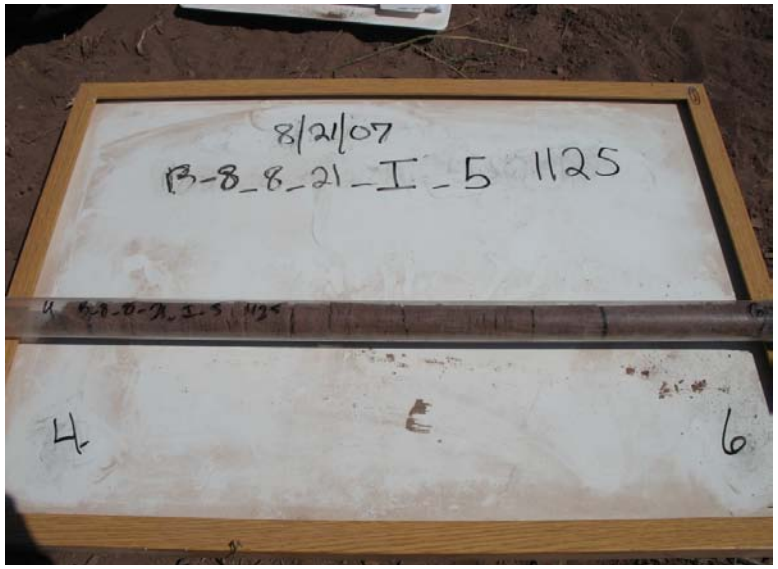


Photo 71. B8_8_20_I - 4' to 6' bgs

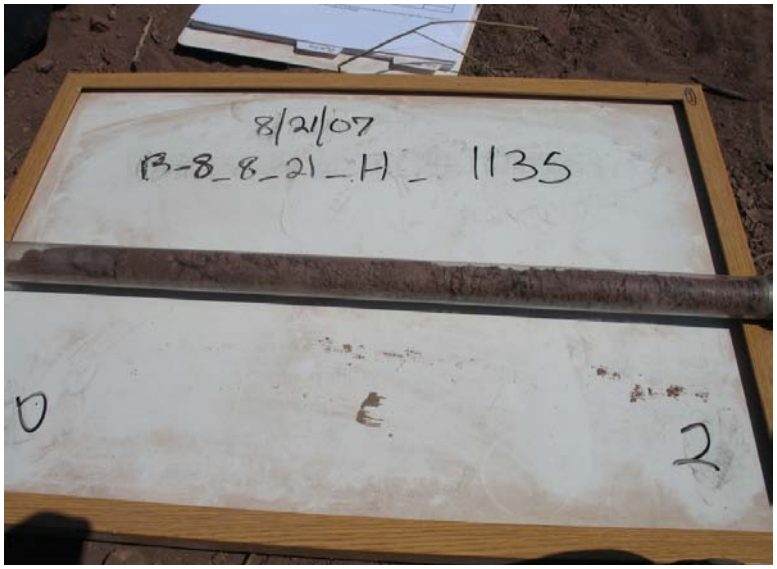


Photo 72. B8_8_21_H - 0' to 2' bgs

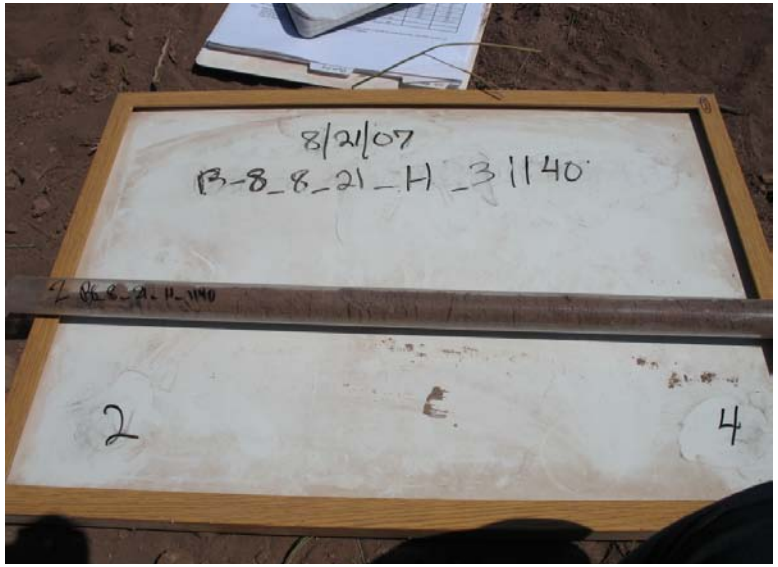


Photo 73. B8_8_21_H - 2' to 4' bgs

Photo 74. B8_8_21_H - 4' to 6' bgs

Photo 75. B8_8_21_L - 0' to 2' bgs

Photo 76. B8_8_21_L - 2' to 4' bgs

Photo 77. B8_8_21_L - 4' to 6' bgs

Photo 78. Final picture of all stakes

Photo 79. B8_12_17_B_8 - 8 feet bgs

Photo 80. B8_12_17_B_13 - 13 feet bgs

Photo 81. B8_12_17_B_18 - 18 feet bgs

Photo 82. B8_12_17_B_23 - 23 feet bgs

Photo 83. B8_12_17_M1_3 - 3 feet bgs

Photo 84. B8_12_17_M1_8 - 8 feet bgs

Photo 85. B8_12_17_M1_13 - 13 feet bgs

Photo 86. B8_12_17_I1_3 - 3 feet bgs

Photo 87. B8_12_17_I1_8 - 8 feet bgs

Photo 88. B8_12_17_I1_13 - 13 feet bgs

Photo 89. B8_12_17_G1_3 - 3 feet bgs

Photo 90. B8_12_17_G1_8 - 8 feet bgs

Photo 91. B8_12_17_G1_13 - 13 feet bgs

Photo 92. B8_12_17_K1_3 - 3 feet bgs

Photo 93. B8_12_17_K1_8 - 8 feet bgs

Photo 94. B8_12_17_K1_13 - 13 feet bgs

Photo 95. Looking North, excavation before work began

Photo 96. Looking Northwest and down, showing 13' markings

Photo 97. Looking Northwest, showing 5' and 13' markings

Photo 98. Looking North, showing 3', 5', and 13' markings

Photo 99. Sample CS-2 at 1450

Photo 100. Sample CS-1 at 1610; denoted as C-1 in photo

Photo 101. Looking Northwest, 5' remarked excavation prior to excavation

Photo 102. Sample CS-3

Photo 103. Sample CS-4

Photo 104. Looking North, 3' excavation markings

Photo 105. Sample CS-6 at 1705

Photo 106. Sample CS-9

Photo 107. Looking North, additional excavation area 7' and extended 3' areas are marked

Photo 108. Sample CS-8 on whiteboard at 1305

Photo 109. Sample CS-15 on whiteboard at 1312

Photo 110. Sample CS-14 on whiteboard at 1328

Photo 111. Sample CS-17 on whiteboard at 1610

Photo 112. North wall of 13' excavation - potential staining

Photo 113. Sample CS-16, 13' at 1325

Photo 114. Sample CS-11 on whiteboard at 1520

Photo 115. Sample CS-5 on whiteboard at 1540

Photo 116. Sample CS-10 on whiteboard at 1630

Photo 117. Sample CS-7 on whiteboard at 1715

Photo 118. Sample CS-12 on whiteboard at 1733

Photo 119. Sample CS-16 on whiteboard at 1515

Photo 120. Sample CS-18 on whiteboard at 1615

Photo 121. Sample CS-19 on whiteboard at 1625

Photo 122. Looking North; excavation as of 1630 4/23/09; excavating extra 7' area

Photo 123. Looking South; excavation as of 1630 4/23/09; excavating extra 7' area

Photo 124. Looking down and South; excavation, showing closer view of 13', 7', and 3' area

Photo 125. Sample CS-20 in backhoe bucket

Photo 126. Sample CS-20 on whiteboard

Photo 127. Sample CS-21 in backhoe bucket

Photo 128. Sample CS-21 on whiteboard

Photo 129. Excavation with updated stake markers looking North

Photo 130. Excavation with updated stake markers looking North

Photo 131. Excavation with updated stake markers looking North-Northwest

Photo 132. Excavation pit looking East showing excavation area for CS-22 through CS-24

Photo 133. Stitch assist photo of excavation looking East

Photo 134. Stitch assist photo of excavation looking East

Photo 135. Stitch assist photo of excavation looking East-Southeast

Photo 136. Stitch assist photo of excavation looking East-Southeast

Photo 137. Sample CS-22 on whiteboard

Photo 138. Sample CS-23 on whiteboard

Photo 139. Sample CS-24 on whiteboard

Photo 140. CS-25 sample location

Photo 141. CS-25 soil

Photo 142. CS-26 sample location

Photo 143. CS-26 soil

Photo 144. CS-27 sample location

Photo 145. CS-27 soil

Photo 146. CS-28 sample location

Photo 147. CS-28 soil

Photo 148. Final excavation looking south

Photo 149. Final excavation looking southeast

Photo 150. Final excavation looking east

Photo 151. Final excavation looking northeast

Photo 152. Final excavation looking north

Photo 153. Final excavation looking northwest

Photo 154. Final excavation looking west

Photo 155. Final excavation looking southwest

Photo 156. Fan-Out Area, pre-August 2010 sampling, looking north

Photo 157. Fan-Out Area, pre-August 2010 sampling, looking south

Photo 158. Collecting Confirmation Soil Sample CS-36, looking west

Photo 159. Collecting Confirmation Soil Sample CS-38, looking northeast

Photo 160. Collecting Confirmation Soil Sample CS-39, looking north

Photo 161. Collecting Confirmation Soil Sample CS-40, looking northwest

Photo 162. Collecting Confirmation Soil Sample CS-42, looking north

Photo 163. Collecting Confirmation Soil Sample CS-41, looking southwest

Photo 164. Collecting Confirmation Soil Sample CS-33, looking south

Photo 165. Collecting Confirmation Soil Sample CS-32, looking north

Photo 166. Collecting Confirmation Soil Sample CS-34, looking northeast

Photo 167. Collecting Confirmation Soil Sample CS-37, looking southeast

Photo 168. Collecting Confirmation Soil Sample CS-35, looking north

APPENDIX M

NMED CLEANUP STANDARDS

A TPH screening guideline was calculated for each of the types of petroleum product based on the assumed composition from Table 1 for petroleum products and the direct soil standards incorporating ceiling concentrations given in the MADEP VPH/EPH Excel spreadsheet for each of the carbon fractions. Groundwater concentrations are based on the weighted sum of the noncarcinogenic toxicity of the petroleum fractions.

Method 1 from the MADEP VPH/EPH document was applied, which represents generic cleanup standards for soil and groundwater. Method 1 applies if contamination exists in only soil and groundwater. The MADEP VPH/EPH further divides groundwater into standards. Standard GW-1 applies when groundwater may be used for drinking water purposes. GW-1 standards are based upon ingestion and use of groundwater as a potable water supply. The TPH screening guidelines for sites with potable groundwater are presented in Table 2a.

Table 2a. TPH Screening Guidelines for Potable Groundwater (GW-1)

TPH			Concentration in Groundwater (mg/L)
Petroleum Product	**Residential Direct Exposure (mg/kg)**	**Industrial Direct Exposure (mg/kg)**	
Diesel #2/crankcase oil	520	1120	1.72
#3 and #6 Fuel Oil	440	890	1.34
Kerosene and jet fuel	760	1810	2.86
Mineral oil dielectric fluid	1440	3040	3.64
Unknown oil [a]	200	200	0.2
Waste Oil [b]	2500	5000	Petroleum-Related Contaminants
Gasoline	Not applicable	Not applicable	Petroleum-Related Contaminants

[a] Sites with oil from unknown sources must be tested for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, and polychlorinated biphenyls (PCBs) to determine if other potentially toxic constituents are present. The TPH guidelines in Table 2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.

[b] Compositional assumption for waste oil developed by NMED is based on review of chromatographs of several types of waste oil. Sites with waste oil must be tested for VOCs, SVOCs, metals, and PCBs to determine if other potentially toxic constituents are present. The TPH guidelines in Table 2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.

The second standard is GW-2, which is applicable for sites where the depth to groundwater is less than 15 feet from the ground surface and within 30 feet of an occupied structure. The structure may be either residential or industrial. GW-2 standards are based upon "inhalation exposures that could occur to occupants of the building impacted by volatile compounds, which partition from the groundwater" (MADEP 2001). The GW-2 screening guidelines ONLY apply for the evaluation of inhalation exposures. If potential ingestion or contact with contaminated soil and/or

Table A-1: NMED Soil Screening Levels

Chemical	Residential Soil (mg/kg)	End-point	Industrial/ Occupational Soil (mg/kg)	End-point	Construction Worker Soil (mg/kg)	End-point	VOC	Tap Water (ug/L)	End-point	DAF 1 (mg/kg)	DAF 20 (mg/kg)
Acenaphthene	3.73E+03	nc	3.35E+04	nc	1.41E+04	nc	x	3.65E+02	nc	2.75E+00	5.49E+01
Acetaldehyde	1.06E+02	nc	3.84E+02	nc	3.45E+02	nc	x	1.72E+01	ca		
Acetone	2.81E+04	nc	1.00E+05	max	9.85E+04	nc	x	5.48E+03	nc	9.55E-01	1.91E+01
Acrylonitrile	4.27E+00	ca	1.26E+01	ca	5.75E+01	nc	x	3.81E-01	ca	6.68E-05	1.34E-03
Acetophenone	1.48E+03	sat	1.48E+03	sat	1.48E+03	sat	x	6.08E+02	nc	1.48E-01	2.95E+00
Acrolein	2.06E-01	nc	7.52E-01	nc	6.75E-01	nc	x	4.16E-02	nc	8.55E-06	1.71E-04
Aldrin	2.84E-01	ca	1.12E+00	ca	6.99E+00	nc		3.87E-02	ca	1.42E-01	2.84E+00
Aluminum	7.78E+04	nc	1.00E+05	max	1.44E+04	nc		3.65E+04	nc	5.48E+04	1.10E+06
Anthracene	2.20E+04	nc	1.00E+05	max	8.60E+04	nc	x	1.83E+03	nc	8.11E+01	1.62E+03
Antimony	3.13E+01	nc	4.54E+02	nc	1.24E+02	nc		1.46E+01	nc	6.61E-01	1.32E+01
Arsenic	3.90E+00	ca	1.77E+01	ca	8.52E+01	nc		4.42E-01	ca	1.45E-02	2.90E-01
Barium	1.56E+04	nc	1.00E+05	max	6.02E+04	nc		7.30E+03	nc	3.01E+02	6.03E+03
Benzene	1.03E+01	ca	2.58E+01	ca	1.74E+02	nc	x	3.49E+00	ca	1.00E-03	2.01E-02
Benzidine	2.11E-02	ca	8.33E-02	ca	7.09E-01	ca		2.89E-03	ca	1.24E-05	2.47E-04
Benzo(a)anthracene	6.21E+00	ca	2.34E+01	ca	2.12E+02	ca		9.09E-01	ca	5.43E-01	1.09E+01
Benzo(a)pyrene	6.21E-01	ca	2.34E+00	ca	2.12E+01	ca		9.09E-02	ca	1.39E-01	2.78E+00
Benzo(b)fluoranthene	6.21E+00	ca	2.34E+01	ca	2.12E+02	ca		9.09E-01	ca	1.68E+00	3.35E+01
Benzo(k)fluoranthene	6.21E+01	ca	2.34E+02	ca	2.12E+03	ca		9.09E+00	ca	1.68E+01	3.35E+02
Beryllium	1.56E+02	nc	2.25E+03	nc	5.62E+01	nc		7.30E+01	nc	5.77E+01	1.15E+03
a-BHC (HCH)	9.02E-01	ca	3.99E+00	ca	3.00E+01	ca		1.05E-01	ca	2.13E-04	4.25E-03
b-BHC (HCH)	3.16E+00	ca	1.40E+01	ca	5.39E+01	nc		3.69E-01	ca	7.61E-04	1.52E-02
g-BHC	4.37E+00	ca	1.93E+01	ca	8.09E+01	nc		5.10E-01	ca	9.08E-04	1.82E-02
1,1-Biphenyl	3.08E+03	nc	2.73E+04	nc	1.17E+04	nc	x	3.04E+02	nc	3.61E+00	7.22E+01
Bis(2-chloroethyl) ether	2.44E+00	ca	7.45E+00	ca	1.05E+02	ca	x	9.65E-02	ca	2.77E-05	5.55E-04
Bis(2-chloroisopropyl) ether	3.87E+01	ca	1.19E+02	ca	4.53E+02	sat	x	2.71E+00	ca	7.21E-04	1.44E-02
Bis(2-ethylhexyl) phthalate	3.47E+02	ca	1.37E+03	ca	4.66E+03	nc		4.74E+01	ca	1.07E+03	2.15E+04
Bis(chloromethyl) ether	4.72E-03	ca	1.23E-02	ca	2.32E-01	ca	x	5.09E-04	ca	8.95E-08	1.79E-06
Boron	1.56E+04	nc	1.00E+05	max	3.09E+04	nc		7.30E+03	nc	2.40E+01	4.80E+02
Bromobenzene	3.70E+01	nc	1.37E+02	nc	1.21E+02	nc	x	2.06E+01	nc	1.07E-02	2.14E-01
Bromodichloromethane	1.44E+01	ca	3.72E+01	ca	7.17E+02	ca	x	1.78E+00	ca	5.90E-04	1.18E-02

Chemical	Residential Soil (mg/kg)	End-point	Industrial/ Occupational Soil (mg/kg)	End-point	Construction Worker Soil (mg/kg)	End-point	VOC	Tap Water (ug/L)	End-point	DAF 1 (mg/kg)	DAF 20 (mg/kg)
Bromomethane	8.51E+00	nc	3.28E+01	nc	2.82E+01	nc	x	8.66E+00	nc	1.87E-03	3.74E-02
1,3-Butadiene	9.93E-01	ca	2.38E+00	ca	4.59E+00	nc	x	1.26E+00	ca		
2-Butanone (MEK)	3.18E+04	nc	4.87E+04	sat	4.87E+04	sat	x	7.06E+03	nc	1.27E+00	2.55E+01
tert-Butyl methyl ether (MTBE)	3.88E+02	ca	9.84E+02	ca	1.96E+04	ca	x	6.14E+01	ca		
n-Butylbenzene	6.21E+01	sat	6.21E+01	sat	6.21E+01	sat	x	6.08E+01	nc	2.70E-01	5.40E+00
sec-Butylbenzene	6.06E+01	sat	6.06E+01	sat	6.06E+01	sat	x	6.08E+01	nc	2.17E-01	4.33E+00
tert-Butylbenzene	1.06E+02	sat	1.06E+02	sat	1.06E+02	sat	x	6.08E+01	nc	2.15E-01	4.30E+00
Cadmium	3.90E+01	nc	5.64E+02	nc	1.54E+02	nc		1.83E+01	nc	1.37E+00	2.75E+01
Carbon disulfide	4.60E+02	sat	4.60E+02	sat	4.60E+02	sat	x	1.04E+03	nc	3.95E-01	7.89E+00
Carbon tetrachloride	3.47E+00	ca	8.64E+00	ca	1.80E+02	ca	x	1.69E+00	ca	9.74E-04	1.95E-02
Chlordane	1.62E+01	ca	7.19E+01	ca	1.30E+02	nc		1.90E+00	ca	3.42E-01	6.83E+00
2-Chloroacetophenone	4.25E-02	nc	1.62E-01	nc	1.41E-01	nc	x	5.22E-02	nc	4.37E-05	8.75E-04
2-Chloro-1,3-butadiene	6.32E+00	nc	2.30E+01	nc	2.06E+01	nc	x	1.43E+01	nc	5.66E-03	1.13E-01
1-Chloro-1,1-difluoroethane	2.11E+02	sat	2.11E+02	sat	2.11E+02	sat	x	8.66E+04	nc	6.28E+01	1.26E+03
Chlorobenzene	1.94E+02	nc	2.45E+02	sat	2.45E+02	sat	x	1.06E+02	nc	5.50E-02	1.10E+00
1-Chlorobutane	1.22E+02	nc	2.99E+02	sat	2.99E+02	sat	x	2.43E+02	nc	9.63E-02	1.93E+00
Chlorodifluoromethane	2.11E+02	sat	2.11E+02	sat	2.11E+02	sat	x	9.75E+04	nc	7.07E+01	1.41E+03
Chloroethane	6.33E+01	ca	1.54E+02	ca	1.42E+03	sat	x	3.81E+01	ca	9.41E-03	1.88E-01
Chloroform	4.00E+00	ca	9.59E+00	ca	2.16E+02	ca	x	1.65E+00	ca	4.12E-04	8.25E-03
Chloromethane	2.18E+01	ca	5.34E+01	ca	2.84E+02	nc	x	1.49E+01	ca	5.02E-03	1.00E-01
b-Chloronaphthalene	3.99E+03	nc	2.78E+04	nc	1.47E+04	nc	x	4.87E+02	nc	1.25E+00	2.51E+01
o-Chloronitrobenzene	1.49E+00	nc	5.48E+00	nc	4.88E+00	nc	x	1.45E-01	nc	3.94E-05	7.88E-04
p-Chloronitrobenzene	1.05E+01	nc	4.23E+01	nc	3.51E+01	nc	x	1.20E+00	nc	3.25E-04	6.51E-03
2-Chlorophenol	1.66E+02	nc	8.85E+02	nc	5.86E+02	nc	x	3.04E+01	nc	2.36E-02	4.72E-01
2-Chloropropane	2.83E+02	nc	7.05E+02	sat	7.05E+02	sat	x	1.76E+02	nc	4.60E-02	9.19E-01
o-Chlorotoluene	2.02E+02	sat	2.02E+02	sat	2.02E+02	sat	x	1.22E+02	nc	5.22E-02	1.04E+00
Chromium III	1.00E+05	max	1.00E+05	max	1.00E+05	max		5.48E+04	nc	9.86E+07	1.97E+09
Chromium VI	2.34E+02	nc	3.40E+03	nc	2.61E+01	ca		1.10E+02	nc	2.10E+00	4.20E+01
Chrysene	6.15E+02	ca	2.31E+03	ca	2.12E+04	ca	x	2.91E+01	ca	1.74E+01	3.48E+02
Cobalt	1.52E+03	nc	2.05E+04	nc	6.10E+01	nc		7.30E+02	nc	3.31E+01	6.61E+02
Copper	3.13E+03	nc	4.54E+04	nc	1.24E+04	nc		1.46E+03	nc	5.15E+01	1.03E+03
Crotonaldehyde	7.01E-02	ca	1.70E-01	ca	3.73E+00	ca	x	5.82E-02	ca	1.49E-04	2.99E-03

Chemical	Residential Soil (mg/kg)	End-point	Industrial/ Occupational Soil (mg/kg)	End-point	Construction Worker Soil (mg/kg)	End-point	VOC	Tap Water (ug/L)	End-point	DAF 1 (mg/kg)	DAF 20 (mg/kg)
Cumene (isopropylbenzene)	2.71E+02	nc	3.89E+02	sat	3.89E+02	sat	x	6.78E+02	nc	4.10E+00	8.21E+01
Cyanide	1.22E+03	nc	1.37E+04	nc	4.76E+03	nc		7.30E+02	nc	7.35E+00	1.47E+02
Cyanogen	1.71E+03	sat	1.71E+03	sat	1.71E+03	sat	x	1.46E+03	nc	2.91E-01	5.82E+00
Cyanogen bromide	2.02E+03	sat	2.02E+03	sat	2.02E+03	sat	x	3.29E+03	nc	7.76E-01	1.55E+01
Cyanogen chloride	2.02E+03	sat	2.02E+03	sat	2.02E+03	sat	x	1.83E+03	nc	4.31E-01	8.62E+00
DDD	2.44E+01	ca	1.11E+02	ca	8.07E+02	ca		2.77E+00	ca	4.15E+00	8.30E+01
DDE	1.72E+01	ca	7.81E+01	ca	5.70E+02	ca		1.95E+00	ca	1.31E+01	2.62E+02
DDT	1.72E+01	ca	7.81E+01	ca	1.38E+02	nc		1.95E+00	ca	7.70E+00	1.54E+02
Dibenz(a,h)anthracene	6.21E-01	ca	2.34E+00	ca	2.12E+01	ca		9.09E-02	ca	5.18E-01	1.04E+01
Dibenzofuran	1.42E+02	nc	1.62E+03	nc	5.52E+02	nc	x	1.22E+01	nc	1.44E-01	2.87E+00
1,2-Dibromo-3-chloropropane	1.84E+00	nc	9.68E+00	nc	6.48E+00	nc	x	3.47E-01	nc	1.49E-04	2.98E-03
Dibromochloromethane	1.48E+01	ca	3.95E+01	ca	7.16E+02	ca	x	1.32E+00	ca	3.58E-04	7.16E-03
1,2-Dibromoethane	5.04E-01	ca	1.31E+00	ca	2.48E+01	ca	x	5.53E-02	ca	1.20E-05	2.40E-04
1,4-Dichloro-2-butene	1.22E-01	ca	3.23E-01	ca	5.97E+00	ca	x	1.19E-02	ca	2.93E-06	5.87E-05
1,2-Dichlorobenzene	3.74E+01	sat	3.74E+01	sat	3.74E+01	sat	x	4.96E+01	nc	1.19E-02	2.37E-01
1,3-Dichlorobenzene	3.26E+01	nc	3.74E+01	sat	3.74E+01	sat	x	1.83E+01	nc	4.36E-03	8.73E-02
1,4-Dichlorobenzene	3.95E+01	ca	1.03E+02	ca	1.96E+03	ca	x	4.95E+00	ca	5.49E-03	1.10E-01
3,3-Dichlorobenzidine	1.08E+01	ca	4.26E+01	ca	3.63E+02	ca		1.47E+00	ca	1.86E-03	3.71E-02
Dichlorodifluoromethane	1.61E+02	nc	2.11E+02	sat	2.11E+02	sat	x	3.95E+02	nc	2.86E-01	5.72E+00
1,1-Dichloroethane	1.40E+03	nc	1.42E+03	sat	1.42E+03	sat	x	1.22E+03	nc	3.39E-01	6.79E+00
1,2-Dichloroethane	6.04E+00	ca	1.52E+01	ca	6.42E+01	nc	x	1.22E+00	ca	2.85E-04	5.71E-03
cis-1,2-Dichloroethene	7.65E+01	nc	3.00E+02	nc	2.54E+02	nc	x	6.08E+01	nc	1.49E-02	2.99E-01
trans-1,2-Dichloroethene	1.12E+02	nc	4.29E+02	nc	3.70E+02	nc	x	1.22E+02	nc	3.33E-02	6.67E-01
1,1-Dichloroethene	2.06E+02	nc	7.77E+02	nc	6.78E+02	nc	x	3.39E+02	nc	1.34E-01	2.68E+00
2,4-Dichlorophenol	1.83E+02	nc	2.05E+03	nc	6.99E+02	nc		1.10E+02	nc	4.31E-02	8.63E-01
1,2-Dichloropropane	6.00E+00	ca	1.49E+01	ca	3.33E+01	nc	x	1.63E+00	ca	4.10E-04	8.19E-03
1,3-Dichloropropene	1.20E+01	ca	3.17E+01	ca	8.98E+01	nc	x	3.90E+00	ca	1.16E-03	2.31E-02
Dicyclopentadiene	2.21E+01	nc	8.26E+01	nc	7.28E+01	nc	x	1.39E+01	nc	1.50E-02	3.00E-01
Dieldrin	3.04E-01	ca	1.20E+00	ca	1.02E+01	ca		4.15E-02	ca	1.34E-03	2.68E-02
Diethyl phthalate	4.89E+04	nc	1.00E+05	max	1.00E+05	max		2.92E+04	nc	1.77E+01	3.54E+02
Dimethyl phthalate	1.00E+05	max	1.00E+05	max	1.00E+05	max		3.65E+05	nc	8.36E+01	1.67E+03
Di-n-butyl phthalate	6.11E+03	nc	6.84E+04	nc	2.33E+04	nc		3.65E+03	nc	1.86E+02	3.72E+03

Chemical	Residential Soil (mg/kg)	End-point	Industrial/ Occupational Soil (mg/kg)	End-point	Construction Worker Soil (mg/kg)	End-point	VOC	Tap Water (ug/L)	End-point	DAF 1 (mg/kg)	DAF 20 (mg/kg)
2,4-Dimethylphenol	1.22E+03	nc	1.37E+04	nc	4.66E+03	nc		7.30E+02	nc	3.55E-01	7.11E+00
4,6-Dinitro-o-cresol	6.11E+00	nc	6.84E+01	nc	2.33E+01	nc		3.65E+00	nc	3.93E-03	7.85E-02
2,4-Dinitrophenol	1.22E+02	nc	1.37E+03	nc	4.66E+02	nc		7.30E+01	nc	5.25E-02	1.05E+00
2,4-Dinitrotoluene	1.22E+02	nc	1.37E+03	nc	4.66E+02	nc		7.30E+01	nc	2.31E-02	4.62E-01
1,2-Diphenylhydrazine	6.08E+00	ca	2.39E+01	ca	2.04E+02	ca		8.30E-01	ca	4.48E-03	8.95E-02
Endosulfan	3.67E+02	nc	4.10E+03	nc	1.40E+03	nc		2.19E+02	nc	7.41E-01	1.48E+01
Endrin	1.83E+01	nc	2.05E+02	nc	6.99E+01	nc		1.10E+01	nc	2.04E-01	4.08E+00
Epichlorohydrin	1.66E+01	nc	6.56E+01	nc	5.54E+01	nc	x	2.03E+00	nc	3.62E-04	7.25E-03
Ethyl acetate	2.10E+04	sat	2.10E+04	sat	2.10E+04	sat	x	5.48E+03	nc	1.44E+00	2.87E+01
Ethyl acrylate	2.79E+00	ca	6.75E+00	ca	5.22E+01	sat	x	2.30E+00	ca	5.86E-03	1.17E-01
Ethyl chloride	6.33E+01	ca	1.54E+02	ca	1.42E+03	sat	x	3.81E+01	ca	9.41E-03	1.88E-01
Ethyl ether	1.94E+03	sat	1.94E+03	sat	1.94E+03	sat	x	1.22E+03	nc	2.37E-01	4.73E+00
Ethyl methacrylate	5.27E+01	sat	5.27E+01	sat	5.27E+01	sat	x	5.48E+02	nc	1.41E+00	2.81E+01
Ethylbenzene	1.28E+02	sat	1.28E+02	sat	1.28E+02	sat	x	1.34E+03	nc	1.01E+00	2.02E+01
Ethylene oxide	2.65E+00	ca	8.07E+00	ca	1.15E+02	ca	x	2.41E-01	ca	4.27E-05	8.54E-04
Fluoranthene	2.29E+03	nc	2.44E+04	nc	8.73E+03	nc		1.46E+03	nc	2.35E+02	4.69E+03
Fluorene	2.66E+03	nc	2.65E+04	nc	1.02E+04	nc	x	2.43E+02	nc	2.93E+00	5.85E+01
Fluoride	3.67E+03	nc	4.10E+04	nc	1.43E+04	nc		2.19E+03	nc	3.29E+02	6.58E+03
Furan	5.53E+00	nc	2.12E+01	nc	1.83E+01	nc	x	6.08E+00	nc	1.32E-03	2.63E-02
Heptachlor	1.08E+00	ca	4.26E+00	ca	3.63E+01	ca		1.47E-01	ca	3.12E-01	6.24E+00
Hexachlorobenzene	3.04E+00	ca	1.20E+01	ca	1.02E+02	ca		4.15E-01	ca	3.43E-02	6.86E-01
Hexachloro-1,3-butadiene	1.22E+01	nc	1.37E+02	nc	4.66E+01	nc		7.30E+00	nc	5.90E-01	1.18E+01
Hexachlorocyclopentadiene	3.66E+02	nc	4.10E+03	nc	4.31E+02	nc		2.19E+02	nc	6.58E+01	1.32E+03
Hexachloroethane	6.11E+01	nc	6.84E+02	nc	2.33E+02	nc		3.65E+01	nc	1.04E-01	2.09E+00
n-Hexane	3.80E+01	sat	3.80E+01	sat	3.80E+01	sat	x	4.16E+02	nc	8.64E-01	1.73E+01
HMX	3.06E+03	nc	3.42E+04	nc	1.17E+04	nc		1.83E+03	nc	5.39E+00	1.08E+02
Hydrogen cyanide	2.24E+01	nc	8.22E+01	nc	7.33E+01	nc	x	6.20E+00	nc	1.24E-03	2.47E-02
Indeno(1,2,3-c,d)pyrene	6.21E+00	ca	2.34E+01	ca	2.12E+02	ca		9.09E-01	ca	4.73E+00	9.46E+01
Iron	2.35E+04	nc	1.00E+05	max	9.29E+04	nc		1.10E+04	nc	2.77E+02	5.54E+03
Isobutanol	1.38E+04	nc	2.26E+04	sat	2.26E+04	sat	x	1.83E+03	nc	4.86E-01	9.72E+00
Isophorone	5.12E+03	ca	2.02E+04	ca	4.66E+04	nc		6.99E+02	ca	1.70E-01	3.40E+00
Lead	4.00E+02	IEUBK	8.00E+02	IEUBK	8.00E+02	IEUBK					

Chemical	Residential Soil (mg/kg)	End-point	Industrial/ Occupational Soil (mg/kg)	End-point	Construction Worker Soil (mg/kg)	End-point	VOC	Tap Water (ug/L)	End-point	DAF 1 (mg/kg)	DAF 20 (mg/kg)
Lead (tetraethyl-)	6.11E-03	nc	6.84E-02	nc	2.38E-02	nc		3.65E-03	nc	6.33E-07	1.27E-05
Maleic hydrazide	1.61E+03	sat	1.61E+03	sat	1.61E+03	sat	x	3.04E+03	nc	8.12E-01	1.62E+01
Manganese	3.59E+03	nc	4.84E+04	nc	1.50E+02	nc		1.72E+03	nc	1.12E+02	2.24E+03
Mercury (elemental)	1.00E+05	max	1.00E+05	max	9.27E+02	nc				1.05E-01	2.09E-03
Mercury (methyl)	6.11E+00	nc	6.84E+01	nc	2.38E+01	nc		3.65E+00	nc	8.26E-04	1.65E-02
Methacrylonitrile	3.84E+00	nc	2.20E+01	nc	1.37E+01	nc	x	1.04E+00	nc	1.83E-04	3.65E-03
Methomyl	8.44E+01	nc	3.17E+02	nc	2.78E+02	nc	x	1.52E+02	nc	5.74E-02	1.15E+00
Methyl acetate	3.76E+04	nc	1.00E+05	max	1.00E+05	max	x	6.08E+03	nc	1.08E+00	2.15E+01
Methyl acrylate	9.28E+01	nc	1.57E+02	sat	1.57E+02	sat	x	1.83E+02	nc	4.64E-01	9.29E+00
Methyl isobutyl ketone	5.51E+03	nc	7.01E+03	sat	7.01E+03	sat	x	1.99E+03	nc	7.35E-01	1.47E+01
Methyl methacrylate	2.92E+03	sat	2.92E+03	sat	2.92E+03	sat	x	1.42E+03	nc	2.76E-01	5.52E+00
Methyl styrene (alpha)	2.17E+02	sat	2.17E+02	sat	2.17E+02	sat	x	4.26E+02	nc	3.08E-01	6.17E+00
Methyl styrene (mixture)	1.39E+02	nc	2.17E+02	sat	2.17E+02	sat	x	5.48E+01	nc	3.96E-02	7.93E-01
Methylcyclohexane	7.89E+01	sat	7.89E+01	sat	7.89E+01	sat	x	5.23E+03	nc	2.88E+01	5.77E+02
Methylene bromide	1.79E+02	nc	7.85E+02	nc	6.09E+02	nc	x	6.08E+01	nc	2.72E-02	5.44E-01
Methylene chloride	1.82E+02	ca	4.90E+02	ca	2.63E+03	sat	x	4.22E+01	ca	8.51E-03	1.70E-01
Molybdenum	3.91E+02	nc	5.68E+03	nc	1.55E+03	nc		1.83E+02	nc	3.70E+00	7.40E+01
Naphthalene	7.95E+01	nc	3.00E+02	nc	2.62E+02	nc	x	6.20E+00	nc	1.97E-02	3.94E-01
Nickel	1.56E+03	nc	2.27E+04	nc	6.19E+03	nc		7.30E+02	nc	4.77E+01	9.53E+02
Nitrate	1.00E+05	max	1.00E+05	max	1.00E+05	max		5.84E+04	nc	1.67E+01	3.35E+02
Nitrite	7.82E+03	nc	1.00E+05	max	3.10E+04	nc		3.65E+03	nc	7.63E-01	1.53E+01
Nitrobenzene	2.28E+01	nc	1.47E+02	nc	8.28E+01	nc	x	3.40E+00	nc	9.18E-04	1.84E-02
Nitroglycerin	3.47E+02	ca	1.37E+03	ca	1.17E+04	ca		4.74E+01	ca	2.80E-02	5.61E-01
N-Nitrosodiethylamine	3.24E-02	ca	1.28E-01	ca	1.09E+00	ca		4.42E-03	ca	8.73E-06	1.75E-04
N-Nitrosodimethylamine	9.54E-02	ca	3.76E-01	ca	1.86E+00	nc		1.30E-02	ca	1.17E-05	2.34E-04
N-Nitrosodi-n-butylamine	2.69E-01	ca	7.28E-01	ca	1.24E+01	ca	x	1.99E-02	ca	1.12E-05	2.24E-04
N-Nitrosodiphenylamine	9.93E+02	ca	3.91E+03	ca	4.66E+03	nc		1.35E+02	ca	2.86E-01	5.71E+00
N-Nitrosopyrrolidine	2.32E+00	ca	9.12E+00	ca	7.77E+01	ca		3.16E-01	ca	1.30E-04	2.60E-03
m-Nitrotoluene	5.69E+02	sat	5.69E+02	sat	5.69E+02	sat	x	1.22E+02	nc	3.30E-02	6.59E-01
o-Nitrotoluene	1.08E+01	ca	3.23E+01	ca	4.73E+02	ca	x	4.81E-01	ca	1.30E-04	2.61E-03
p-Nitrotoluene	1.46E+02	ca	4.37E+02	ca	1.55E+03	nc	x	6.51E+00	ca	1.76E-03	3.53E-02
Pentachlorobenzene	4.89E+01	nc	5.47E+02	nc	1.86E+02	nc		2.92E+01	nc	9.37E-02	1.87E+00

Chemical	Residential Soil (mg/kg)	End-point	Industrial/ Occupational Soil (mg/kg)	End-point	Construction Worker Soil (mg/kg)	End-point	VOC	Tap Water (ug/L)	End-point	DAF 1 (mg/kg)	DAF 20 (mg/kg)
Pentachlorophenol	2.98E+01	ca	1.00E+02	ca	1.02E+03	ca		5.53E+00	ca	5.87E-03	1.17E-01
Phenanthrene	1.83E+03	nc	2.05E+04	nc	6.99E+03	nc		1.10E+03	nc	2.32E+01	4.64E+02
Phenol	1.83E+04	nc	1.00E+05	max	6.99E+04	nc		1.10E+04	nc	2.37E+00	4.74E+01
Polychlorinatedbiphenyls											
Aroclor 1016	3.93E+00	nc	4.13E+01	nc	1.50E+01	nc		2.56E+00	nc	1.73E-01	3.45E+00
Aroclor 1221	1.12E+00	nc	8.26E+00	ca	4.28E+00	nc		3.32E-01	ca	2.24E-02	4.47E-01
Aroclor 1232	1.12E+00	nc	8.26E+00	ca	4.28E+00	nc		3.32E-01	ca	2.24E-02	4.47E-01
Aroclor 1242	1.12E+00	nc	8.26E+00	ca	4.28E+00	nc		3.32E-01	ca	2.24E-02	4.47E-01
Aroclor 1248	1.12E+00	nc	8.26E+00	ca	4.28E+00	nc		3.32E-01	ca	2.64E-01	5.28E+00
Aroclor 1254	1.12E+00	nc	8.26E+00	ca	4.28E+00	nc		3.32E-01	ca	2.64E-01	5.28E+00
Aroclor 1260	1.12E+00	nc	8.26E+00	ca	4.28E+00	nc		3.32E-01	ca	2.64E-01	5.28E+00
n-Propylbenzene	6.21E+01	sat	6.21E+01	sat	6.21E+01	sat	x	6.08E+01	nc	2.70E-01	5.40E+00
Propylene oxide	2.22E+01	ca	9.33E+01	ca	7.92E+02	nc	x	2.18E+00	ca	4.60E-04	9.20E-03
Pyrene	2.29E+03	nc	3.09E+04	nc	9.01E+03	nc	x	1.83E+02	nc	1.86E+01	3.73E+02
RDX	4.42E+01	ca	1.74E+02	ca	6.99E+02	nc		6.03E+00	ca	1.68E-03	3.36E-02
Selenium	3.91E+02	nc	5.68E+03	nc	1.55E+03	nc		1.83E+02	nc	9.52E-01	1.90E+01
Silver	3.91E+02	nc	5.68E+03	nc	1.55E+03	nc		1.83E+02	nc	1.57E+00	3.13E+01
Strontium	4.69E+04	nc	1.00E+05	max	1.00E+05	max		2.19E+04	nc	7.73E+02	1.55E+04
Styrene	1.00E+02	sat	1.00E+02	sat	1.00E+02	sat	x	1.62E+03	nc	5.23E-01	1.05E+01
1,2,4,5-Tetrachlorobenzene	1.83E+01	nc	2.05E+02	nc	6.99E+01	nc		1.10E+01	nc	2.14E-02	4.29E-01
1,1,1,2-Tetrachloroethane	4.32E+01	ca	1.14E+02	ca	2.11E+03	ca	x	4.27E+00	ca	1.25E-03	2.50E-02
1,1,2,2-Tetrachloroethane	5.55E+00	ca	1.46E+01	ca	2.71E+02	ca	x	5.46E-01	ca	1.60E-04	3.21E-03
Tetrachloroethene	1.25E+01	ca	3.16E+01	ca	1.34E+02	sat	x	4.32E+00	ca	2.87E-03	5.74E-02
Thallium	5.16E+00	nc	7.49E+01	nc	2.04E+01	nc		2.41E+00	nc	1.72E-01	3.43E+00
Toluene	2.52E+02	sat	2.52E+02	sat	2.52E+02	sat	x	2.27E+03	nc	1.08E+00	2.17E+01
Toxaphene	4.42E+00	ca	1.74E+01	ca	1.48E+02	ca		6.03E-01	ca	2.33E-01	4.65E+00
Tribromomethane	6.21E+02	ca	2.46E+03	ca	4.44E+03	nc		2.44E+01	ca	1.73E-01	3.47E+00
1,1,2-Trichloro-1,2,2-trifluoroethane	3.28E+03	sat	3.28E+03	sat	3.28E+03	sat	x	5.92E+04	nc	1.68E+02	3.36E+03
1,2,4-Trichlorobenzene	6.93E+01	nc	2.69E+02	nc	2.30E+02	nc	x	7.16E+00	nc	2.04E-02	4.08E-01
1,1,1-Trichloroethane	5.63E+02	sat	5.63E+02	sat	5.63E+02	sat	x	3.17E+03	nc	1.33E+00	2.65E+01
1,1,2-Trichloroethane	1.19E+01	ca	3.02E+01	ca	1.94E+02	nc	x	1.97E+00	ca	4.98E-04	9.95E-03
Trichloroethylene	6.38E-01	ca	1.56E+00	ca	3.36E+01	ca	x	2.77E-01	ca	1.00E-04	2.00E-03

Chemical	Residential Soil (mg/kg)	End-point	Industrial/ Occupational Soil (mg/kg)	End-point	Construction Worker Soil (mg/kg)	End-point	VOC	Tap Water (ug/L)	End-point	DAF 1 (mg/kg)	DAF 20 (mg/kg)
Trichlorofluoromethane	5.88E+02	nc	9.83E+02	sat	9.83E+02	sat	x	1.29E+03	nc	1.12E+00	2.23E+01
2,4,5-Trichlorophenol	6.11E+03	nc	6.84E+04	nc	2.33E+04	nc		3.65E+03	nc	7.13E+00	1.43E+02
2,4,6-Trichlorophenol	6.11E+00	nc	6.84E+01	nc	2.33E+01	nc		3.65E+00	nc	7.13E-03	1.43E-01
1,1,2-Trichloropropane	2.53E+01	nc	9.64E+01	nc	8.35E+01	nc	x	3.04E+01	nc	1.17E-02	2.35E-01
1,2,3-Trichloropropane	8.61E-02	ca	2.09E-01	ca	4.57E+00	ca	x	5.53E-02	ca	2.07E-05	4.14E-04
1,2,3-Trichloropropene	1.21E+00	nc	4.39E+00	nc	3.95E+00	nc	x	2.10E+00	nc	7.88E-04	1.58E-02
Triethylamine	4.90E+01	nc	2.33E+02	nc	1.69E+02	nc	x	1.21E+01	nc	2.14E-03	4.29E-02
1,2,4-Trimethylbenzene	5.80E+01	nc	2.13E+02	nc	1.90E+02	nc	x	1.23E+01	nc	7.09E-02	1.42E+00
1,3,5-Trimethylbenzene	2.48E+01	nc	6.92E+01	sat	6.92E+01	sat	x	1.23E+01	nc	1.77E-02	3.55E-01
2,4,6-Trinitrotoluene	3.06E+01	nc	3.42E+02	nc	1.17E+02	nc		1.83E+01	nc	5.34E-02	1.07E+00
Vanadium	7.82E+01	nc	1.14E+03	nc	3.10E+02	nc		3.65E+01	nc	3.65E+01	7.30E+02
Vinyl acetate	1.07E+03	nc	3.68E+03	sat	3.52E+03	nc	x	4.12E+02	nc	7.57E-02	1.51E+00
Vinyl bromide	2.85E+00	ca	6.84E+00	ca	1.93E+01	nc	x	1.18E+00	ca	4.71E-04	9.41E-03
Vinyl chloride (Child)	2.25E+00	ca					x	4.28E-01	ca	1.40E-04	2.80E-03
Vinyl chloride (adult)	4.37E+00	ca	1.40E+01	ca	1.82E+02	ca	x	8.33E-01	ca	2.72E-04	5.45E-03
m-Xylene	8.20E+01	sat	8.20E+01	sat	8.20E+01	sat	x	2.03E+02	nc	1.03E-01	2.06E+00
o-Xylene	9.95E+01	sat	9.95E+01	sat	9.95E+01	sat	x	7.30E+03	nc	4.07E+00	8.14E+01
Xylenes	8.20E+01	sat	8.20E+01	sat	8.20E+01	sat	x	2.03E+02	nc	1.03E-01	2.06E+00
Zinc	2.35E+04	nc	1.00E+05	max	9.29E+04	nc		1.10E+04	nc	6.82E+02	1.36E+04