

**AP-111**

**C-141s**

**(3)**

**Chavez, Carl J, EMNRD**

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**From:** Riege, Ed <Ed.Riege@wnr.com>  
**Sent:** Tuesday, January 17, 2017 11:05 AM  
**To:** Chavez, Carl J, EMNRD  
**Cc:** Hains, Allen; Scott Crouch; Bailey, William; Smith, Cory, EMNRD; VanHorn, Kristen, NMENV  
**Subject:** Final C-141 and Response Action Report T-714  
**Attachments:** 201701150829.pdf

Hi Carl,  
Attached please find the Final C-141 and Response Action Report, Tank T-714 FCC Feed Release, February 5, 2016 cover letter. The hard copies of the report and disks are being mailed certified to you and Kristen Van Horn. The report will be uploaded to the OCD website.

Thanks,  
Ed

Ed Riege  
Remediation Manager

Western Refining  
Gallup Refinery  
92 Giant Crossing Road  
Gallup, NM 87301  
(505) 722-0217  
ed.riege@wnr.com



GALLUP

January 10, 2017

**Certified Mail #7014 1820 0001 7489 0396**

Mr. Carl Chavez, CHMM  
Environmental Engineer  
New Mexico Oil Conservation Division- Environmental Bureau  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

**RE: FINAL C-141 AND RESPONSE ACTION REPORT, TANK T-714 FCC FEED RELEASE, FEBRUARY 5, 2016**

Dear Mr. Chavez:

Please find attached the final C-141 report and a Response Action Report (Report) for the above mentioned release. The report includes a discussion of the release and process area, remediation, assessment, regulatory criteria comparisons, and conclusions and recommendations.

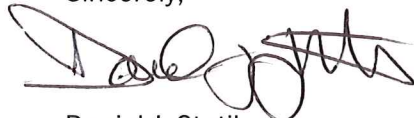
The following actions have been taken to prevent a reoccurrence of these events:

- Offsites personnel were provided with an updated Tank Capacity Limits which includes the start of Red high and Red low zones for all tanks in offsites.
- Operator alerts have been included on the handheld monitoring devices to inform operators when tanks enter red zones.

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

If there are any questions, please contact Ed Riege at 505-722-0217.

Sincerely,



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

cc NMOCD District III  
Kristen VanHorn NMHWP  
Allen Hains, Western El Paso

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in  
accordance with 19.15.29 NMAC.

## Release Notification and Corrective Action

### OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: WESTERN REFINING	Contact: Ed Riege
Address: I-40 / EXIT 39, JAMESTOWN, NM 87347	Telephone No. (505) 722-0217
Facility Name: WESTERN REFINING (GALLUP REFINERY)	Facility Type: Petroleum Refinery

Surface Owner	Mineral Owner	API No.
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### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	28	15 N	15 W					MCKINLEY

Latitude 35° 029' 010" Longitude -108° 025' 029"

### NATURE OF RELEASE

Type of Release: FCC FEED (T-714) Tank Overflow	Volume of Release- 1,543 bbls	Volume Recovered: 120 bbls Oil/ 600 bbls (water) (YTD)
Source of Release: FCC Feed (Heavy Oil)	Date and Hour of Occurrence 02/5/2016; 0345 hrs	Date and Hour of Discovery 02/5/2015; 0415 hrs
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? OCD (C. Chavez) / NMED HWB (Kristen Van Horn)	
By Whom? Beck Larsen	Date and Hour: 2/5/2016 / 0654	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.\* N/A

Describe Cause of Problem and Remedial Action Taken.\*

At 0415 hr on February 5, 2016 the FCC Tank (Heavy Oil) (T-714) was found to be overflowing in the Hot Oil Tank Farm. The Pumper-gauger made an inspection of the area at 8:00 Pm on Thursday, February 4, 2016 with no indication of issues based on gauge readings. An investigation concluded that on the previous day February 4, 2016 during the (6am-6pm) shift the Pumper Technician did not recognize or document that the tank was in the red zone. The red zone procedure states the red zone starts at 85% or 5 feet of safe fill height. Once a tank is in the red zone, the tank must be hand gauged every half hour. Neither the day or night pumper realized the tank was in the red zone so the procedure was not followed, and no hand gauge was ever taken.

Valves were blocked in and product was rerouted to T-701. The onsite Fire Department, Offsite Supervisors, Process Supervisor, and the Environmental Department was notified of the incident. The onsite Fire Department sprayed a blanket of foam and water over the entire affected area in order to prevent any potential hazards associated with the overflow. The Environmental Department arrived at the scene at about 0615 hours. A contract vacuum truck began removing liquids until further assessment could be determined. The FCC Feed Product was contained within an earthen dike containment area of the Hot Oil Tank Farm. The FCC feed rundown meter was used to determine the volume that was released. Assuming the worst case, the volume was 1,543 barrels of FCC feed.

Describe Area Affected and Cleanup Action Taken.\* The oil and foam blanket was contained in the south end of the Hot Oil Tank Farm earthen secondary containment behind dikes. After assessment of the spilled area, a contract company determined that in-situ solidification of the spilled area would be necessary using non-contaminated dirt. A contract company arrived on Monday, February 8, to begin the solidification process. The in-situ solidification process was deemed futile because the material would not solidify in-situ but would relocate to other areas. Therefore, the cleanup strategy was changed to solidification in roll-off boxes. The contract company filled roll-off boxes with FCC Feed product and dirt mixtures. The roll-off bins were shipped offsite as non-hazardous waste petroleum contaminated soil. Details of the remediation activities along with manifests, drawings and pictures can be found in the Response Action Report. Additional remediation was required after the initial remediation in the late winter and spring was completed. Additional soil excavation was conducted on August 10, 2016 and on August 31, 2016 at a hotspot located on the west side of T-714. A review of the analytical results for this hotspot area report that the arsenic and cyanide concentrations detected exceeded the Risk Based SSL for a DAF of 20. The arsenic is very low at 1.6 mg/kg and the cyanide was low at 1.04 mg/kg. No further action is recommended for this area.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 		<u>OIL CONSERVATION DIVISION</u>	
Printed Name: Ed Riege			
Title: Remediation Manager		Approval Date:	Expiration Date:
E-mail Address: ed.riege@wnr.com		Conditions of Approval:	Attached <input type="checkbox"/>
Date: 1/17/2017      Phone: (505) 722-0217			

\* Attach Additional Sheets If Necessary

**Chavez, Carl J, EMNRD**

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**From:** Riege, Ed <Ed.Riege@wnr.com>  
**Sent:** Tuesday, January 17, 2017 3:28 PM  
**To:** Chavez, Carl J, EMNRD  
**Cc:** VanHorn, Kristen, NMENV; Smith, Cory, EMNRD; Hains, Allen; Scott Crouch; Bailey, William  
**Subject:** Response Action Report Baker Tank -ASO Caustic Release  
**Attachments:** 201701161520.pdf

Hi Carl,

Attached please find the Response Action Report, Baker Tank -ASO Caustic Release, April 3, 2016 cover letter. The hard copies of the report and disks are being mailed certified to you and Kristen Van Horn. The report will be uploaded to the OCD website.

Thanks,  
Ed

Ed Riege  
Remediation Manager

Western Refining  
Gallup Refinery  
92 Giant Crossing Road  
Gallup, NM 87301  
(505) 722-0217  
ed.riege@wnr.com



January 10, 2017

**Certified Mail #7014 1820 0001 7489 0402**

Mr. Carl Chavez, CHMM  
Environmental Engineer  
New Mexico Oil Conservation Division- Environmental Bureau  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

**RE: RESPONSE ACTION REPORT, BAKER TANK – ASO CAUSTIC RELEASE, APRIL 3, 2016**

Dear Mr. Chavez:

Please find attached the Response Action Report (Report) for the above mentioned release. The report includes a discussion of the release and process area, remediation, assessment, regulatory criteria comparisons, and conclusions and recommendations.

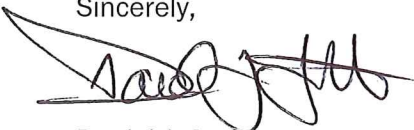
The following actions have been taken to prevent a reoccurrence of these events:

- Development of a Chemical Incapability List.
- Developing a Vacuum Truck Procedure to include material transfer information and approval.

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

If there are any questions, please contact Ed Riege at 505-722-0217.

Sincerely,



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

cc Kristen VanHorn NMHWB  
Allen Hains, Western El Paso



SUSANA MARTINEZ  
Governor

JOHN A. SANCHEZ  
Lt. Governor

NEW MEXICO  
ENVIRONMENT DEPARTMENT

2905 Rodeo Park Drive East, Building 1  
Santa Fe, New Mexico 87505-6303  
Phone (505) 476-6000 Fax (505) 476-6030  
[www.env.nm.gov](http://www.env.nm.gov)



BUTCH TONGATE  
Cabinet Secretary - Designate

J. C. BORREGO  
Deputy Secretary

**CERTIFIED MAIL – RETURN RECEIPT REQUESTED**

January 5, 2017

Mr. Ed Riege  
Remediation Manager  
Western Refining Southwest Inc., Gallup Refinery  
92 Giant Crossing Road  
Gallup, New Mexico 87301

**RE: APPROVAL  
RESPONSE TO DISAPPROVAL OF RESPONSE ACTION REPORT  
TANK T-583 ULTRA-LOW SULFUR DIESEL JANUARY 2, 2016 RELEASE  
WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY  
EPA ID # NMD000333211  
WRG-16-004**

Dear Mr. Riege:

The New Mexico Environment Department (NMED) is in receipt of Western Refining Southwest, Inc. Gallup Refinery's (Permittee) response to NMED's November 15, 2016 Disapproval letter regarding the Permittee's *Response Action Report Tank T-583 Ultra-Low Sulfur Diesel January 2, 2016 Release* (Report), dated August 2016. The Permittee's response to the Disapproval is adequate.

The Energy Minerals and Natural Resource Department Oil Conservation Division (OCD) reiterates that it considers dilution attenuation factor (DAF)1/DAF20 (criteria determined based on site-specific nature of release) Soil Criteria to be protective of groundwater; however, OCD's applicable or relevant and appropriate requirements (ARARs) also includes sulfate, chloride, gasoline range organics (GRO)/ diesel range organics (DRO)/ motor oil range organics (MRO) or GRO/DRO-extended and other general chemistry criteria to satisfy protection of groundwater when these constituents are believed to be present in the release. The Permittee must include these constituents for sampling and analysis for future releases, where appropriate.

Mr. Riege  
Gallup Refinery  
January 5, 2016  
Page 2

If you have questions regarding this letter, please contact Kristen Van Horn at 505-476-6046.

Sincerely,



John E. Kielling  
Chief  
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB  
K. Van Horn, NMED HWB  
C. Chavez, EMNRD OCD  
A. Hains, WRG  
L. King, EPA

File: Reading File 2017  
WRG-16-004

**Chavez, Carl J, EMNRD**

---

**From:** Riege, Ed <Ed.Riege@wnr.com>  
**Sent:** Monday, December 19, 2016 12:39 PM  
**To:** Kieling, John, NMENV  
**Cc:** Cobrain, Dave, NMENV; VanHorn, Kristen, NMENV; Chavez, Carl J, EMNRD; king.laurie@epa.gov; Hains, Allen  
**Subject:** Disapproval Response Action Report Tank T-583 Ultra Low Sulfur Diesel Release  
**Attachments:** 201612181118.pdf

Dear Mr. Kieling,  
Attached please find the response to the letter referenced above. The signed hard copy is being sent by certified mail.

Sincerely,

Ed Riege  
Remediation Manager

Western Refining  
Gallup Refinery  
92 Giant Crossing Road  
Gallup, NM 87301  
(505) 722-0217  
ed.riege@wnr.com



Certified Mail # 7014 1820 0001 7489 0365

December 19, 2016

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

RE: DISAPPROVAL RESPONSE ACTION REPORT  
TANK T-583 ULTRA LOW SULFUR DIESEL  
JANUARY 2, 2016 RELEASE  
WESTERN REFINING SOUTHWEST, INC. GALLUP REFINERY  
EPA ID # NMD000333211

Dear Mr. Kieling:

**Comment 1**

The Permittee does not discuss the depth to water /groundwater elevations at the location of the release and states in Section 2.4 (Groundwater Conditions) that, "[a] groundwater investigation was not conducted." The groundwater elevation can be estimated based on groundwater monitoring points near the release and must be reported when reporting spills. In Section 4 (Conclusions and Recommendations) the Permittee states, "[b]ased on the fact that groundwater is already documented to be impacted in the general area, the maximum detected results in the confirmation samples are well below both the residential and non-residential screening levels, and maximum concentrations are generally within one order of magnitude of the DAF 20 screening levels, no further remediation is recommended at this time." Even if groundwater is already contaminated beneath the area of a release, the Permittee must ensure that a release will not result in further impacts to groundwater. In the response letter, provide the depth to groundwater and the groundwater elevation in the vicinity of the release.

**Western Response**

Groundwater elevation in the area is estimated at 6,915 msl. Depth to groundwater is estimated at 29 feet based on nearby recovery well #6.

**Comment 2**

The Report does not discuss the cleanup and soil confirmation sampling activities. These include: how much soil was removed, the dimensions of the excavation, whether or not the excavated soil was replaced with fill and where the fill came from, how confirmation samples were collected and the locations and depths of the confirmation samples. In the response

letter, provide these additional details regarding the soil excavation and confirmation sampling. This type of information must be included in future response action reports.

### **Western Response**

The volume of soil removed is presented in Section 2.1; approximately 139,188 pounds of soil was removed for off-site disposal. As shown on Figure 4, there were two primary areas of excavation with dimensions of approximately 30 feet by 100 feet and 25 feet by 50 feet. The excavation was approximately .5 feet deep. The area was not backfilled.

The confirmation sampling was discussed in Section 2.2.1 and additional information is provided below. On March 30, 2016, 12 discrete soil samples were collected from 12 separate locations using a hand auger. The hand auger was used to collect a soil sample from 0 to 6 inches below ground level in the floor of the excavation. The hand auger was decontaminated between each location. Figure 4 depicts the locations of the 12 soil samples. A copy of the field methods used to collect the soil samples is enclosed.

### **Comment 3**

The spill description is [a] "sandpiper pump for the distillate rundown line going to T-583 was leaking product to the ground surface from a cracked casing." Based on the figures provided, it appears there are two separate release areas within the tank berm and on opposite sides of the tank. In the response letter provide a more detailed description of the release that explains the two areas.

### **Western Response**

The figure shows where the material pooled. The two separate areas were connected by a very small channel (which was excavated) allowing the spilled material and water to flow to these two low lying areas.

### **Comment 4**

Section 2.2.2 (Soil Screening Results) states that "[f]ield screening was not conducted during the collection of soil samples." As a common practice, samples should be collected based on field screening (e.g. olfactory, staining) in order to collect samples that are most representative of the soil conditions. Additionally, OCD requires that photoionization detector (PID) screening be used when conducting soil cleanups.

### **Western Response**

A PID was not used during the field screening; however, the soil samples were collected from locations based on field screening (e.g., olfactory, staining) and were considered to be the most representative of the soil conditions.

### **Comment 5**

As a general note, in Section 3 (Regulatory Criteria Comparisons) the Permittee discusses the screening levels used in the Report. For spills occurring in SWMUs or AOCs, NMED has agreed that meeting the industrial/commercial soil screening levels is adequate as long as they are protective of groundwater as well. Additionally, OCD requires soil cleanup

levels to be protective of groundwater and does not rely on the industrial/commercial screening levels for protection of groundwater. OCD also requires that the Permittee ensure that the laboratory data results meet the regulatory levels for detection to satisfy the data quality objectives (DQOs). The Permittee compares the soil analytical results to the DAF20 screening level which is the most conservative (as long as groundwater is not shallow in the Tank Farm area; see Comment 1).

#### **Western Response**

No response required.

#### **Comment 6**

The Permittee did not analyze samples for total petroleum hydrocarbon (TPH) analysis. In the future, to meet OCD requirements, the Permittee must collect samples for TPH analysis (gasoline, diesel-extended, and motor-oil range organics).

#### **Western Response**

In the future, spill confirmation samples will be analyzed for TPH.

#### **Comment 7**

The Sample Log-In Check List provided in the analytical laboratory report includes a note that states, "low level VOAs had too much volume." In the future, ensure that samples are collected properly so that the sampling results are as accurate as possible and ensure that field personnel are aware of the different requirements for each sample type.

#### **Western Response**

Training has been conducted for sampling personnel to address EPA Method 5035.

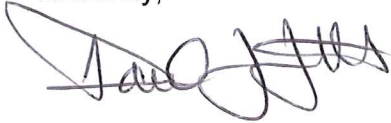
If there are any questions regarding the enclosed Investigation Report, please contact Mr. Ed Riege at (505) 722-0217.

#### **Certification**

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



Sincerely,

A handwritten signature in dark ink, appearing to read "Dan Statile", with a large, sweeping flourish at the end.

Mr. Daniel J. Statile  
VP Refining  
Western Refining Southwest, Inc. – Gallup Refinery

A handwritten signature in dark ink, appearing to read "Ed Riege", with a stylized, cursive script.

Ed Riege  
Remediation Manager  
Western Refining Southwest, Inc. – Gallup Refinery

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

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## Appendix G

### Field Methods

The following procedures are to be followed during sampling collection:

The soil sampling kit (Method 5035) for Volatile Organics Analysis (8260, 8021, & 8015) are to be used and consist of the following components:

- 1) Methanol Kit - One labelled paper envelope that contains two vials preserved with methanol and a plastic syringe.
- 2) Sodium Bisulfate Kit - One labelled quart sealable bag that contains two 40-ml VOA vials preserved with sodium bisulfate and placed in bubble wrap sleeve. A plastic syringe is also included.
- 3) One 8-oz glass jar.

Sampling procedures included:

Methanol Kit – Using new gloves take the syringe and collect 10 CCs of soil and extrude into one of the vials. Collect and extrude 10 CCs into the second vial and place both vials in the paper envelope. Seal the envelope flap with clear tape. Fill out the label with the date and time the sample was collected and the sampler's name/initials. The project location should be included on the label. All labels will be completed with waterproof ink and covered with clear tape. Place the paper envelope in a quart sealable bag. Place the quart bag in a gallon sealable bag.

Sodium Bisulfate Kit – Using new gloves, if necessary, take the syringe and collect 4 CCs of soil and extrude into one of the vials. Collect and extrude 4 CCs into the second vial and place both vials in the bubble wrap and then in the quart sealable bag. Fill out the label on the quart sealable bag and cover with clear tape. Place in the gallon sealable bag.

8-oz Jar/Teflon Lined Lid - Using new gloves, if necessary, and a clean trowel or sampling knife, fill the 8-oz jar completely with soil and seal with the lid. Fill out the label and cover with clear tape. Place the jar in bubble wrap and then in the gallon sealable bag.

If additional analyses such as metals or semivolatile organics are required, then an additional 8-oz jar must be collected.

The bags will be placed into a cooler filled with ice. The sampling location and sampling time will be recorded on the field log and the chain-of-custody form. All samples are to be kept on ice until delivered by hand to the laboratory.

The sample containers were secured in bubble wrap and then placed in new sealable bags. The bags will be placed into a cooler filled with ice packed in sealable bags. All samples were kept cold (at 4°C or below) and delivered by hand, transported to the laboratory.

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SUSANA MARTINEZ  
Governor

JOHN A. SANCHEZ  
Lieutenant Governor

**NEW MEXICO  
ENVIRONMENT DEPARTMENT**

2905 Rodeo Park Drive East, Building 1  
Santa Fe, New Mexico 87505-6303  
Phone (505) 476-6000 Fax (505) 476-6030  
[www.env.nm.gov](http://www.env.nm.gov)



BUTCH TONGATE  
Cabinet Secretary

J. C. BORREGO  
Acting Deputy Secretary

**CERTIFIED MAIL – RETURN RECEIPT REQUESTED**

November 15, 2016

Mr. Ed Riege  
Remediation Manager  
Western Refining Southwest Inc., Gallup Refinery  
92 Giant Crossing Road  
Gallup, New Mexico 87301

**RE: DISAPPROVAL  
RESPONSE ACTION REPORT  
TANK T-583 ULTRA-LOW SULFUR DIESEL  
JANUARY 2, 2016 RELEASE  
WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY  
EPA ID # NMD000333211  
WRG-16-004**

Dear Mr. Riege:

The New Mexico Environment Department (NMED) is in receipt of Western Refining Southwest, Inc. Gallup Refinery's (Western) submittal *Response Action Report Tank T-583 Ultra-Low Sulfur Diesel January 2, 2016* (Report) dated August 2016. The Report was submitted in accordance with RCRA Permit Section II.C.3 (Non-Compliance Written Report).

NMED has reviewed the Report and determined that the release is not considered a new solid waste management unit (SWMU) or area of concern (AOC) because the release occurred within SWMU 6 (Tank Farm) and it appears that the Permittee addressed the release sufficiently. However, the Permittee must submit a letter to address the following comments and provide additional information regarding the cleanup effort.

The following comments are provided by both NMED and the New Mexico Energy Mineral and Natural Resources Department Oil Conservation Division (OCD).

**Comment 1**

The Permittee does not discuss the depth to water /groundwater elevations at the location of the release and states in Section 2.4 (Groundwater Conditions) that, “[a] groundwater investigation was not conducted.” The groundwater elevation can be estimated based on groundwater monitoring points near the release and must be reported when reporting spills. In Section 4 (Conclusions and Recommendations) the Permittee states, “[b]ased on the fact that groundwater is already documented to be impacted in the general area, the maximum detected results in the confirmation samples are well below both the residential and non-residential screening levels, and maximum concentrations are generally within one order of magnitude of the DAF 20 screening levels, no further remediation is recommended at this time.” Even if groundwater is already contaminated beneath the area of a release, the Permittee must ensure that a release will not result in further impacts to groundwater. In the response letter, provide the depth to groundwater and the groundwater elevation in the vicinity of the release.

**Comment 2**

The Report does not discuss the cleanup and soil confirmation sampling activities. These include: how much soil was removed, the dimensions of the excavation, whether or not the excavated soil was replaced with fill and where the fill came from, how confirmation samples were collected and the locations and depths of the confirmation samples. In the response letter, provide these additional details regarding the soil excavation and confirmation sampling. This type of information must be included in future response action reports.

**Comment 3**

The spill description is [a] “sandpiper pump for the distillate rundown line going to T-583 was leaking product to the ground surface from a cracked casing.” Based on the figures provided, it appears there are two separate release areas within the tank berm and on opposite sides of the tank. In the response letter provide a more detailed description of the release that explains the two areas.

**Comment 4**

Section 2.2.2 (Soil Screening Results) states that “[f]ield screening was not conducted during the collection of soil samples.” As a common practice, samples should be collected based on field screening (e.g., olfactory, staining) in order to collect samples that are most representative of the soil conditions. Additionally, OCD requires that photoionization detector (PID) screening be used when conducting soil cleanups.

**Comment 5**

As a general note, in Section 3 (Regulatory Criteria Comparisons) the Permittee discusses the screening levels used in the Report. For spills occurring in SWMUs or AOCs, NMED has agreed that meeting the industrial/commercial soil screening levels is adequate as long as they are protective of groundwater as well. Additionally, OCD requires soil cleanup levels to be protective of groundwater and does not rely on the industrial/commercial screening levels for

Mr. Riege  
Gallup Refinery  
November 15, 2016  
Page 3

protection of groundwater. OCD also requires that the Permittee ensure that the laboratory data results meet the regulatory levels for detection to satisfy the data quality objectives (DQOs). The Permittee compares the soil analytical results to the DAF20 screening level which is the most conservative (as long as groundwater is not shallow in the Tank Farm area; see Comment 1).

**Comment 6**

The Permittee did not analyze samples for total petroleum hydrocarbon (TPH) analysis. In the future, to meet OCD requirements, the Permittee must collect samples for TPH analysis (gasoline, diesel-extended, and motor-oil range organics).

**Comment 7**

The Sample Log-In Check List provided in the analytical laboratory report includes a note that states, "low level VOAs had too much volume." In the future, ensure that samples are collected properly so that the sampling results are as accurate as possible and ensure that field personnel are aware of the different requirements for each sample type.

The Permittee must submit a response letter to address the appropriate comments in this letter. The response letter must be submitted no later than **December 23, 2016**.

If you have questions regarding this letter, please contact Kristen Van Horn at 505-476-6046.

Sincerely,

A handwritten signature in blue ink, appearing to read "John E. Kieling", with a stylized flourish at the end.

John E. Kieling  
Chief  
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB  
K. Van Horn, NMED HWB  
C. Chavez, EMNRD OCD  
A. Hains, WRG  
L. King, EPA

File: Reading File 2016  
WRG-16-004





SUSANA MARTINEZ  
Governor

JOHN A. SANCHEZ  
Lieutenant Governor

**NEW MEXICO  
ENVIRONMENT DEPARTMENT**

2905 Rodeo Park Drive East, Building 1  
Santa Fe, New Mexico 87505-6303  
Phone (505) 476-6000 Fax (505) 476-6030  
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BUTCH TONGATE  
Cabinet Secretary

J. C. BORREGO  
Acting Deputy Secretary

**CERTIFIED MAIL – RETURN RECEIPT REQUESTED**

November 10, 2016

Mr. Ed Riege  
Remediation Manager  
Western Refining Southwest Inc., Gallup Refinery  
92 Giant Crossing Road  
Gallup, New Mexico 87301

**RE: APPROVAL  
RESPONSE ACTION REPORT  
WASTEWATER TREATMENT PLANT CARBON CANISTER  
RUPTURE DISK DECEMBER 27, 2016 RELEASE JANUARY 7, 2016 RELEASE  
WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY  
EPA ID # NMD000333211  
WRG-16-005**

Dear Mr. Riege:

The New Mexico Environment Department (NMED) is in receipt of Western Refining Southwest, Inc. Gallup Refinery's (Western) submittal *Response Action Report Wastewater Treatment Plant Carbon Canister – Rupture Disk December 27, 2015 Release January 7, 2016 Release* (Response) dated August 2016. It appears that the Permittee adequately addressed the releases. The following comments are from both NMED and the Oil Conservation Division (OCD).

**Comment 1**

NMED may consider the area of the release a solid waste management unit (SWMU) based on the definition of a SWMU in the Permittee's RCRA Permit as sites where routine and systematic releases have occurred. The releases in this case are of untreated wastewater which, at a minimum, includes listed waste (D018) and other hazardous constituents. The Permittee notes in Section 4.3 (Recommended Additional Excavation and Assessment) that the lower level area of the release will be investigated when SWMU 15 (New API Separator) is addressed in the future.

However, the upper level of the release, closer to the wastewater treatment plant, is not part of SWMU 15 and is not currently listed as a SWMU or area of concern (AOC) in the RCRA Permit and may be subject to addition to the Permit by NMED.

**Comment 2**

In Section 1.4 (Discussion of the Process Area) the Permittee states, "Western operates a Wastewater Treatment Plant (WWTP), which went on line on May 2012." This statement is not accurate. Since October 2014 the granulated activated carbon canister (GAC) system, which replaced the macro porous polymer extraction (MPPE) system that began operation in May 2012, treats refinery wastewater. In future reports, ensure that the information provided is accurate.

**Comment 3**

In Section 2.1.1 (December 27, 2015 Release) the Permittee states that, "[t]he volume recovered is unknown." Permit Section II.C.2.c.ii (Content of description) requires that the Permittee report on "[e]stimated quantity and disposition of recovered material that resulted from the incident." In the future, spill responses must include information regarding the amount of recovered release material.

**Comment 4**

In Sections 2.2.2 and 2.3.2 (Soil Screening Results) the Permittee states that "[f]ield screening was not conducted during the collection of soil samples." As a common practice, samples should be collected based on field screening (e.g., olfactory, staining) in order to collect samples that are most representative of the soil conditions. Additionally, OCD requires that photoionization detector (PID) screening be used when conducting soil cleanups.

**Comment 5**

The Permittee does not discuss depth to water/groundwater elevations at the location of the release and states in Section 2.6 (Groundwater Conditions) that, "[a] groundwater investigation was not conducted." The groundwater elevation can be estimated based on groundwater monitoring points near the release and must be reported when reporting spills. Groundwater elevation must be known when comparing soil analytical results to DAF 20 screening levels.

**Comment 6**

Arsenic, chromium and naphthalene analytical results exceeded their respective DAF 20 screening levels, but are within an order of magnitude of the regulatory criteria. OCD does not rely on risk-based screening levels (RBSLs) for commercial/industrial for protection of groundwater; however, at the Gallup Refinery the DAF 20 appears to be adequate. The Permittee must ensure that environmental laboratory detection limits are less than the regulatory levels in order to satisfy data quality objectives (DQOs) for laboratory data to be acceptable for the OCD.

Mr. Riege  
Gallup Refinery  
November 10, 2016  
Page 3

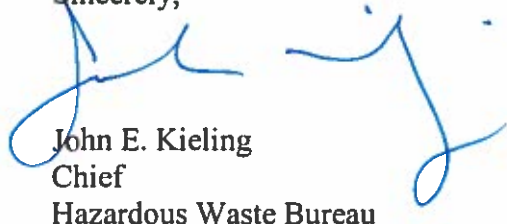
**Comment 7**

In Section 1.3 (Characterization of the Release Material) the Permittee states “[a] sample of the spilled liquid was collected and submitted to Western's onsite laboratory” for both the December and January releases. The analytical results demonstrate that the December release resulted in, “a benzene concentration of 0.45 mg/L.” The analytical result for the January release demonstrated that, “the wastewater had a benzene concentration exceeding the 0.5 mg/L RCRA Regulatory Limit.” The Permittee lists the benzene analytical result as 3.75365 mg/L later in the section. The release in January constitutes a release of listed hazardous waste.

No response is required in regards to this letter; however, the Permittee must address the comments in future spill reports and response action reports.

If you have questions regarding this letter, please contact Kristen Van Horn at 505-476-4046.

Sincerely,



John E. Kieling  
Chief  
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB  
K. Van Horn, NMED HWB  
C. Chavez, EMNRD OCD  
A. Hains, WRG  
L. King, EPA

File: Reading File 2016 and  
WRG-16-005

**Chavez, Carl J, EMNRD**

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**From:** Riege, Ed <Ed.Riege@wnr.com>  
**Sent:** Monday, August 01, 2016 4:36 PM  
**To:** Kieling, John, NMENV  
**Cc:** Cobrain, Dave, NMENV; Dhawan, Neelam, NMENV; VanHorn, Kristen, NMENV; Chavez, Carl J, EMNRD; king.laurie@epa.gov; Allen, Ann; Hains, Allen  
**Subject:** Interim Measures Report Hydrocarbon Seep Area  
**Attachments:** 201608011645.pdf

Dear Mr. Kieling,

The attached letter was prepared to address your comments in the April 26, 2016 referenced report. Two hard copies of the full report are being sent certified mail and includes a CD which contains a redline of the report and all analytical data. The full report will be uploaded to the OCD website.

Sincerely,

Ed Riege MPH  
Remediation Manager

Western Refining  
Gallup Refinery  
92 Giant Crossing Road  
Gallup, NM 87301  
(505) 722-0217  
ed.riege@wnr.com

July 28, 2016

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

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

Dear Mr. Kieling:

Western Refining Southwest, Inc. – Gallup Refinery ("Western") has prepared the following responses to address your comments (dated April 26, 2016) on the referenced report.

**NMED Comment 1**

The Permittee improperly handled disposal of excavated soil. There are two issues to consider in disposal of contaminated soil: 1) is the soil characteristic hazardous waste, and 2) does the soil contain listed hazardous waste. NMED's July 31, 2013 letter regarding the hydrocarbon seep stated, "Western Refining must manage any gasoline-tainted soil removed from the site as hazardous waste unless and until analytical results confirm that the soil is not toxic hazardous waste for benzene (DO18) or listed hazardous waste based on the source of the release." The laboratory analytical results for soil samples of excavated soil demonstrate that the soils were not characteristic hazardous waste. However, one of the sources of the seep is the Contact Wastewater/Storm Sewer which handles process wastewater among other types of fluid. In addition to the traditional use of the sewer system, the Permittee also uses vacuum trucks for initial cleanup of spilled material and disposes of these fluids back into the sewer system upstream from the API Separator, which may include listed hazardous waste. Once process wastewater ceases lateral flow, for example when process water from the Contact Wastewater/Storm Sewer leaked from the corroded pipe and flow ceased in the surrounding soil, listed hazardous waste (F037) is generated. While the Permittee's soil analytical sampling results demonstrate that the excavated soils from the pipe excavation are not characteristic hazardous waste, the soils carry listed waste determinations (F037 at a minimum and potentially others (K049, K050, K051) because of the use of the sewer system). Mixtures of solid waste and listed hazardous waste must be regulated as hazardous waste; therefore, the soils were handled improperly. On page 2-5, the Permittee states, "[a] total volume of 278 cubic yards of non-- hazardous soil was disposed off-site at the Gandy Marley, Inc. landfill in Chaves County, New Mexico." This facility is not permitted to receive hazardous waste. This situation is an example where communication between the Permittee and NMED was necessary in order to ensure compliance with the regulations. NMED is



issuing a Notice of Violation regarding this issue. No revision to the Report is necessary.

**Western Response:**

None required (see Western's response dated July 7, 2016 to NMED's Notice of Violation dated April 20, 2016).

**NMED Comment 2**

The Permittee must include additional details in the revised Report. It is important to include descriptions of all field activities when reporting. The descriptions aid in understanding the data quality because the reader is not in the field to observe the activities. Revise the Report text to include the following:

1. Descriptions of the methods and procedures used to advance soil borings and install groundwater monitoring wells as well as the methods and procedures used to collect soil and groundwater samples for field screening and laboratory analysis. In addition, include information regarding the methods of logging the borings (e.g., collection of samples from split spoon, auger spoon/head, and auger cuttings), whether or not soil samples were collected for laboratory analysis (including locations) and how the sample intervals were chosen.
2. A description of the methods used to collect and dispose of recovered product.
3. Discussion of whether any additional soil removal may be necessary either in the seep area or in the areas where leaks occurred. Discuss whether or not additional dye tests will be conducted.
4. Discussion of the rationale for installing over twenty new permanent groundwater monitoring wells. Also provide information regarding whether or not the recovery wells are permitted through the Office of the State Engineer.
5. Discuss whether or not groundwater monitoring wells will be converted to recovery wells, if necessary. If not, propose to submit a Work Plan to continue hydrocarbon removal.
6. Discuss whether or not there are dedicated pumps in each well or if portable pumps are used. Discuss the disposition of the soil generated from the 14 excavations completed as part of the source identification.

**Western Response:**

The report has been revised to include additional detail.

1. Descriptions of the methods and procedures for logging the borings and boring/well installation have been included in Appendix C and further discussion on well installation and groundwater sample collection is presented in section 2.3

Soil samples were not collected for laboratory analysis from the soil borings that were completed as either temporary or permanent monitoring wells. As noted in the second paragraph of the Executive Summary in the Interim Measures Report, "The interim measures conducted to-date include: (1) source identification, (2) source control



measures, and (3) characterization of groundwater impacts. There was no effort during the interim measures presented in the report to investigate and delineate potential secondary sources (e.g., impacted soils), but rather efforts were focused identification of primary sources (e.g., leaking pipelines), and characterization and delineation of the associated groundwater impacts.

2. Discussion on the collection and disposal of recovered product was included in the first paragraph of the discussion on Source Control Measures. As explained, "The groundwater and any hydrocarbons that enter the sumps are removed with a vacuum truck and placed into the wastewater treatment system up-stream of the API Separator." Currently, the water/hydrocarbon mixture is recovered from the standpipes twice a week with a vacuum truck. The vacuum truck takes the recovered product to a process sewer drain. The same procedure was used at individual monitoring wells that have contained product with subsequent modifications to allow for more accurate measurements of recovery volumes.
3. The current interim measures are focused on addressing impacts to groundwater, identifying and eliminating primary sources, and targeted removal of significant secondary sources (e.g., heavily impacted shallow soils). Soils were removed from the excavation at the leaking wastewater pipeline, the transmix line that was found to be leaking immediately west of the Bundle Cleaning Pad, and more recently on 5/3/2016 through 5/6/2016 visibly impacted soils were excavated in the area of the seep. See additional discussion in Section 2.2.

Additional dye tests have been conducted (see additional discussion in Section 2.1). The first test was conducted at the bundle pad on 4/25/16 and results were negative. The second dye test was conducted at the truck rack on 5/6/16 and the results were negative or inconclusive. A third test was conducted on 5/23/16 and 5/25/16 at the southwest section of the tank farm where dye was added to various tank water draw sewer cups. Dye was seen in the standpipes on 5/27/16 and in the pits created by the additional soil removal on 6/7/2016. The dye used in all tests was Bright Dyes tracer liquid concentrate in fluorescent yellow/green.

4. The monitoring wells were installed to delineate the lateral extent of impacts to groundwater that were initially identified in the area of the hydrocarbon seep. The area of investigation and actual well placement was dictated by observed site conditions, including primarily contaminate concentrations observed in the initial temporary well completions and hydraulic gradients. Additional discussion is included in Section 2.3

Monitoring wells were permitted with the State Engineer's Office prior to drilling.

5. Some of the groundwater monitoring wells that have contained SPH are already being used as recovery wells. In fact, some of the monitoring wells were installed using 4-inch well screen and casing to accommodate their use as potential recovery wells. Western is currently conducting yield tests on the 4-inch wells and the sumps to evaluate converting these locations to permanent recovery wells. Additional discussion is provided in Section 3.0.
6. Currently, there are no dedicated recovery pumps installed in the wells. Recovery is currently conducted using a vacuum truck at the sump locations (S-1 through S-6) and



smaller pumps at individual monitoring wells with the greater SPH thickness measurements. Well yield evaluations are underway to possibly install dedicated pumps in select individual wells (e.g., MKTF-10).

The disposition of soils generated from the excavation of the sumps is discussed on page 2-1, third paragraph of the Interim Measures Report. The soils, which were not returned to the excavation, were characterized and disposed off-site. The lab reports #1307524 (Soil Pile Behind 101/102), #1306C03 (Excavated Soil/Tar/Pit Samp W), and #1309D69 (Pit Behind T-101-102) for the soils are included in Appendix 4.

### **NMED Comment 3**

The Permittee must include additional discussion of the effectiveness of the interim measures.

1. On page 2-4, under the Source Control heading, paragraph one, the Permittee states, "[t]he initial material recovered was estimated to be 50% water and 50% hydrocarbon; however, the percentage of hydrocarbon reduced significantly over the first couple of weeks and has declined to less than 1%." Please revise the Report to discuss how the percentages were calculated and discuss whether or not measurements of separate-phase hydrocarbon (SPH) thicknesses are collected in the excavation recovery sumps.
2. In paragraph two under the same heading, the Permittee states, "[b]eginning in August 2014, product recovery from individual monitoring wells was initiated. This involved recovery of total fluids (water and hydrocarbon) without accurate measurements from individual wells. Later the recovery process was modified to more accurately record recovery of product from the individual wells. Through June 30, 2015, 21 gallons of SPH has been recovered." In this instance, the Permittee needed to ensure that proper measurements were collected in order to effectively track changes in the plume. In the future, ensure that steps are taken to accurately measure initial product levels and then document changes over time so that there is a record of the effectiveness of the recovery. No revision is necessary.
3. Table 1 (Fluid Level Measurements) demonstrates that the hydrocarbon thickness since July 2013 has generally decreased, remained stable, or fluctuated over time in the groundwater monitoring wells with the exception of MKTF-12 and MKTF-45 where increasing levels of hydrocarbons were measured. Revise the Report to provide more discussion regarding trends in the amounts of SPH measured in groundwater monitoring wells over time and whether or not there are obvious patterns to the amount of hydrocarbons measured in the wells (to determine plume migration and the effectiveness of interim measures).

### **Western Response:**

1. Section 2.2 of the report has been revised to discuss how the percentage volumes of recovered SPH are calculated. In addition, a column has been added to Table 3 to show the percent of the total recovered volume recovered that is SPH. The thickness measurements of SPH were included in Table 1 - Fluid Level Measurements – Hydrocarbon Seep Area.



2. None required.
3. Additional discussion has been added in Section 2.3 regarding the measurements of SPH thickness over time. However, it is important to note that minor changes in SPH thickness in individual wells are common and may not be the result of an actual change in the thickness of SPH in the formation. As the wells have not been present very long, it may not be possible to make any firm conclusions regarding trends in SPH thickness, in particular with the periodic removal of SPH from some wells.

#### **NMED Comment 4**

Revise the Report to discuss whether or not the vertical and lateral impacts of the leaks and related contaminant plumes have been determined or if additional soil borings and groundwater monitoring wells are planned. If impacts have not been fully defined or if the contaminant plume(s) require additional investigation to determine the nature and extent, then propose to install additional soil borings and/or groundwater monitoring wells.

#### **Western Response:**

Based on current monitoring data, the contaminant plume has been defined vertically and laterally to the residential screening levels, with the possible exception to the north. Access issues have prevented installation of monitoring wells near the crude oil tanks. Western will be conducting additional camera surveys of the sewer lines to the east of the crude oil tanks and Western will discuss possible investigation near the crude oil tanks at future quarterly project meetings with NMED.

#### **NMED Comment 5**

On page 2-2, the Permittee states "[t]wo additional dye tests were conducted in the process sewer system with a yellow/green dye introduced into the sewer at the transmix unloading area (a short distance northwest of the main truck loading racks) on September 23, 2013 and a red dye introduced at the lab sinks on September 24, 2013 ... [t]he green/yellow dye appeared to be present in nine wells (SB04, SB05, SB06, SB08, SB10, SB11, SB19, SB20, and SB21), which are all located further south. Although the dye tests were not conclusive, the separate patterns of the two dyes suggest the possibility of two separate release points from the sewer lines. The red dye appears to have exited the sewer line from a hole identified near the bundle cleaning pad (see discussion below). The source location of the yellow/green dye is not currently known." Revise the Report to describe the plans to address the source of the yellow-green dye that has yet to be determined. NMED is aware that the Permittee intends to submit a work plan for the Main Loading Rack Area (AOC 35); however, if there is an active leak, the Permittee must address this prior to the agreed upon submittal date for the work plan in RCRA Permit Table E-2. Additionally, the Permittee must identify all suspected units and piping and include a schedule for additional dye tracer or other studies to identify other potential sources of contamination.

#### **Western Response:**

See response to Comment 2 above for discussion on additional dye tracer studies. Western has reviewed all available site documentation on facility piping in the area. Western is scheduling additional camera surveys of the underground sewer lines in the area of the truck loading rack and to the east of the crude oil tanks.



#### **NMED Comment 6**

Please provide a table, similar to the table provided in the Permittee's Facility-Wide Groundwater Monitoring Report(s), that lists the newly installed groundwater monitoring wells by name, the design specifications of the wells, date installed, the surveyed groundwater top of casing information, the screened intervals, most recently measured depth to water, and the latest SPH measurement(s).

#### **Western Response:**

As noted by NMED, this same information is presented in the most recent Facility-Wide Ground Water Monitoring Report and Facility-Wide Ground Water Monitoring Work Plan. The requested well design/construction information is included in Table 6. Table 1 has been updated to include the most recent depth to water and SPH thickness measurements.

#### **NMED Comment 7**

On page 2-3 the Permittee states, "[o]n August 19, 2013 an operator walking the aboveground pipeline rack looking for possible leaks observed hydrocarbon on the land surface in the secondary containment east of tank T-3. The location of the leak, which is just west of the above ground pipeline rack that runs north to south along the east side of the marketing tank farm, is shown on Figure 2. Once the release was discovered a small earthen berm was built approximately 10 ft to the west of the release, which held approximately 1.5 barrels of hydrocarbon." This release was not reported to NMED or the Oil Conservation Division (OCD). NMED notes that OCD has a "minor release" reporting limit of 5 barrels; however, the Permittee is required to report all releases to NMED. In addition, it is likely that more than 1.5 barrels were released and some quantity of the released fluids soaked into the surrounding soils for 1.5 barrels to seep into the ground surface. Further in the paragraph the Permittee states, "[i]t was identified as a transmix/slop 6 to 8 inch line that is only used during the unloading of transmix trucks at the truck rack, thus it would only have been an intermittent source. Trucks are unloaded at the rack and this line transports the transmix/slop to T-231. The line was taken out of service, cleaned and blanked off. The line was replaced with an aboveground pipeline." Revise the Report to also discuss whether any soil was excavated and whether the release was investigated to determine the extent of subsurface contamination.

#### **Western Response:**

NMED states that the release was not reported to them or to OCD. This is not correct; the release was previously reported to both agencies. As described in the text, the leak from the transmix/slop transfer line was discovered on August 19, 2013 while Western was conducting an on-going search to identify potential sources for the hydrocarbon seep, which was already reported to both agencies on June 27, 2013. Both agencies were clearly aware of the previous identification of the hydrocarbon seep area and Western's on-going actions to identify potential sources. Western provided multiple updates on these activities, including a letter on October 18, 2013 that specifically discussed the identification of the release from the transmix/slop transfer line and the excavation of soils from this location.

Western has also added a description for another leak identified in a slop oil line a short distance to the north of the location identified in August 2013. On November 19, 2015, during an inspection of the area a leak was identified in a slop oil line. The line was isolated, blocked in and taken out of service. As the ground was frozen at the time, only a small volume



(approximately 2.5 barrels) of product and wash water was collected at the surface with a vacuum truck.

The identification of the leaking lines in the marketing tank farm, which was already identified as an Area of Concern by NMED in the October 2013 RCRA Permit, did not result in the identification of a potential new SWMU or AOC.

Soil samples were collected from the bottom of the excavation, but there has not been a specific investigation of soil in the immediate area of the release. As you noted above, this area is already scheduled for submittal of an investigation work plan. Additional discussion on the excavation and sampling is included in Section 2.1.

#### **NMED Comment 8**

On page 2-3 the Permittee states, "[a] camera survey was conducted on multiple segments of the sewer line in the western portion of the refinery on August 27 and 28, 2013. Based on this visual inspection, a hole in the sewer line was identified approximately 20 feet south of the sewer box on the west side of the bundle cleaning pad." Revise the Report to discuss whether the camera survey was only conducted in the western portion of the refinery or if it included other areas of the sewer line. Please also explain if any other issues were noted that may not have been addressed by the removal of the corroded section of line. If available, provide still pictures from the video showing the corrosion and holes in the pipe. Additionally, provide information regarding the disposition of the section of pipe removed.

#### **Western Response:**

As originally noted in the report in Section 2.1, the sewer line inspection was conducted in the western portion of the facility to identify possible sources for the hydrocarbon seep. An additional sentence has been added in Section 2.1 to further note the survey was conducted only in the western portion of the refinery. No other issues were identified with the camera survey. A copy of the report generated from the camera inspection of the sewer lines has been included in Appendix G.

The removed section of pipe was pressure washed and sent off-site as scrap metal.

#### **NMED Comment 9**

On page 2-4 under the Source Control Measures heading, the Permittee discusses the soil excavations which were left open to facilitate the recovery of hydrocarbons and groundwater. Revise the Report to include descriptions of the depths of the excavations as well as information regarding the depth of the six-inch PVC screens inserted into the excavations for recovery of liquids. The Permittee must discuss whether or not hydrocarbons are still being recovered from excavation sumps S1 through S6. See also Comments 2 and 3.

#### **Western Response:**

In the Executive Summary (last paragraph), we explain that "interim measures are on-going to recover SPH and identify any additional potential sources." Also, in the referenced discussion on page 2-4, we state, "The groundwater and any hydrocarbons that enter the sumps are removed . . . ." This is an on-going activity and the report is updated with the most current recovery volumes.

The pits were excavated to various depths with most up to approximately 10 feet deep. The six



pits that were completed as recovery sumps with well screen placed in them are 10 to 11 feet deep. The six-inch PVC well screen was placed in the bottom of the six excavations before being backfilled with coarse gravel. New Table 7 was added to provide construction details for the sumps.

#### **NMED Comment 10**

NMED notes that its concern regarding Tanks 101 and 102 as a potential source is partially addressed by the Permittee's fuel distillation curve; however, as stated in correspondence dated November 8, 2013, NMED questions the quality of Western Refining's in-house laboratory results and requires a fuel fingerprint conducted by an independent, analytical laboratory which has not been certified by the National Environmental Laboratory Accreditation Conference (NELAC) or demonstrated consistent comparability with off-site laboratory results in the past. Additionally, the cleanup of a spill at Tanks 101 or 102 resulted in the original seep being discovered in 2007; it does not appear that the Permittee conducted any soil or groundwater sampling in the area where the 2007 seeps were discovered during the current seep investigation. This source and migration pathway may still exist and must be investigated. NMED also notes that all of the contours for the contaminant plumes stop at these tanks; these figures are likely not accurate depictions of the contaminant plumes due to the absence of data. The Permittee must propose to investigate the potential contamination at Tanks 101 and 102 in the revised Report.

#### **Western Response:**

Regarding Tanks 101 and 102 as potential sources, Tank 102 was taken out of service and an internal inspection was conducted in June 2015. A new internal liner was installed in Tank 102 to ensure against any potential for future releases. Tank 101 is currently undergoing an internal inspection and any necessary repairs will be implemented to ensure it is not a source. The preponderance of the information available at this time indicates the hydrocarbon observed at the seeps is other than crude oil.

NMED requires "a fuel fingerprint conducted by an independent, analytical laboratory which has not been certified by the National Environmental Laboratory Accreditation Conference (NELAC) . . . ." Western assumes the reference to a lab that has not received NELAC accreditation is a typographical error and in fact such analysis by an accredited lab is desirable. This analysis was included in Appendix D of the Interim Measures Report. Please see laboratory report #1307269-001 (Seep Hole#6). We have also included a copy of the chromatogram from the 8015 analysis in Appendix D with the analysis.

Western has continued to collect additional SPH samples for distillation analyses. The new graph is included as Figure 3A and is discussed in Section 2.1. This includes more recent samples from the sumps in April and June, 2016, a location on the east side of the seep area (East Seep), a northern seep location from recent excavations (N. Seep Pit 3), and wells MKTF-7 and MKTF-15. Early, mid, and late distillation results are included for a diesel reference sample. All of the results continue to reflect the presence of petroleum products.

The recent investigation of the seep area did include the same general area as NMED refers to as being discovered in 2007, which was expanded over a much larger area. The data collected by Western shows that the earlier identification of a seep in the same general area was most likely sourced by the leaking wastewater line identified near the Bundle Cleaning Pad and possibly the leaking transmix and slop oil lines, although efforts are on-going to identify any other potential sources.



See response to Comment No. 5 above for discussion on additional investigation near the crude oil tanks.

#### **NMED Comment 11**

On page 2-5, the Permittee states, "[t]he overall excavation was approximately 180 feet long, 20 feet wide and up to 12 feet deep and is depicted in Figure 4." In the next paragraph the Permittee states, "[a] total volume of 278 cubic yards of non-hazardous soil was disposed off-site at the Gandy Marley, Inc. landfill in Chaves County, New Mexico." NMED understands that the variability of the bottom of the final excavation, the presence of the pipe, and backfill will affect the volume of soil removed, but it seems that 278 cubic yards of excavated soil may be an underestimation or miscalculation based on the dimensions of the excavation. Provide a description of the wastewater pipeline dimensions and also the disposition of the wastewater pipeline. Please revise the Report to provide a corrected volume estimate or address this concern in the comment response letter as part of the revised Report submittal.

#### **Western Response:**

The portion of the wastewater pipeline that was replaced was 8" ductile iron pipe. The removed section of pipeline was pressure washed and sent off-site as scrap metal.

An additional volume of soils beyond the initial reported volume of 278 cubic yards was disposed off-site. The excavation was 20 feet at its widest point and up to a maximum of 12 feet deep. As shown in the site photos in Appendix B, the pipeline was located near the bottom of the excavation. The total volume sent off-site was 830 cubic yards and Section 2.2 has been revised to reflect the final disposal volume.

#### **NMED Comment 12**

The Permittee collected four soil samples from the intersection of the sidewall and floors on all four sides of the excavation to the west of the Heat Exchanger Bundle Cleaning Pad. The laboratory reports show the sample identifications as 'Pit-North-9', Pit-East-9', Pit-South-9, and Pit-West-9'." If parts of the excavation went to depths of up to 12 feet, the Permittee should have collected samples from the deepest part of the excavation. Generally, confirmation samples should be collected from the sidewalls as well as the bottom of the excavation. No revision to the Report is required.

#### **Western Response:**

Western acknowledges NMED's comment regarding collection of confirmation samples. These samples were not intended to demonstrate attainment of final remediation goals, but rather to provide very basic information on concentrations of potential contaminants remaining in soils in the area of the pipeline release.

#### **NMED Comment 13**

Table 2 (Chemical Analyses) demonstrates that the groundwater at the facility is impacted by total petroleum hydrocarbons as well as solvents and polycyclic aromatic hydrocarbons (PAHs). Revise the Report to include discussion of the groundwater analytical results.

- I. The analytical results for MKTF-9 (SB13) reveal that concentrations of trichloroethene (TCE) above the regulatory limit are present in the groundwater. TCE was also detected at concentrations above the maximum contaminant level (MCL) in groundwater monitoring wells MKTF-2, MKTF-4, MKTF-25 and MKTF-37. Discuss the



- possible sources of TCE at the facility.
2. Vinyl chloride is consistently detected in groundwater at concentrations above standards in well MKTF-11 with other detections above cleanup levels in other groundwater monitoring wells, but not with any consistency. 1,2-Dichloroethane (EDC) was also detected in the groundwater. Discuss the possible source(s) of chlorinated solvents at the facility. Since EDC is a lead scavenger, the Permittee must add analysis for 1,2-Dibromoethane (EDB) in all monitoring wells where EDC has been detected; this change must be incorporated into the latest Facility-Wide Groundwater Monitoring Work Plan. The Permittee must use an analytical method capable of detecting EDB at concentrations less than 0.004 micrograms per liter (e.g., EPA Method 8011).
  3. Concentrations of 2-Methylnaphthalene are above the cleanup standard in groundwater monitoring wells MKTF-4, MKTF-9, MKTF-10, MKTF-11, MKTF-15, MKTF-16, MKTF-18, MKTF-19, MKTF-20, MKTF-22, MKTF-23, MKTF-36, and MKTF-37. 2-Methylnaphthalene was detected once in production well PW-3 in 2009; however, rather than being an anomaly, the result may be a consequence of contamination in soils and groundwater migrating to the Sonsela aquifer. Discuss the detection of 2-Methylnaphthalene.

Revise the Report to discuss the analytical results in more detail as well as discuss the plumes depicted in Figures 10 through 16 in the text. The Facility-Wide Groundwater Monitoring Plan must include proposed chemical analyses of groundwater samples for semi-volatile organic compounds (SVOCs) and volatile organic compounds (VOCs) in all wells downgradient from the Marketing Tanks and the Sewer/Contact Wastewater System.

**Western Response:**

1. The possible sources of the chlorinated solvents (e.g., TCE) observed in groundwater are discussed in Section 2.1.
2. The possible sources of chlorinated solvents are discussed in Section 2.1. The analysis for 1,2-dibromomethane using EPA Method 8011 has been incorporated into the 2016 Facility-Wide Groundwater Monitoring Work Plan, which was submitted to NMED in May 2016.
3. There is no reason to believe there is a connection between the presence of 2-methylnaphthalene in the shallow groundwater and the production interval of PW-3. The total depth of PW-3 is 1,020 feet and the well produces water from the San Andreas/Yeso aquifer, which is not in hydraulic communication with the Chinle/Alluvial aquifer or the Sonsela aquifer, which are both at much shallower depths.

The report has been revised in Section 2.3 to include more discussion on analytical results. The Facility-Wide Ground Water Monitoring Work Plan already includes analyses for VOCs and SVOCs in all the down-gradient wells.

**NMED Comment 14**

NMED notes that SVOCs were not included in the analytical suite for the soil samples collected for confirmation and waste disposal. In the revised Report discuss the reasons



why SVOCs were not analyzed. In the future, SVOC testing must be included in the laboratory analytical suite for soil samples.

**Western Response:**

Actually, many of the soil samples collected for confirmation and waste disposal did include SVOCs. Laboratory report no. 1306C03 (Excavated Soil/Tar/Pit Samp W) included TPH via method 8015, TCLP VOCs by method 8260/1311, TCLP SVOCs by method 8270/1311, TCLP RCRA metals by methods 6010/1311 and 7470/1311, and reactivity, corrosivity, and ignitability. Laboratory report no. 1307524 (Soil Pile Behind 101/102) was analyzed for TPH via method 8015, TCLP VOCs by method 8260/1311, TCLP SVOCs by method 8270/1311, TCLP RCRA metals by methods 6010/1311 and 7470/1311, and reactivity, corrosivity, and ignitability. Laboratory report no. 1311343 (Pit-North-9', Pit-East-9', Pit-South-9', and Pit-West-9') included total analyses for TPH via method 8015, VOCs by method 8260, SVOCs by method 8270, and Skinner List metals by methods 6010 and 7470.

**NMED Comment 15**

On page 2-8 the Permittee states, "[b]ased on well development and sampling efforts, many of the wells do not produce significant volumes of water with the exception of wells located near the sanitary lagoon." The Permittee did not provide boring logs or well construction diagrams for the STP-wells. In the revised Report provide the boring logs and well construction details for STP1-NW and SW. Revise the Report to discuss whether or not the water levels at the sanitary lagoon are currently elevated due to the leaking system or if the water levels are not affected by refinery operations. The Permittee must discuss whether or not the sanitary lagoon is leaking and whether or not saturated zones were encountered when constructing STP-1. Also identify the other monitoring wells which are not producing water and monitoring wells with low recharge rates (i.e., name the wells with low recharge, provide the flow rate). Propose to install groundwater wells at depths that intersect the water table.

**Western Response:**

Apparently there is some confusion over the reference to "sanitary lagoon." Western was not referring to the relatively new Sanitation Treatment Pond (STP), which was built in conjunction with the new wastewater treatment plant and is approximately 800 feet north of the northern extent of the hydrocarbon seep plume. The "sanitary lagoon" that is referred to in the Interim Measures Report is actually a small lagoon located 400 feet west of the crude oil storage tanks (T-101 and T-102). The sanitary lagoon (identified as Sanitary Lagoon #2 in earlier site documentation) located west of the crude oil storage tanks receives a small flow of sanitary wastewater from the warehouses, lab building and firehouse.

Groundwater samples are collected from the MKTF wells each quarter and during these events, the wells are purged prior to sample collection. During the purging of the wells, we are able to get a general indication of the ability of the wells to produce water. The notes from recent purging events are included in Appendix F. In addition, yield tests are being conducted on some of the wells to determine possible recovery rates.

**NMED Comment 16**

The groundwater level measurements presented in Table 1 are variable. For example:



MKTF-01	Top of Casing (ft msl)	Depth to HC (ft btoc)	Depth to GW (ft btoc)	Hydrocarbon Thickness (ft)	Corrected GW Elev.	Difference
7/11/2013	6920.67	ND	6.60	0.00	6914.07	
7/12/2013	6920.67	ND	6.60	0.00	6914.07	0
7/17/2013	6920.67	ND	6.80	0.00	6913.87	-0.2
8/14/2013	6920.67	ND	9.19	0.00	6911.48	-2.39
9/25/2013	6920.67	5.44	6.36	0.92	6915.04	3.56
11/20/2013	6920.67	ND	6.64	0.00	6914.03	-1.01
1/13/2014	6920.67	7.90	8.34	0.44	6912.68	-1.35
2/12/2014	6920.67	6.73	6.74	0.01	6913.94	1.26
3/11/2014	6920.67	6.10	6.38	0.28	6914.51	0.57
4/8/2014	6920.67	7.05	7.25	0.20	6913.58	-0.93
9/15/2014	6920.67	6.94	6.98	0.04	6913.72	0.14
3/11/2015	6920.67	ND	5.85	0.00	6914.82	1.1
6/9/2015	6920.67	ND	7.15	0.00	6913.52	-1.3

Revise the Report to explain the variability in the groundwater elevations.

#### **Western Response:**

Section 2.3 of the report has been revised to discuss the variations in the measured water levels. It is noted that it is common for water levels to undergo natural fluctuations in shallow unconfined systems. Also, as SPH enters a well the measured "water level" will lower, thus recording a change in the "depth to groundwater" that is not reflected to the same extent in the corrected groundwater elevation. In this particular setting, it is most likely that the water levels change as the result of precipitation events, as there is no use of the shallow groundwater in this area. Some wells may see the effect of making repairs to the sewer line with decreased fluid levels but the measurement period may not yet be sufficient to discern any such changes from variations in precipitation.

#### **NMED Comment 17**

The hydrocarbon thickness measurements for groundwater monitoring well MKTF-15 (SB31) indicate that SPH was not observed from November 2013 through September 2014; however, in March 2015 and June 2015 hydrocarbons were detected at 0.75 feet and 0.58 feet thickness respectively. MKTF-15 is located just east of the crude tanks (Tank 101 and Tank 102) and is one of the closest groundwater monitoring wells to both the Marketing Tanks and to the Sewer line leak. Revise the Report to discuss the apparent lag in detection of hydrocarbons in the groundwater monitoring well located closest to the sources of the seep.

#### **Western Response:**

The text in Section 2.3 has been revised to discuss the occurrence of SPH in MKTF-15. It is noted that it is not uncommon for SPH to not enter some monitoring wells shortly after well installation, although it is observed in the screened formation during drilling. For example, MKTF-01 and MKTF-07 also show SPH entering the well awhile after the wells were installed. A review of the dissolved-phase analyses clearly shows high concentrations of hydrocarbons at MKTF-15 after well installation and well before SPH entering the well casing. It is not clear if the



delayed entrance of SPH into the well screen at MKTF-15 is an indication of a change in SPH composition or thickness in the screened formation, or if it was just slow to enter the well due to location-specific conditions (e.g., relative viscosity of the SPH, formation physical properties, etc.).

#### **NMED Comment 18**

The boring and well completion logs for MKTF-27 and MKTF-28 do not demonstrate that any moist or saturated intervals were encountered (although the borings were described as "damp" throughout the soil column) nor is there a water level recorded on the log. However, groundwater samples were collected according to laboratory results in Table 2 and the laboratory reports in Appendix D. Discuss the water levels in these wells and whether or not the wells are screened across the water table. Additionally, if there are other wells that were installed without the presence of groundwater at the time of installation, the Permittee must discuss water levels relative to the screened intervals at those groundwater monitoring wells (many of the well logs indicate "saturation" rather than a water level, discuss whether a water level was measured at the time of installation and whether or not the well screen intersects the water table).

#### **Western Response:**

The requested discussion has been included in Section 2.3. It is noted that wells MKTF-42, MKTF-43, and MKTF-44 did not have an indication of saturated intervals during well installation, but water did eventually enter the wells after completion. The soil boring logs generally record the presence of saturated soils and data tables (e.g., Table 1) are used to record water level measurements.

The table shown below compares the fluid levels measured in these wells to the screen intervals with levels above the top of the screen highlighted. MKTF-27 and MKTF-42 have water levels that fall within the screened intervals. The water levels in wells MKTF-28 and MKTF-43 fluctuate near the top of the screen intervals, while the water level in MKTF-44 has recovered to above the top of the well screen. The dissolved-phase analyses at wells MKTF-28, MKTF-43, and MKTF-44 are all either very low or non-detect without any indication of SPH being present in the area of these wells.

Well ID	Date	Top of Casing to Ground Elevation Adjustment	Measured Depth to SPH	Measured Depth to GW	Depth to SPH from Ground Elevation	Depth to GW from Ground Elevation	Well Screen Interval
		(ft)	(ft btoc)	(ft btoc)	(ft bgs)	(ft bgs)	(ft bgs)
MKTF-27	11/20/13	2.54	ND	8.26	ND	5.72	2-12
	04/08/14		ND	7.42	ND	4.88	
	09/23/14		ND	8.60	ND	6.06	
	03/11/15		ND	7.10	ND	4.56	
	06/09/15		ND	7.44	ND	4.90	
	08/20/15		ND	7.85	ND	5.31	
	11/04/15		ND	7.53	ND	4.99	
	02/22/16		ND	7.20	ND	4.66	

	06/08/16		ND	7.51	ND	4.97	
MKTF-28	04/09/14	2.85	ND	DRY	ND	DRY	3-13
	09/23/14		ND	6.20	ND	3.35	
	03/11/15		ND	6.64	ND	3.79	
	06/09/15		ND	5.40	ND	2.55	
	08/20/15		ND	6.42	ND	3.57	
	11/04/15		ND	5.74	ND	2.89	
	02/23/16		ND	5.32	ND	2.47	
	06/08/16		ND	5.28	ND	2.43	
MKTF-42	11/17/14	2.53	ND	18.79	ND	16.26	10-30
	03/11/15		ND	17.94	ND	15.41	
	06/09/15		ND	17.60	ND	15.07	
	08/21/15		ND	17.44	ND	14.91	
	11/05/15		ND	17.26	ND	14.73	
	02/24/16		ND	17.69	ND	15.16	
	06/09/16		ND	17.30	ND	14.77	
MKTF-43	11/17/14	2.78	ND	6.95	ND	4.17	2-12
	03/11/15		ND	5.20	ND	2.42	
	06/10/15		ND	3.63	ND	0.85	
	08/21/15		ND	3.80	ND	1.02	
	11/05/15		ND	5.12	ND	2.34	
	02/24/16		ND	5.00	ND	2.22	
	06/09/16		ND	3.67	ND	0.89	
MKTF-44	11/17/14	2.54	ND	48.80	ND	46.26	38-48
	03/12/15		ND	38.44	ND	35.90	
	06/10/15		ND	29.55	ND	27.01	
	08/17/15		ND	31.23	ND	28.69	
	11/09/15		ND	33.32	ND	30.78	
	02/24/16		ND	28.74	ND	26.20	
	06/09/16		ND	27.83	ND	25.29	

#### **NMED Comment 19**

Figure 12 (Dissolved Iron Concentration) shows three elevated areas of dissolved iron in groundwater that generally correlate to the two suspected release areas and to an area just south of Tanks 101 and 102. Please revise the Report to discuss whether or not the third area containing elevated dissolved iron concentrations can be correlated to any underground piping in that area or releases of petroleum-related contaminants.

#### **Western Response:**

As part of the on-going activities to identify potential source areas for the hydrocarbon seep, Western identified leaking underground pipelines to the east of this area, but none in this particular location. The pipelines, which were used to transfer transmix and slop oil,



were taken out of service and are discussed in Section 2.1.

**NMED Comment 20**

Figure 13 displays MTBE concentrations and clearly demonstrates that MTBE was released in the vicinity of the Main Loading Racks/Crude Slop (Transmix) and Ethanol Unloading Facility/Loading Rack Additive Tank Farm. Revise the Report to include information about historic use of MTBE at the facility and discuss how and where the MTBE was stored and conveyed at the facility.

**Western Response:**

Section 2.3 has been revised to include a discussion on MTBE. MTBE has not been used or stored at the refinery since 2006, thus there is not an active primary source for the observed MTBE impacts. MTBE was previously off loaded at the railroad loading rack and stored in Tank TK-568 and conveyed via pipeline to Marketing Tank 6 (MKT-TK-06). Neither of these tanks has been found to have any leaks. The last internal inspection at MKT-TK-06 was conducted in October 2014 and the last internal inspection at TK-568 was completed in February 2006. Tank TK-568 has been used to store ammonium thiosulfate since 2005 and Marketing Tank 6 is used to store ethanol.

**NMED Comment 21**

Appendix C contains the well survey report from DePauli Engineering. The well surveys for MKTF 35 through MKTF 45 are not included. Provide the well survey data for these wells in the revised Report.

**Western Response:**

The survey information for wells MKTF-35 through MKTF-45 was included as the last page of Appendix C. The elevations are indicated as the "Z" values and are listed for each well along with the northing and easting coordinates.

**NMED Comment 22**

Because the investigation is not yet complete, the Permittee must revise the Report to propose providing quarterly status reports regarding product recovery, planned additional measures and efforts to address leaking pipes or tanks at the Main Truck Loading Racks.

**Western Response:**

The groundwater plume has been delineated with the exception to the north in the vicinity of Tank 102 and efforts to identify primary sources are on-going. Western will provide quarterly status reports on the on-going activities starting with the third quarter of 2016.

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

Certification

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

Sincerely,



Mr. Daniel J. Statile  
VP Refining  
Western Refining Southwest, Inc. – Gallup Refinery



Ed Riege  
Remediation Manager  
Western Refining Southwest, Inc. – Gallup Refinery

cc     D. Cobrain NMED HWB without enclosure  
       N. Dhawan, NMED HWB without enclosure  
       K. Van Horn, NMED HWB without enclosure  
       C. Chavez, OCD  
       L. King, EPA without enclosure  
       A. Allen, Western El Paso



District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in  
accordance with 19.15.29 NMAC.

**Release Notification and Corrective Action**

**OPERATOR**

☒ Initial Report ☐ Final Report

Name of Company: Western Refining	Contact: Alvin Dorsey	
Address: 92 Giant Crossing Road	Telephone No. 505-722-3833	
Facility Name: Gallup Refinery	Facility Type: Petroleum Refinery	
Surface Owner	Mineral Owner	API No.

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County McKinley
-------------	---------	----------	-------	---------------	------------------	---------------	----------------	--------------------

Latitude: **35°029'024"** Longitude: **108°024'024"**

**NATURE OF RELEASE**

Type of Release: Oil/Steam	Volume of Release: 13 bbls (1.5 bbls of the 13 bbls released contacted soil)	Volume Recovered: Pending
Source of Release: Check valve to 40# Steam to Secondary Column	Date and Hour of Occurrence: 07/23/16 @0410 hrs	Date and Hour of Discovery: 07/23/16 @0410 hrs.
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom: OCD – B Powell 07-23-16@0904 hrs; NMED – P Evans 07-23-16@0859 hrs; OCD – C Chavez 7/23/16@0902 hrs.	
By Whom?	Date and Hour 07/23/16 (0859, 0902 and 0904 hours)	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

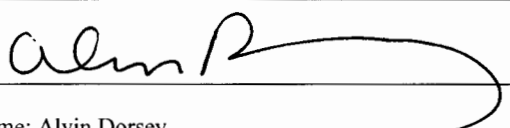
If a Watercourse was Impacted, Describe Fully.\* N/A

Describe Cause of Problem and Remedial Action Taken.\* In the aftermath of the power failure, at approximately 0410 hours on 7/23/16, a check valve on the 40# steam to the secondary column failed in the Gas Con Unit. Failure of check valve caused oil to back into the 40# steam header causing the PRV (pressure relief valve) to open at 49 pounds for approximately 10 minutes, releasing oil/steam mixture into atmosphere over the Gas Con unit. Release of oil/steam mixture from PRV sprayed out over equipment, onto a concrete surface and ground surface. Operator immediately blocked in the 40# steam to the secondary column and the PRV reseated. Fire monitors were started to knock down any vapor created by the oil/steam mixture. There were no injuries or fires that occurred during this incident.

Describe Area Affected and Cleanup Action Taken.\* Miscellaneous equipment in the Gas Con area were covered with the release of oil/steam from the PRV. (Alvin – you will need to find out what was done as far as clean up goes and if the vac truck was dispatched to pump out any fluids)

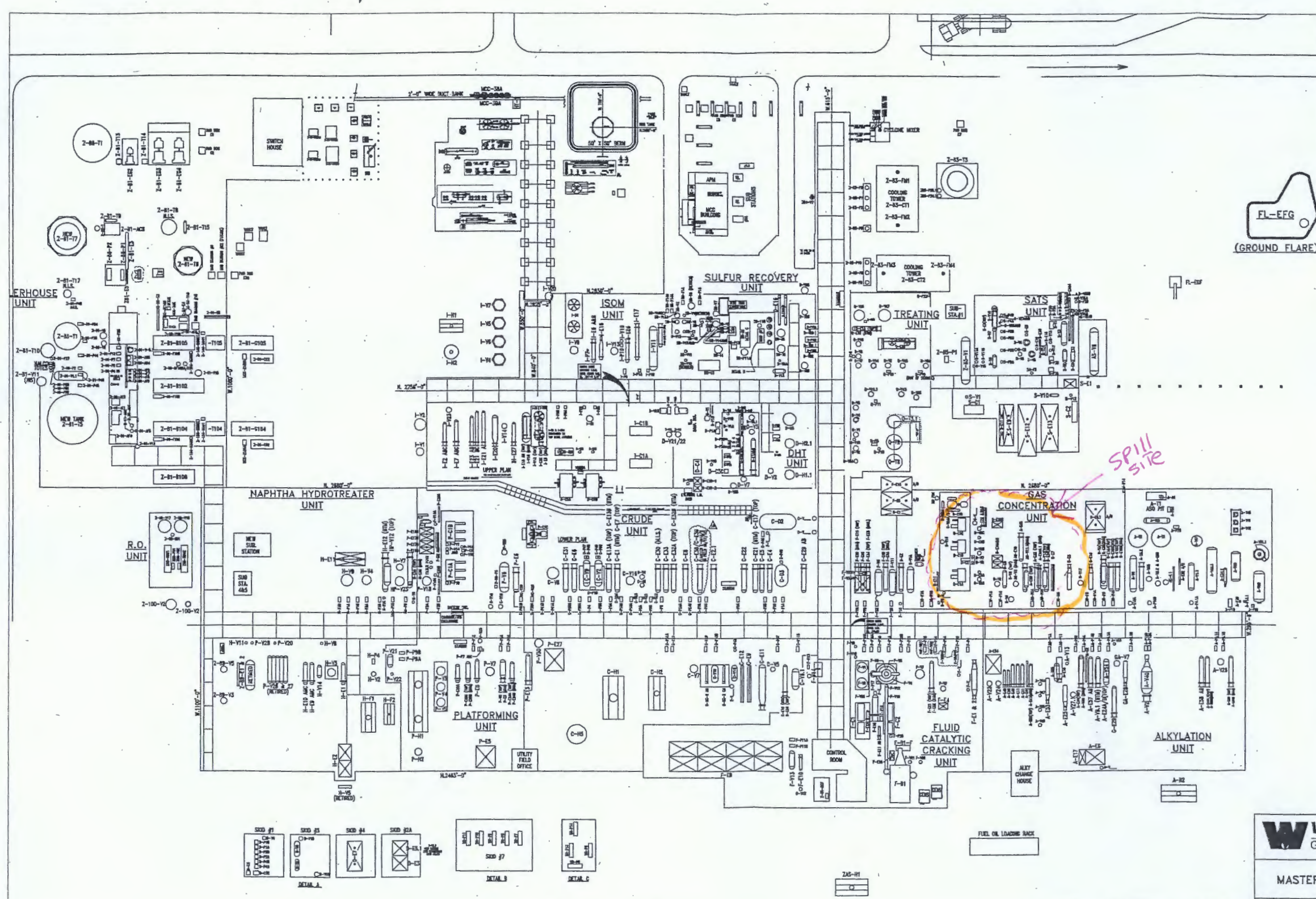
( release volume calculation in pending update to follow)


I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	<b>OIL CONSERVATION DIVISION</b>		
Printed Name: Alvin Dorsey	Approved by Environmental Specialist:		
Title: Environmental Specialist	Approval Date:	Expiration Date:	
E-mail Address: <a href="mailto:Alvin.Dorsey@wnr.com">Alvin.Dorsey@wnr.com</a>	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 07-26-16	Phone: 505-722-0211		

\* Attach Additional Sheets If Necessary





**Western Refining**  
Gallup Refinery

MASTER EQUIPMENT PLOT PLAN

SCALE: 1/32" = 1'-0"

DATE: 28SEP00

DRAWN BY: C.L.W.

CHK'D: T.D.W.

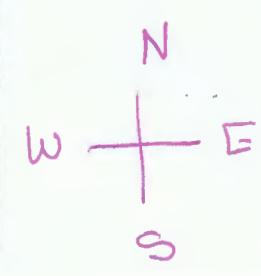
APRVD:

BY: APRVD

TDWG NO. Z-35-104

REV. 14

MARK	DATE	DESCRIPTION	BY	APRVD
1A	11/2/01	UPDATED	AJA	





District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
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State of New Mexico  
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1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in  
accordance with 19.15.29 NMAC.

**Release Notification and Corrective Action**

**OPERATOR**

☒ Initial Report ☐ Final Report

Name of Company: Western Refining	Contact: Alvin Dorsey	
Address: 92 Giant Crossing Road	Telephone No.: 505-722-3833	
Facility Name: Gallup Refinery	Facility Type: Petroleum Refinery	
Surface Owner	Mineral Owner	API No.

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
-------------	---------	----------	-------	---------------	------------------	---------------	----------------	--------

Latitude 35°029'024" Longitude 108°024'024"

**NATURE OF RELEASE**

Type of Release: Tank 106 - Distillate	Volume of Release > 5 bbls	Volume Recovered: 12,000 gal distillate/water mixture
Source of Release: Tank overflow	Date and Hour of Occurrence: 07-23-2016 @2130 hours	Date and Hour of Discovery: 07-23-2016 @ 2130 hours
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom: OCD-C Chavez 7/23/16 @ 0030 hrs; OCD-B Powell 7/23/16 @ 0034 hrs; NMED P Evans 7/23/16 @ 0028 hrs	
By Whom?	Date and Hour: 7/23/16 @ 0028 hrs, 0030 hrs, 0034 hrs.	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	

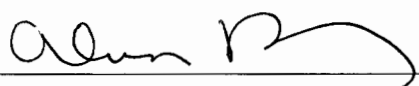
If a Watercourse was Impacted, Describe Fully.\* No.

Describe Cause of Problem and Remedial Action Taken.\* On 7/23/16 at approximately 2100 hours, pumper checked Varec gauge on Tank 106 as Tank 106 was receiving distillate product rundown from Tank 228. At 2130 hours, product was discovered on the ground surface mixed in with rain water. Overflow was contained within an earthen berm. Upon discovery at 2130 hours by Pumper, he immediately shutdown the transfer to Tank 106. Off Site Supervisor, Environmental were notified. Maintenance was notified to dispatch the vacuum truck to vacuum up product/liquid mixture inside earthen berm. Site samples will be collected at location of spill and clean-up of contaminated soil will begin. Coordinates are as follows for location of Tank 106: Latitude: 35°29'21.70"N: Longitude: 108°25'39.62"W. There were no injuries or fires that occurred during the spill. A map depicting area of spill is attached to this form.

Describe Area Affected and Cleanup Action Taken.\*

Tank 106 is located directly south of Tank 235 with an earthen berm around both tanks sharing one cell. Soil samples have been collected from spill site and clean-up of contaminated soil will commence. Another set of soil samples will be collected after stained soil has been removed to determine extent of contamination. Estimated contamination of area inside the cell is: 140ft x 70 ft = 9800 ft. A total of 12,000.00 gallons of distillate/water mixture was vacuumed from inside the containment area.

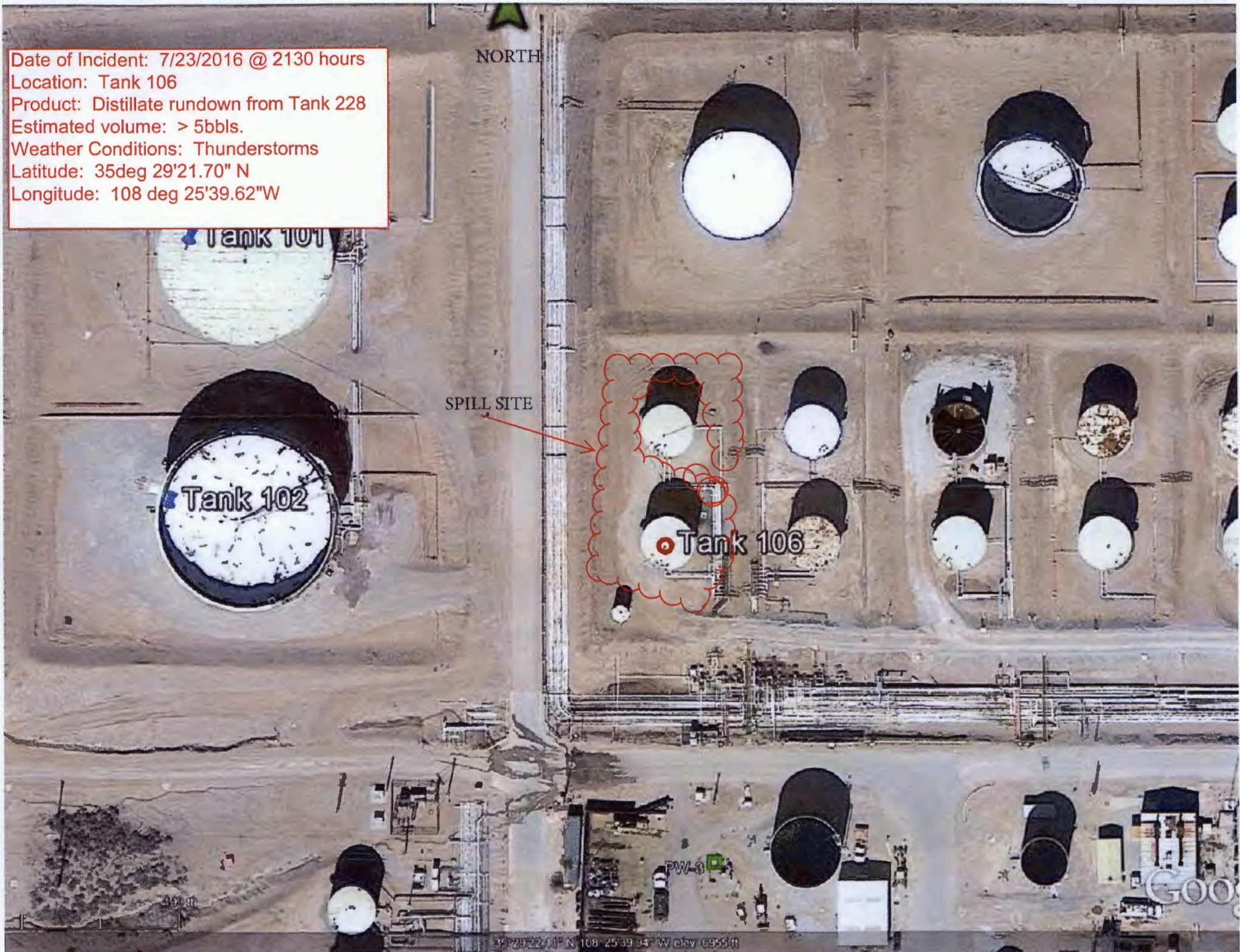
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	<b>OIL CONSERVATION DIVISION</b>		
Printed Name: Alvin Dorsey	Approved by Environmental Specialist:		
Title: Environmental Specialists	Approval Date:	Expiration Date:	
E-mail Address: <u>Alvin.Dorsey@wnr.com</u>	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 07-26-16	Phone: 505-722-0211		

\* Attach Additional Sheets If Necessary



Date of Incident: 7/23/2016 @ 2130 hours  
Location: Tank 106  
Product: Distillate rundown from Tank 228  
Estimated volume: > 5bbbls.  
Weather Conditions: Thunderstorms  
Latitude: 35deg 29'21.70" N  
Longitude: 108 deg 25'39.62"W





## Chavez, Carl J, EMNRD

---

**From:** Dorsey, Alvin <Alvin.Dorsey@wnr.com>  
**Sent:** Wednesday, July 27, 2016 2:09 PM  
**To:** Chavez, Carl J, EMNRD  
**Subject:** FW: 3 Release Notification Western Refinery Gallup

---

**From:** Dorsey, Alvin  
**Sent:** Wednesday, July 27, 2016 2:03 PM  
**To:** 'Kristen.VanHorn@state.nm.us' <Kristen.VanHorn@state.nm.us>; 'Carl.Chavez@state.nm.us' <Carl.Chavez@state.nm.us>; 'john.kieling@state.nm.us' <john.kieling@state.nm.us>; 'dave.cobrain@state.nm.us' <dave.cobrain@state.nm.us>  
**Cc:** Gieser, Bernie (CTR) <Bernie.Gieser.ctr@wnr.com>; Johnson, Cheryl <Cheryl.Johnson@wnr.com>  
**Subject:** 3 Release Notification Western Refinery Gallup

Kristen,

The following are three release incidents that occurred over the weekend that were not reported to the NMED-HWB. Notifications were given to NMED – AQB – Peggy Evans , Brandon Powell – NMED, and Carl Chavez NM OCD on all three incidents and I inadvertently overlooked notifying personnel at the NMED – HWB.

1. Western Refinery Plant wide Power Outage.

On 07/22/2016 at 7:10 pm, Gallup Refinery had a power outage refinery wide due to lightning. Several units were shutdown to stabilize the refinery. There were excess emissions of SO<sub>2</sub>, NO<sub>x</sub>, CO and H<sub>2</sub>S from the flare and opacity, pm and CO emissions from the FCCU and COB. Initial Excess Emissions Report 000888-07252016-01 was submitted on 7-25-16. Final emissions to be calculated in the final report. No personnel injures or fires occurred during this outage. Final release volume will be updated as soon as it becomes available.

2. Gas Con Area Tower outage oil leak July, 23, 2016.

In the aftermath of the power failure, a check valve on the 40# Steam to the Secondary Column failed , causing oil to back into the 40# steam header. The 40# steam PRV relieved causing a mixture of oil and steam that was released to atmosphere over the GAS CON unit and equipment for about 10 minutes. The fire monitors were turned on to dissipate the vapors caused by the release of oil/steam mixture from the PRV. Majority of the release of oil occurred on a concrete slab and various equipment in the vicinity. No personnel injures or fires occurred. At this time final release volume is still being determined. Form C-141 will be completed for this incident and forwarded to appropriate agencies.

3. Diesel Tank 106 Overflow July, 23, 2016, 9:30PM.

Pumper discovered distillate overflowing from Tank 106 onto the ground surface inside a contained earthen berm. At time of discovery, weather conditions included rain showers which obscured the amount of distillate that had spilled to the ground surface. At the initial discovery, it was estimated that greater than 5 BBLS of distillate had been spilled. Pumper immediately shut off the transfer of this product from Tank 228 and notified immediate supervisor and the environmental person on call. Maintenance personnel were also notified to initiate clean-up which included the use of a vacuum truck to remove spilled product mixed with water. No personnel injuries

or fire occurred during this incident. Final release volume of spilled distillate product is still being determined at this time. Form C-141 will be completed for this incident and forward to appropriate agencies.

If you have any questions, please call or e-mail.

Alvin Dorsey

Environmental Specialist

Western Refining  
Gallup Refinery

92 Giant Crossing Road  
Gallup, NM 87301  
(505) 722-0211 (direct)

(505) 722-3211 (ext)

[Alvin.Dorsey@wnr.com](mailto:Alvin.Dorsey@wnr.com)

[www.wnr.com](http://www.wnr.com)

## Chavez, Carl J, EMNRD

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Tuesday, July 26, 2016 2:24 PM  
**To:** CarlJ.Chavez@state.nm.us  
**Subject:** Western Refining SW, Inc. Gallup Refinery (AP-111) Verbal Notifications Received from Friday (7/22/16) through Sunday (7/24/16)

FYI:

Carl on 7/26 responded to verbal notifications from Alvin Dorsey at (505) 722-3833 or (505) 240-2747 regarding the following releases reported: 1) Friday (7/22) @ 7:59 pm power outage and air emissions due to storm; 2) Saturday (7/23) @ 9:04 am tower outage oil leak spill and gas release in Gas Con Area (concrete & gravel); and 3) Sun (7/24) @ 12:32 am Diesel Tank 106 overfilled by operator ~ 5 – 10 bbls of diesel into earthen tank berm containment area between 9:30 and 10 am Saturday (7/23). On number 3, instructed caller to excavate contaminated soils, sample at base and sides of excavation, and document final disposition of contaminated soils removed from earthen berm. Carl scanned verbal notifications into the thumbnail “C-141 3” in the Admin. Record.

Carl J. Chavez, CHMM  
Environmental Engineer  
Oil Conservation Division- Environmental Bureau  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505  
Phone: (505) 476-3490  
Main Phone: (505) 476-3440  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: [www.emnrd.state.nm.us/oed](http://www.emnrd.state.nm.us/oed)

Why not prevent pollution, minimize waste, reduce operation costs, and move forward with the rest of the Nation? To see how, go to “Publications” and “Pollution Prevention” on the OCD Website.

March 23, 2016

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

RE: RESPONSE ACTION REPORT, LPG Blowdown Tank  
WESTERN REFINING SOUTHWEST, INC. GALLUP REFINERY  
EPA ID # NMD000333211  
HWB-WRG-MISC

Dear Mr. Kieling:

The enclosed Response Action Report provides the detail and data for the removal of a Liquid Petroleum Gas (LPG) Blowdown Tank in the third and fourth quarter of 2014. In August 2014 the U.S. EPA conducted a RCRA inspection of the Gallup Refinery. During the inspection the EPA noted a partially buried tank in the area of the SWMU 9- Drainage Ditch and Inactive Landfarm Area. Western subsequently removed the tank and an associated junction box during the month of September 2014.

The enclosed report documents the ensuing removal of the tank and confirmation sampling. The report provides the applicable information required under Permit for Release Assessment Report Section IV.H.1.a.

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

#### Certification

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

Sincerely,



*for Billy McClain*

Mr. William Carl McClain  
Vice President and Refinery Manager  
Western Refining Southwest, Inc. – Gallup Refinery



cc K. Van Horn, NMED HWB with enclosure  
C. Chavez, OCD without enclosure

**RESPONSE ACTION REPORT  
LPG Blowdown Tank  
EPA Inspection – August 2014**



**Gallup Refinery  
Western Refining Southwest, Inc.  
Gallup, New Mexico  
EPA ID# NMD000333211**

**MARCH 2016**

A handwritten signature in black ink, reading 'Scott Crouch', is positioned above a horizontal line.

Scott Crouch  
Senior Geologist



**DiSorbo**  
Environmental Consulting Firm

**8501 North Mopac Expy**  
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**Suite 300**  
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**Austin, TX 78759**  
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## Response Action Report Checklist

Included	NA	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>Title Page</b>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>Executive Summary</b>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>Report Checklist</b>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>Table of Contents</b>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>Section 1 - Introduction</b>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>• General information about Gallup Refinery and Area of Release</li> </ul>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>• Description of the Release</li> </ul>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>• Characterization of Released Material</li> </ul>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>○ Discussion of the Unit / Process / Area of Release (as applicable)</li> </ul>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>○ Location of unit(s) on a topographic map of appropriate scale</li> </ul>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>○ Designation of type and function of unit(s)</li> </ul>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>○ General dimensions, capacities and structural description of unit(s) (supply any available plans/drawings)</li> </ul>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>○ Dates that the unit(s) was operated;</li> </ul>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>○ Specifications of all wastes that have been managed at/in the unit(s) to the extent available. Include any available data on hazardous waste or hazardous constituents in the wastes</li> </ul>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>○ All available information pertaining to any release of hazardous waste or hazardous constituents from such unit(s) (to include ground water data, soil analyses, air, and surface water data).</li> </ul>
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<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>• Soil Sampling – detailed discussion of sample collection and analysis</li> </ul>
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		<input checked="" type="checkbox"/> Figure - Sampling Locations (Soil, Wells, Surface Water)
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## Executive Summary

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The Gallup Refinery is located 17 miles east of Gallup, New Mexico. This Response Action Report provides the details and data for the removal of a Liquid Petroleum Gas (LPG) Blowdown Tank in the third and fourth quarter of 2014. In August 2014 the U.S. Environmental Protection Agency (EPA) conducted a RCRA inspection of the Gallup Refinery. During the inspection the EPA noted a partially buried tank in the area of the Solid Waste Management Unit (SWMU) 9 – Drainage Ditch and Inactive Landfarm Area. Western subsequently removed the tank and an associated junction box during the month of September 2014. Stained soils were observed immediately beneath the steel junction box.

Soil was excavated from beneath the tank and junction box areas and removed offsite for disposal. Soil confirmation samples were collected and analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) (method 8021), gasoline range and diesel range organics (method 8015), total petroleum hydrocarbons (Method 418.1), volatile organics (method 8260/1311), semivolatile organics (method 8270/1311) and RCRA metals (methods 7410 & 6010/1311). The Soil confirmation samples collected from the Tank Area after the tank removal were reported to contain concentrations of benzene, ethylbenzene, and xylenes that exceed the screening levels. The final soil confirmation samples collected from the Box Area after additional excavation detected only barium above the screening level.

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# Section 1

## Introduction

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

### 1.1 General Information

The Gallup Refinery generally processes crude oil from the Four Corners area transported to the facility by pipeline or tanker truck. Various process units are operated at the facility, including crude distillation, reforming, fluidized catalytic cracking, alkylation, isomerization, sulfur recovery, merox treater, and hydrotreating. Current and past operations have produced gasoline, diesel fuels, jet fuels, kerosene, propane, butane, and residual fuel.

### 1.2 Discussion of the Inspection

The U.S. Environmental Protection Agency (EPA) conducted a RCRA inspection of the Gallup Refinery from August 12 through August 14, 2014. During the inspection of Solid Waste Management Unit (SWMU) 9 – Drainage Ditch and Inactive Landfarm Area, the top hatch of a tank was discovered in the Inactive Landfarm Area. The tank was partially buried with a top hatch sticking out of the ground. The tank was gauged and was found to contain water with no phase-separated hydrocarbons present.

### 1.3 Characterization and Disposal of Tank Contents

A sample of the liquid found in the tank was collected on August 19, 2014 and delivered to Hall Environmental Analysis Laboratory, Inc. (HEAL) in Albuquerque, New Mexico. The liquid was analyzed for the following:

- Mercury – EPA Method 7470;
- Total Recoverable Metals – EPA Method 6010B;
- Semivolatile organics (SVOCs) – EPA Method 8270C;

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- 
- TCLP (toxicity characteristic leaching procedure) Semivolatiles – EPA Method 8270C/1311;
  - Volatile organics (VOCs) – EPA Method 8260B; and
  - TCLP Volatiles – EPA Method 8260B/1311.

On August 28, 2014 HEAL issued Analytical Report No. 1408B60. A copy of the report is provided in Appendix A. Table 1 provides a summary of the analytical results. The following constituents were reported to contain concentrations above the detection limit.

- Barium – 0.072 mg/L;
- Chromium – 0.41 mg/L;
- Benzoic acid – 0.610 mg/L;
- Benzyl alcohol – 0.320 mg/L;
- 3+4 Methylphenol – 0.021 mg/L;
- Naphthalene – 0.018 mg/L;
- Phenol – 0.017 mg/L;
- Benzene – 0.030 mg/L;
- Toluene – 0.300 mg/L;
- Ethylbenzene – 0.120 mg/L;
- 1,2,4-Trimethylbenzene – 0.260 mg/L;
- 1,3,5-Trimethylbenzene – 0.092 mg/L;
- n-Propylbenzene – 0.045 mg/L; and
- Xylenes, Total – 0.650 mg/L.

No constituents were reported above the detection limit for the TCLP volatiles analysis or the TCLP semivolatiles analysis. The results indicate that the tank contents were non-hazardous. The contents were removed using a vacuum truck and discharged in the refinery process sewer to be sent through the API separator and the Waste Water Treatment Plant.

#### **1.4 Description of the Area of Release**

The location of former LPG blowdown tank is shown on a topographic map (Figure 1). The location was recorded as N35° 29.570' and W108° 25.486'. This out-of-service tank was formerly utilized as a blowdown tank during Liquid Petroleum Gas (LPG) product sampling. The tank was used as a flow-thru process tank that allowed blowdown LPG to volatilize to atmosphere in a safe manner. The



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tank was taken out of service when the blowdown piping was connected to the refinery gas recovery system. The dates of operation are not known.

During removal of the LPG tank and associated junction box, stained soils were observed beneath the box. The steel tank is estimated to be approximately 8 feet in diameter and 12 feet long with an estimated capacity of 100 barrels. The steel junction box was approximately 4 feet by 4 feet in the horizontal plane and 4 feet deep. Based on the chemical analysis of the tank contents and the operational history of the tank and associated junction box, there is no indication of any releases of hazardous wastes.

### **1.5 Site Conditions That Affect the Release**

Local site topographic features include high ground in the southeast gradually decreasing to lowland fluvial plain in the northwest. Elevations on the refinery property range from 7,040 feet to 6,860 feet. The area of the site near the location of the tank is relatively flat and has an approximate elevation of 6,930 feet above mean sea level (msl). Figure 2 is an aerial photograph of the area around the LPG Blowdown Tank. Photographs are included in this report and show the land surface in the immediate area. The site conditions are not believed to have had any particular impact on the release of liquids from the tank and junction box, other than the clayey soils probably retarded the vertical migration.

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## Section 2

# Remediation Activities

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### 2.1 Excavation

Tank removal activities commenced on September 12, 2014 using a backhoe excavator. An associated junction box was discovered adjacent to the blowdown tank. The excavation for the tank measured approximately 18 feet by 27 feet at the surface with a depth of approximately 8.5 feet. The initial excavation for the junction box measured approximately 8.5 feet by 10 feet with a depth of approximately 4 feet. Photographs are included in Appendix B that depict the tank and junction box as well as the excavations.

Visually impacted soil was encountered beneath the smaller junction box during the excavation process. Based on the visual staining and analytical results from the initial samples collected beneath the tank, which are discussed below in Section 2.2, the initial excavation beneath the junction box was deepened to approximately 6 feet below the original ground surface. The impacted soils were temporarily staged on plastic sheeting in three individual soil piles, which were subsequently placed in a roll-off box for characterization and proper disposal. The tank and box removal activities were completed on by November 17, 2014.

On September 24, 2014 HEAL issued Analytical Report No. 1409871. A copy of the report is provided in Appendix A. The analysis demonstrated that the excavated soil was non-hazardous and could be disposed into the Northwest New Mexico Solid Waste Authority's Red Rock Landfill in Thoreau, NM. The analysis was submitted to Red Rock Landfill for their approval as Non-RCRA/Non-DOT Regulated Material Solid (TPH Soil). The excavated soil was placed into five separate roll-off boxes for disposal. Two bins shipped on 10/31/2014 (Manifest #'s D68510 & D68514). One bin shipped on 11/04/14 (Manifest # D68804), one bin shipped on 11/05/14 (Manifest # D68805), and one bin shipped on 12/02/14 (Manifest # D68914). A total of 68.94 tons of soils was shipped off site for non-hazardous waste disposal at the Red Rock Landfill. A copy of the waste manifests are included in Appendix C.

The demolished steel tank and steel box were removed offsite by a scrap metal recycler.

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## **2.2 Soil Sampling**

### **2.2.1 Excavated Soil Piles**

A composite sample was collected on September 15, 2014 from the three soil piles that were temporarily staged on plastic sheeting.

### **2.2.2 Tank Area**

On September 16, 2014 soil samples were collected from the floor of the excavation after removal of the steel LPG blowdown tank. Four discrete soil samples (Tank Area Location #1, Tank Area Location #2, Tank Area Location #3, and Tank Area Location #4) were collected using a decontaminated hand trowel. The samples were analyzed for BTEX (Method 8021B), gasoline range organics (GRO)/diesel range organics (DRO) (Method 8015B), total petroleum hydrocarbons (TPH) (Method 418.1), VOCs TCLP (Method 8260B/1311), SVOCs TCLP (method 8270/1311), reactivity, corrosivity and ignitability (RCI), and TCLP RCRA metals (Methods 6010, 7410 and 1311). Figure 3 depicts the sampling locations.

### **2.2.3 Box Area**

#### ***Sampling Event Number One***

On September 16, 2014 soil samples were collected using a decontaminated hand auger after the box was removed. The sample collection depth ranged from 18 inches to 24 inches below the bottom of the initial excavation, which was approximately 4 feet deep. Four discrete soil samples (Box Area Location #1, Box Area Location #2, Box Area Location #3, and Box Area Location #4) were collected. The samples were analyzed for BTEX, GRO/DRO, TPH (418.1), VOCs TCLP, SVOCs TCLP, RCI, and TCLP RCRA metals. Figure 3 depicts the sampling locations.

#### ***Sampling Event Number Two***

After additional excavation was conducted in the Box Area, on November 17, 2014 soil samples were collected from the bottom of the excavation at a depth of approximately 6 feet below the original ground surface. Four discrete soil samples (Box Area Location #A, Box Area Location #B, Box Area Location #C, and Box Area Location #D) were collected from the Box Area. The samples were analyzed for BTEX, GRO/DRO, TPH (418.1), VOCs TCLP, SVOCs TCLP, RCI, and TCLP RCRA metals. Figure 4 depicts the sampling locations.



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### ***Sampling Event Number Three***

On April 17, 2015 soil samples were collected from the same bottom surface of the excavation from which samples were collected on November 17, 2014. These samples were submitted for totals analyses instead of TCLP analyses for comparison to screening levels. Four discrete soil samples (Box Area Location #A, Box Area Location #B, Box Area Location #C, and Box Area Location #D) were collected and delivered to HEAL for analysis of GRO, DRO, motor oil range organics (MRO), VOCs, RCI, and RCRA metals. Figure 5 depicts the sampling locations.

### **2.3 Soil Screening Results**

Field screening was not conducted during the collection of soil samples.

### **2.4 Subsurface Soil Conditions**

No soil borings or monitor wells were installed during the investigation.

### **2.5 Groundwater Conditions**

A groundwater investigation was not conducted.

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## Section 3

# Regulatory Criteria Comparisons

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The potential cleanup levels (i.e., screening levels) are specified in NMED's *Risk Assessment Guidance for Site Investigations and Remediation* dated July 2015 and in the Environmental Protection Agency's (EPA) Regional Screening Levels dated June 2015 if NMED values are not available.

For non-residential properties (e.g., the Gallup Refinery), the soil screening levels (SSLs) must be protective of commercial/industrial workers throughout the upper one foot of surface soils and construction workers throughout the upper ten feet based on NMED criteria. NMED residential soil screening levels are applied to the upper ten feet and soil screening levels for protection of groundwater apply throughout the vadose zone. EPA soil screening levels for direct contact exposure apply to the upper two feet of the vadose zone.

The cleanup criteria are shown in Tables 1 through 4.

### 3.1 Tank Area

On September 16, 2014 four confirmation soil samples were collected from the Tank Area after removal of the LPL blowdown tank. On September 24, 2014 HEAL issued Analytical Report No. 1409872. A copy of the report is provided in Appendix A. Table 1 provides a summary of the analytical results. The results of the confirmation sampling indicate none of the sample results exceed the residential direct contact SSLs. The following exceedances in comparison to the soil-to-groundwater protection SSLs were observed:

- Benzene concentrations detected in Tank Area Location #2, #3 and #4 exceed the Risk Based SSL for a dilution attenuation factor (DAF) of 1 and for a DAF of 20;
- The ethylbenzene concentration detected in Tank Area Location #2 exceeded the Risk Based SSL for a DAF of 1 and for a DAF of 20, while the concentrations in Tank Area #3, and #4 exceed only the DAF of 1 SSL; and
- Total Xylenes concentrations detected in Tank Area Location #2, #3 and #4 exceed the Risk Based SSL for a DAF of 1.

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## **3.2 Box Area**

### **3.2.1 Sampling Event Number One**

On September 16, 2014 four confirmation soil samples were collected from the Box Area after the box was removed. On September 24, 2014 HEAL issued Analytical Report No. 1409873. A copy of the report is provided in Appendix A. Table 2 provides a summary of the analytical results. The results of the confirmation sampling indicated the following exceedances:

- Diesel Range Organics were reported above the SSL of 1,000 mg/kg based on “unknown oil” in the Box Area Location #3;
- Benzene concentrations detected in Box Area Location #1, #2, #3 and #4 exceed the Risk Based SSLs for a DAF of 1 and for a DAF of 20;
- Ethylbenzene concentrations detected in Box Area Location #1, #2, #3, and #4 exceed the Risk Based SSLs for a DAF of 1 and for a DAF of 20;
- Toluene concentrations detected in Box Area Location #1, #2, #3, and #4 exceed the Risk Based SSL for a DAF of 1; and
- Total Xylenes concentrations detected in Box Area Location #1, #2, #3 and #4 exceed the Risk Based SSLs for a DAF of 1 and for a DAF of 20.

### **3.2.2 Sampling Event Number Two**

After additional excavation in the Box Area, four confirmation soil samples were collected from the Box Area on November 17, 2014. On November 25, 2014 HEAL issued Analytical Report No. 1411729. A copy of the report is provided in Appendix A. Table 3 provides a summary of the analytical results. The results of the confirmation sampling indicated the following exceedances:

- Benzene concentrations detected in Box Area Location #A, #B and #D exceed the Risk Based SSLs for a DAF of 1 and for a DAF of 20;
- Ethylbenzene concentrations detected in Box Area Location #A, #B, and #D exceed the Risk Based SSLs for a DAF of 1 and a DAF of 20;
- Toluene concentrations detected in Tank Area Location #A, #B and #D exceed the Risk Based SSL for a DAF of 1; and
- Total Xylenes concentrations detected in Tank Area Location #A, #B and #D exceed the Risk Based SSLs for a DAF of 1 and for a DAF of 20.



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### **3.2.3 Sampling Event Number Three**

On April 17, 2015 four additional soil confirmation samples were collected at the Box Area. On April 24, 2015 HEAL issued Analytical Report No. 1504856. A copy of the report is provided in Appendix A. Table 4 provides a summary of the analytical results. The results of the final confirmation sampling indicate that barium was the only constituent with concentrations (in all four samples) exceeding the Risk Based SSL for a DAF of 1. These barium concentrations (maximum value of 320 mg/kg) may be reflective of naturally concentrations.

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## Section 4

# Conclusions and Recommendations

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In August 2014 the U.S. Environmental Protection Agency (EPA) conducted a RCRA inspection of the Gallup Refinery. During the inspection the EPA found a partially buried tank within the area of SWMU 9 – Drainage Ditch and Inactive Landfarm Area. Western subsequently removed the steel tank and an associated steel junction box during the month of September 2014. Soil was excavated from the tank and box areas and disposed off-site.

Four confirmation soil samples were collected from the Tank Area after tank removal. There was no visible indications of a release from the tank; however, soil confirmation samples collected from the bottom of the excavation indicate the presence of benzene and ethylbenzene at concentration above both the DAF 1 and DAF 20 soil-to-groundwater SSLs. Xylenes were detected at concentrations above the DAF 1 SSL. No samples had concentrations of BTEX, DRO, or MRO above residential direct contact screening levels.

Stained soils were observed beneath the steel junction box after it was removed. Initial soil samples were collected from beneath the tank and found to contain DRO above the residential SSL. In addition, benzene, ethylbenzene, and xylenes were detected at concentrations above both the DAF 1 and DAF 20 SSLs, with toluene detected at concentrations above the DAF 1 SSL. Based on these results the excavation was deepened from 4 to 6 feet. Final confirmation samples were collected and analyzed for GRO, DRO, MRO, VOCs, and RCRA metals. None of the organic constituents were detected at concentrations above SSLs and only barium was detected at concentrations above the DAF SSL. The detected barium concentrations (Table 4) may be consistent with naturally occurring concentrations, but a site-specific background study has not be conducted to allow comparison.

As the tank and box were located within the footprint of SWMU 9, which is still subject to a RCRA Facility Investigation, it recommended to address any potential remaining impacts from the Tank Area with SWMU 9.

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## Tables

<b>Table 1</b>	<b>Soil Analytical Results – Tank Area Locations #1 thru #4 – 9/16/2014</b>
<b>Table 2</b>	<b>Soil Analytical Results – Box Area Locations #1 thru #4 – 9/16/2014</b>
<b>Table 3</b>	<b>Soil Analytical Results – Box Area Locations #A thru #D – 11/17/2014</b>
<b>Table 4</b>	<b>Soil Analytical Results – Box Area Locations #A thru #D – 4/17/2015</b>

**Table 1**  
**Soil Analytical Results**  
**LPG Blowdown Tank - Tank Area Locations #1 thru #4**  
**Western Refining Southwest - Gallup Refinery**

Parameter Name	Tank Area Location #1	Tank Area Location #2	Tank Area Location #3	Tank Area Location #4	NMED Residential Soil (mg/kg)	Risk Based SSL for a DAF of 1 (mg/kg)	Risk Based SSL for a DAF of 20 (mg/kg)
Hall Environmental Lab ID	1409872-001	1409872-002	1409872-003	1409872-004			
Sample Date	9/16/2014	9/16/2014	9/16/2014	9/16/2014			
<b>EPA Method 418.1 TPH - mg/kg</b>							
Total Petroleum Hydrocarbons	320	24	96	400	-	-	-
<b>EPA Method 6010B TCLP Metals - mg/L</b>							
Arsenic	<5	<5	<5	<5	-	-	-
Barium	<100	<100	<100	<100	-	-	-
Cadmium	<1	<1	<1	<1	-	-	-
Chromium	<5	<5	<5	<5	-	-	-
Lead	<5	<5	<5	<5	-	-	-
Selenium	<1	<1	<1	<1	-	-	-
Silver	<5	<5	<5	<5	-	-	-
<b>EPA Method 8270C TCLP - mg/L</b>							
2,4,5-Trichlorophenol	<400	<400	<400	<400	-	-	-
2,4,6-Trichlorophenol	<2	<2	<2	<2	-	-	-
2,4-Dinitrotoluene	<0.13	<0.13	<0.13	<0.13	-	-	-
2-Methylphenol	<200	<200	<200	<200	-	-	-
3+4-Methylphenol	<200	<200	<200	<200	-	-	-
Cresols, Total	<200	<200	<200	<200	-	-	-
Hexachlorobenzene	<0.13	<0.13	<0.13	<0.13	-	-	-
Hexachlorobutadiene	<0.5	<0.5	<0.5	<0.5	-	-	-
Hexachloroethane	<3	<3	<3	<3	-	-	-
Nitrobenzene	<2	<2	<2	<2	-	-	-
Pentachlorophenol	<100	<100	<100	<100	-	-	-
Phenol	<200	<200	<200	<200	-	-	-
Pyridine	<5	<5	<5	<5	-	-	-
<b>EPA Method 7470 TCLP mg/L</b>							
Mercury	<0.02	<0.02	<0.02	<0.02	-	-	-
<b>EPA Method 8015D - mg/kg</b>							
Diesel Range Organics (DRO)	330	39	160	310	1000	-	-
Gasoline Range Organics (GRO)	<5.0	170	92	190	-	-	-
Motor Oil Range Organics (MRO)	<50	<50	<50	50	1000	-	-



**Table 1**  
**Soil Analytical Results**  
**LPG Blowdown Tank - Tank Area Locations #1 thru #4**  
**Western Refining Southwest - Gallup Refinery**

Parameter Name	Tank Area Location #1	Tank Area Location #2	Tank Area Location #3	Tank Area Location #4	NMED Residential Soil (mg/kg)	Risk Based SSL for a DAF of 1 (mg/kg)	Risk Based SSL for a DAF of 20 (mg/kg)
Hall Environmental Lab ID	1409872-001	1409872-002	1409872-003	1409872-004			
Sample Date	9/16/2014	9/16/2014	9/16/2014	9/16/2014			
<b>EPA Method 8021B - mg/kg</b>							
Benzene	<0.05	0.19	0.13	0.25	1.78E+01	1.90E-03	3.80E-02
Ethylbenzene	<0.05	0.58	0.19	0.23	7.51E+01	1.31E-02	2.62E-01
Toluene	<0.05	0.39	0.12	0.19	5.23E+03	6.07E-01	1.21E+01
Xylenes, Total	<0.1	2.1	0.77	1.7	8.71E+02	1.49E-01	2.98E+00
<b>EPA Method 8260B - TCLP Compounds - ppm</b>							
1,1-Dichloroethene	<0.3	<0.3	<0.7	<0.7	-	-	-
1,2-Dichloroethane (EDC)	<0.5	<0.5	<0.5	<0.5	-	-	-
1,4-Dichlorobenzene	<7.5	<7.5	<7.5	<7.5	-	-	-
2-Butanone	<200	<200	<200	<200	-	-	-
Benzene	<0.5	<0.3	<0.5	<0.5	-	-	-
Carbon tetrachloride	<0.5	<0.5	<0.5	<0.5	-	-	-
Chlorobenzene	<100	<0.3	<100	<100	-	-	-
Chloroform	<6	<6	<6	<6	-	-	-
Hexachlorobutadiene	NA	<0.5	NA	NA	-	-	-
Tetrachloroethene (PCE)	<0.7	<0.7	<0.7	<0.7	-	-	-
Trichloroethene (TCE)	<0.5	<0.3	<0.5	<0.5	-	-	-
Vinyl chloride	<0.2	<0.2	<0.2	<0.2	-	-	-
<b>EPA Method 8260B - TCLP Compounds - mg/kg</b>							
m,p-Xylenes	<0.5	-	-	-	-	-	-
o-Xylene	<0.5	-	-	-	-	-	-
Corrosivity - 9045D	Non-Corrosive	Non-Corrosive	Non-Corrosive	Non-Corrosive	-	-	-
Reactive Cyanide - 9012B-mg/kg	<0.125	<0.125	<0.125	<0.125	-	-	-
Reactive Sulfide - 9034/9030B mg/kg	<25	<25	<25	<25	-	-	-
Ignitability - D93 / 1010A	*	*	*	*	-	-	-

- No screening level or analytical result available

NMED - Risk Assessment Guidance for Site Investigations and Remediation (July 2015)

0.19

highlighted value exceeds screening level

\* Did not ignite at 170 °F

**Table 2**  
**Soil Analytical Results**  
**LPG Blowdown Tank - Box Area Locations #1 thru #4**  
**Western Refining Southwest - Gallup Refinery**

Parameter Name	Box Area Location #1	Box Area Location #2	Box Area Location #3	Box Area Location #4	Residential Soil (mg/kg)	Risk Based SSL for a DAF of 1 (mg/kg)	Risk Based SSL for a DAF of 20 (mg/kg)
Hall Environmental Lab ID	1409873-001	1409873-002	1409873-003	1409873-004			
Sample Date	9/16/2014	9/16/2014	9/16/2014	9/16/2014			
<b>EPA Method 418.1 TPH - mg/kg</b>							
Total Petroleum Hydrocarbons	160	1400	1900	710	-	-	-
<b>EPA Method 6010B TCLP Metals - mg/L</b>							
Arsenic	<5	<5	<5	<5	-	-	-
Barium	<100	<100	<100	<100	-	-	-
Cadmium	<1	<1	<1	<1	-	-	-
Chromium	<5	<5	<5	<5	-	-	-
Lead	<5	<5	<5	<5	-	-	-
Selenium	<1	<1	<1	<1	-	-	-
Silver	<5	<5	<5	<5	-	-	-
<b>EPA Method 8270C TCLP - mg/L</b>							
2,4,5-Trichlorophenol	<400	<400	<400	<400	-	-	-
2,4,6-Trichlorophenol	<2	<2	<2	<2	-	-	-
2,4-Dinitrotoluene	<0.13	<0.13	<0.13	<0.13	-	-	-
2-Methylphenol	<200	<200	<200	<200	-	-	-
3+4-Methylphenol	<200	<200	<200	<200	-	-	-
Cresols, Total	<200	<200	<200	<200	-	-	-
Hexachlorobenzene	<0.13	<0.13	<0.13	<0.13	-	-	-
Hexachlorobutadiene	<0.5	<0.5	<0.5	<0.5	-	-	-
Hexachloroethane	<3	<3	<3	<3	-	-	-
Nitrobenzene	<2	<2	<2	<2	-	-	-
Pentachlorophenol	<100	<100	<100	<100	-	-	-
Phenol	<200	<200	<200	<200	-	-	-
Pyridine	<5	<5	<5	<5	-	-	-
<b>EPA Method 7470 TCLP mg/L</b>							
Mercury	<0.02	<0.02	<0.02	<0.02	-	-	-
<b>EPA Method 8015D - mg/kg</b>							
Diesel Range Organics (DRO)	90	980	3600	790	1000	-	-
Gasoline Range Organics (GRO)	110	230	560	390	-	-	-
Motor Oil Range Organics (MRO)	<50	<502	<501	58	1000	-	-

**Table 2**  
**Soil Analytical Results**  
**LPG Blowdown Tank - Box Area Locations #1 thru #4**  
**Western Refining Southwest - Gallup Refinery**

Parameter Name	Box Area Location #1	Box Area Location #2	Box Area Location #3	Box Area Location #4	Residential Soil (mg/kg)	Risk Based SSL for a DAF of 1 (mg/kg)	Risk Based SSL for a DAF of 20 (mg/kg)
Hall Environmental Lab ID	1409873-001	1409873-002	1409873-003	1409873-004			
Sample Date	9/16/2014	9/16/2014	9/16/2014	9/16/2014			
EPA Method 8021B - mg/kg							
Benzene	0.21	0.082	0.22	0.39	1.78E+01	1.90E-03	3.80E-02
Ethylbenzene	0.51	1.2	2.9	2	7.51E+01	1.31E-02	2.62E-01
Toluene	3.1	8	4.7	12	5.23E+03	6.07E-01	1.21E+01
Xylenes, Total	3.4	8.6	26	15	8.71E+02	1.49E-01	2.98E+00
EPA Method 8260B - TCLP Compounds - ppm							
1,1-Dichloroethene	<0.70	<0.70	<0.70	<0.70	-	-	-
1,2-Dichloroethane (EDC)	<0.50	<0.50	<0.50	<0.50	-	-	-
1,4-Dichlorobenzene	<7.5	<7.5	<7.5	<7.5	-	-	-
2-Butanone	<200	<200	<200	<200	-	-	-
Benzene	<0.50	<0.50	<0.50	<0.50	-	-	-
Carbon tetrachloride	<0.50	<0.50	<0.50	<0.50	-	-	-
Chlorobenzene	<100	<100	<100	<100	-	-	-
Chloroform	<6.0	<6.0	<6.0	<6.0	-	-	-
Tetrachloroethene (PCE)	<0.70	<0.70	<0.70	<0.70	-	-	-
Trichloroethene (TCE)	<0.50	<0.50	<0.50	<0.50	-	-	-
Vinyl chloride	<0.20	<0.20	<0.20	<0.20	-	-	-
Corrosivity - 9045D	Non-Corrosive	Non-Corrosive	Non-Corrosive	Non-Corrosive	-	-	-
Reactive Cyanide - 9012B-mg/kg	<0.125	<0.125	<0.125	<0.125	-	-	-
Reactive Sulfide - 9034/9030B mg/kg	<25	<25	<25	<25	-	-	-
Ignitability - D93 / 1010A	*	*	*	*	-	-	-

- No screening level or analytical result available

NMED - Risk Assessment Guidance for Site Investigations and Remediation (July 2015)

0.19

highlighted value exceeds screening level

\* Did not ignite at 170 °F

**Table 3**  
**Soil Analytical Results**  
**LPG Blowdown Tank - Box Area Locations #A thru #D**  
**Western Refining Southwest - Gallup Refinery**

Parameter Name	Box Area Location #A	Box Area Location #B	Box Area Location #C	Box Area Location #D	Residential Soil (mg/kg)	Risk Based SSL for a DAF of 1 (mg/kg)	Risk Based SSL for a DAF of 20 (mg/kg)
Hall Environmental Lab ID	1411729-001	1411729-002	1411729-003	1411729-004			
Sample Date	11/17/2014	11/17/2014	11/17/2014	11/17/2014			
<b>EPA Method 418.1 TPH - mg/kg</b>							
Total Petroleum Hydrocarbons	530	920	<20	380	-	-	-
<b>EPA Method 6010B TCLP Metals - mg/L</b>							
Arsenic	<5	<5	<5	<5	-	-	-
Barium	<100	<100	<100	<100	-	-	-
Cadmium	<1	<1	<1	<1	-	-	-
Chromium	<5	<5	<5	<5	-	-	-
Lead	<5	<5	<5	<5	-	-	-
Selenium	<1	<1	<1	<1	-	-	-
Silver	<5	<5	<5	<5	-	-	-
<b>EPA Method 8270C TCLP - mg/L</b>							
2,4,5-Trichlorophenol	<400	<400	<400	<400	-	-	-
2,4,6-Trichlorophenol	<2	<2	<2	<2	-	-	-
2,4-Dinitrotoluene	<0.13	<0.13	<0.13	<0.13	-	-	-
2-Methylphenol	<200	<200	<200	<200	-	-	-
3+4-Methylphenol	<200	<200	<200	<200	-	-	-
Cresols, Total	<200	<200	<200	<200	-	-	-
Hexachlorobenzene	<0.13	<0.13	<0.13	<0.13	-	-	-
Hexachlorobutadiene	<0.5	<0.5	<0.5	<0.5	-	-	-
Hexachloroethane	<3	<3	<3	<3	-	-	-
Nitrobenzene	<2	<2	<2	<2	-	-	-
Pentachlorophenol	<100	<100	<100	<100	-	-	-
Phenol	<200	<200	<200	<200	-	-	-
Pyridine	<5	<5	<5	<5	-	-	-
<b>EPA Method 7470 TCLP mg/L</b>							
Mercury	<0.02	<0.02	<0.02	<0.02	-	-	-
<b>EPA Method 8015D - mg/kg</b>							
Diesel Range Organics (DRO)	340	300	<10	170	1000	-	-
Gasoline Range Organics (GRO)	250	240	<5	1000	-	-	-
Motor Oil Range Organics (MRO)	NA	NA	NA	NA	1000	-	-



**Table 3**  
**Soil Analytical Results**  
**LPG Blowdown Tank - Box Area Locations #A thru #D**  
**Western Refining Southwest - Gallup Refinery**

Parameter Name	Box Area Location #A	Box Area Location #B	Box Area Location #C	Box Area Location #D	Residential Soil (mg/kg)	Risk Based SSL for a DAF of 1 (mg/kg)	Risk Based SSL for a DAF of 20 (mg/kg)
Hall Environmental Lab ID	1411729-001	1411729-002	1411729-003	1411729-004			
Sample Date	11/17/2014	11/17/2014	11/17/2014	11/17/2014			
EPA Method 8021B - mg/kg							
Benzene	0.94	0.45	<0.05	3.5	1.78E+01	1.90E-03	3.80E-02
Ethylbenzene	3.9	6.2	<0.05	15	7.51E+01	1.31E-02	2.62E-01
Toluene	0.92	1.5	<0.05	3.2	5.23E+03	6.07E-01	1.21E+01
Xylenes, Total	6.3	11	<0.10	24	8.71E+02	1.49E-01	2.98E+00
EPA Method 8260B - TCLP Compounds - ppm							
1,1-Dichloroethene	<0.70	<0.70	<0.70	<0.70	-	-	-
1,2-Dichloroethane (EDC)	<0.50	<0.50	<0.50	<0.50	-	-	-
1,4-Dichlorobenzene	<7.5	<7.5	<7.5	<7.5	-	-	-
2-Butanone	<200	<200	<200	<200	-	-	-
Benzene	<0.50	<0.50	<0.50	<0.50	-	-	-
Carbon tetrachloride	<0.50	<0.50	<0.50	<0.50	-	-	-
Chlorobenzene	<100	<100	<100	<100	-	-	-
Chloroform	<6.0	<6.0	<6.0	<6.0	-	-	-
Tetrachloroethene (PCE)	<0.70	<0.70	<0.70	<0.70	-	-	-
Trichloroethene (TCE)	<0.50	<0.50	<0.50	<0.50	-	-	-
Vinyl chloride	<0.20	<0.20	<0.20	<0.20	-	-	-
Corrosivity - EPA 9045	7.81	7.52	9.08	8.61	-	-	-
Reactive Cyanide - SW846 CH7	<1	<1	<1	<1	-	-	-
Reactive Sulfide - SW846 CH7	37.1	34	19.8	26.7	-	-	-
Ignitability - EPA 1030	Negative	Negative	Negative	Negative	-	-	-

- No screening level or analytical result available

NMED - Risk Assessment Guidance for Site Investigations and Remediation (July 2015)

0.19

highlighted value exceeds screening level

\* Did not ignite at 170 °F

**Table 4**  
**Soil Analytical Results**  
**LPG Blowdown Tank - Box Area Locations #A thru #D**  
**Western Refining Southwest - Gallup Refinery**

Parameter Name	Box Area Location #A	Box Area Location #B	Box Area Location #C	Box Area Location #D	Residential Soil (mg/kg)	Risk Based SSL for a DAF of 1 (mg/kg)	Risk Based SSL for a DAF of 20 (mg/kg)
Hall Environmental Lab ID	1504856-001	1504856-002	1504856-003	1504856-004			
Sample Date	4/17/2015	4/17/2015	4/17/2015	4/17/2015			
<b>EPA Method 8015D - mg/kg</b>							
Diesel Range Organics (DRO)	<9.8	36	<9.87	<9.96	1000	-	-
Gasoline Range Organics (GRO)	<4.8	<4.8	<4.9	<4.7	-	-	-
Motor Oil Range Organics (MRO)	<49	<49	<49	<50	1000	-	-
<b>EPA Method 7470 mg/kg</b>							
Mercury	<0.032	<0.034	<0.032	<0.032	2.38E+01	3.27E-02	6.54E-01
<b>EPA Method 6010B Soil Metals - mg/kg</b>							
Arsenic	<5.1	<5.0	<4.9	<2.5	4.25E+00	1.50E-02	2.99E-01
Barium	280	300	240	320	1.56E+04	1.35E+02	2.70E+03
Cadmium	<0.21	<0.20	<0.20	<0.10	7.05E-01	4.69E-01	9.39E+00
Chromium	15	11	13	10	9.66E+01	1.01E+04	2.01E+05
Lead	5.2	5.2	5.6	4.4	4.00E+02	-	-
Selenium	<5.1	<5.0	<4.9	<2.5	3.91E+02	5.11E-01	1.02E-01
Silver	<0.51	<0.50	<0.49	<0.25	3.91E+02	6.88E-01	1.38E+01
<b>EPA Method 8260B - mg/kg</b>							
1,1,1,2-Tetrachloroethane	<0.048	<0.048	<0.049	<0.047	2.81E+01	1.80E-03	3.59E-02
1,1,1-Trichloroethane	<0.048	<0.048	<0.049	<0.047	1.44E+04	2.55E+00	5.11E+01
1,1,2,2-Tetrachloroethane	<0.048	<0.048	<0.049	<0.047	7.98E+00	2.40E-04	4.80E-03
1,1,2-Trichloroethane	<0.048	<0.048	<0.049	<0.047	2.61E+00	1.11E-04	2.23E-03
1,1-Dichloroethane	<0.048	<0.048	<0.049	<0.047	7.86E+01	6.79E-03	1.36E-01
1,1-Dichloroethene	<0.048	<0.048	<0.049	<0.047	4.40E+02	9.74E-02	1.95E+00
1,1-Dichloropropene	<0.096	<0.095	<0.099	<0.094	-	-	-
1,2,3-Trichlorobenzene	<0.096	<0.095	<0.099	<0.094	-	-	-
1,2,3-Trichloropropane	<0.096	<0.095	<0.099	<0.094	5.10E-02	2.60E-06	5.21E-05
1,2,4-Trichlorobenzene	<0.048	<0.048	<0.049	<0.047	8.29E+01	8.82E-03	1.76E-01
1,2,4-Trimethylbenzene	<0.048	<0.048	<0.049	<0.047	-	-	-
1,2-Dibromo-3-chloropropane	<0.096	<0.095	<0.099	<0.094	8.58E-02	1.17E-06	2.34E-05
1,2-Dibromoethane (EDB)	<0.048	<0.048	<0.049	<0.047	6.72E-01	1.76E-05	3.52E-04
1,2-Dichlorobenzene	<0.048	<0.048	<0.049	<0.047	2.15E+03	2.29E-01	4.58E+00
1,2-Dichloroethane (EDC)	<0.048	<0.048	<0.049	<0.047	8.32E+00	4.07E-04	8.14E-03
1,2-Dichloropropane	<0.048	<0.048	<0.049	<0.047	1.78E+01	1.21E-03	2.43E-02
1,3,5-Trimethylbenzene	<0.048	<0.048	<0.049	<0.047	-	-	-

**Table 4**  
**Soil Analytical Results**  
**LPG Blowdown Tank - Box Area Locations #A thru #D**  
**Western Refining Southwest - Gallup Refinery**

Parameter Name	Box Area Location #A	Box Area Location #B	Box Area Location #C	Box Area Location #D	Residential Soil (mg/kg)	Risk Based SSL for a DAF of 1 (mg/kg)	Risk Based SSL for a DAF of 20 (mg/kg)
Hall Environmental Lab ID	1504856-001	1504856-002	1504856-003	1504856-004			
Sample Date	4/17/2015	4/17/2015	4/17/2015	4/17/2015			
1,3-Dichlorobenzene	<0.048	<0.048	<0.049	<0.047	-	-	-
1,3-Dichloropropane	<0.048	<0.048	<0.049	<0.047	-	-	-
1,4-Dichlorobenzene	<0.048	<0.048	<0.049	<0.047	3.28E+01	3.60E-03	7.20E-02
1-Methylnaphthalene	<0.19	<0.19	<0.20	<0.19	-	-	-
2,2-Dichloropropane	<0.096	<0.095	<0.099	<0.094	-	-	-
2-Butanone	<0.48	<0.48	<0.49	<0.47	3.74E+04	1.00E+00	2.01E+01
2-Chlorotoluene	<0.048	<0.048	<0.049	<0.047	1.56E+03	1.78E-01	3.56E+00
2-Hexanone	<0.48	<0.48	<0.49	<0.47	-	-	-
2-Methylnaphthalene	<0.19	<0.19	<0.20	<0.19	-	-	-
4-Isopropyltoluene	<0.048	<0.048	<0.049	<0.047	-	-	-
4-Methyl-2-pentanone	<0.48	<0.48	<0.49	<0.47	5.81E+03	2.40E-01	4.80E+00
Acetone	<0.72	<0.71	<0.74	<0.71	6.63E+04	2.49E+00	4.98E+01
Benzene	<0.048	<0.048	<0.049	<0.047	1.78E+01	1.90E-03	3.80E-02
Bromobenzene	<0.048	<0.048	<0.049	<0.047	-	-	-
Bromodichloromethane	<0.14	<0.14	<0.15	<0.14	6.19E+00	3.10E-04	6.21E-03
Bromoform	<0.048	<0.048	<0.049	<0.047	6.74E+02	2.05E-02	4.11E-01
Bromomethane	<0.14	<0.14	<0.15	<0.14	1.77E+01	1.71E-03	3.43E-02
Carbon disulfide	<0.14	<0.14	<0.15	<0.14	1.55E+03	2.21E-01	4.42E+00
Carbon tetrachloride	<0.14	<0.14	<0.15	<0.14	1.07E+01	1.66E-03	3.33E-02
Chlorobenzene	<0.048	<0.048	<0.049	<0.047	3.78E+02	4.18E-02	8.36E-01
Chloroethane	<0.096	<0.095	<0.099	<0.094	1.90E+04	5.37E+00	1.07E+02
Chloroform	<0.048	<0.048	<0.049	<0.047	5.90E+00	5.46E-04	1.09E-02
Chloromethane	<0.14	<0.14	<0.15	<0.14	4.11E+01	4.76E-03	9.51E-02
cis-1,2-DCE	<0.048	<0.048	<0.049	<0.047	1.56E+02	9.18E-03	1.84E-01
cis-1,3-Dichloropropene	<0.048	<0.048	<0.049	<0.047	2.93E+01	1.40E-03	2.80E-02
Dibromochloromethane	<0.048	<0.048	<0.049	<0.047	1.39E+01	3.77E-04	7.54E-03
Dibromomethane	<0.048	<0.048	<0.049	<0.047	-	-	-
Dichlorodifluoromethane	<0.048	<0.048	<0.049	<0.047	1.82E+02	3.61E-01	7.23E+00
Ethylbenzene	<0.048	<0.048	<0.049	<0.047	7.51E+01	1.31E-02	2.62E-01
Hexachlorobutadiene	<0.096	<0.095	<0.099	<0.094	6.16E+01	4.39E-03	8.79E-02
Isopropylbenzene	<0.048	<0.048	<0.049	<0.047	2.36E+03	5.69E-01	1.14E+01
Methyl tert-butyl ether (MTBE)	<0.048	<0.048	<0.049	<0.047	9.75E+02	2.77E-02	5.53E-01

**Table 4**  
**Soil Analytical Results**  
**LPG Blowdown Tank - Box Area Locations #A thru #D**  
**Western Refining Southwest - Gallup Refinery**

Parameter Name	Box Area Location #A	Box Area Location #B	Box Area Location #C	Box Area Location #D	Residential Soil (mg/kg)	Risk Based SSL for a DAF of 1 (mg/kg)	Risk Based SSL for a DAF of 20 (mg/kg)
Hall Environmental Lab ID	1504856-001	1504856-002	1504856-003	1504856-004			
Sample Date	4/17/2015	4/17/2015	4/17/2015	4/17/2015			
Methylene chloride	<0.14	<0.14	<0.15	<0.14	4.09E+02	2.35E-02	4.71E-01
Naphthalene	<0.096	<0.095	<0.099	<0.094	4.97E+01	4.11E-03	8.23E-02
n-Butylbenzene	<0.14	<0.14	<0.15	<0.14	-	-	-
n-Propylbenzene	<0.048	<0.048	<0.049	<0.047	-	-	-
sec-Butylbenzene	<0.048	<0.048	<0.049	<0.047	-	-	-
Styrene	<0.048	<0.048	<0.049	<0.047	7.26E+03	1.03E+00	2.06E+01
tert-Butylbenzene	<0.048	<0.048	<0.049	<0.047	-	-	-
Tetrachloroethene (PCE)	<0.048	<0.048	<0.049	<0.047	1.11E+02	1.60E-02	3.21E-01
Toluene	<0.048	<0.048	<0.049	<0.047	5.23E+03	6.07E-01	1.21E+01
trans-1,2-DCE	<0.048	<0.048	<0.049	<0.047	2.95E+02	2.35E-02	4.69E-01
trans-1,3-Dichloropropene	<0.048	<0.048	<0.049	<0.047	2.93E+01	1.40E-03	2.80E-02
Trichloroethene (TCE)	<0.048	<0.048	<0.049	<0.047	6.77E+00	8.75E-04	1.75E-02
Trichlorofluoromethane	<0.048	<0.048	<0.049	<0.047	1.23E+03	7.84E-01	1.57E+01
Vinyl chloride	<0.048	<0.048	<0.049	<0.047	7.42E-01	6.75E-05	1.35E-03
Xylenes, Total	<0.096	<0.095	<0.099	<0.094	8.71E+02	1.49E-01	2.98E+00
Corrosivity - EPA 9045	8.8	9.54	9.56	8.92	-	-	-
Reactive Cyanide - SW846 CH7	<0.247	<0.247	<0.247	<0.247	-	-	-
Reactive Sulfide - SW846 CH7	24.7	29.6	29.6	28.1	-	-	-
Ignitability - EPA 1030	Negative	Negative	Negative	Negative	-	-	-

- No screening level or analytical result available

NMED - Risk Assessment Guidance for Site Investigations and Remediation (July 2015)

0.19

highlighted value exceeds screening level

\* Did not ignite at 170 °F

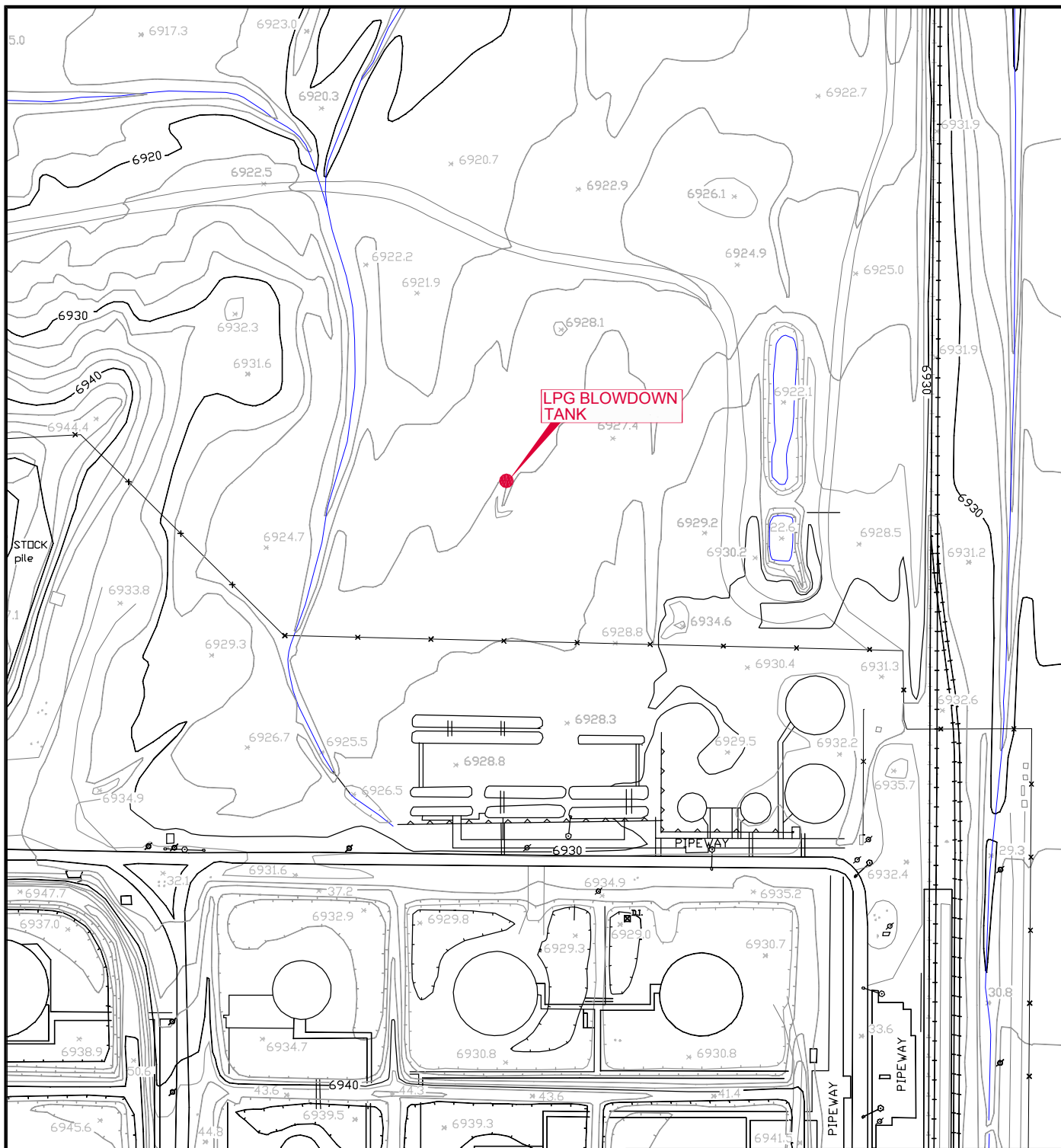


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## Figures

- Figure 1**      **Site Location Map**
- Figure 2**      **Aerial Photo of LPG Blowdown Tank**
- Figure 3**      **Soil Sampling Locations – September 16, 2014**
- Figure 4**      **Soil Sampling Locations – November 16, 2014**
- Figure 5**      **Soil Sampling Locations – April 17, 2014**



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



0 150  
SCALE IN FEET



QUADRANGLE LOCATION



PROJ. NO.: Western Refining | DATE: 02/29/16 | FILE: WestRef-dA41

FIGURE 1  
SITE LOCATION MAP  
LPG BLOWDOWN TANK



8501 N. MoPac Expy.  
Suite 300  
Austin, Texas 78759



LPG BLOWDOWN  
TANK



0 100  
SCALE IN FEET

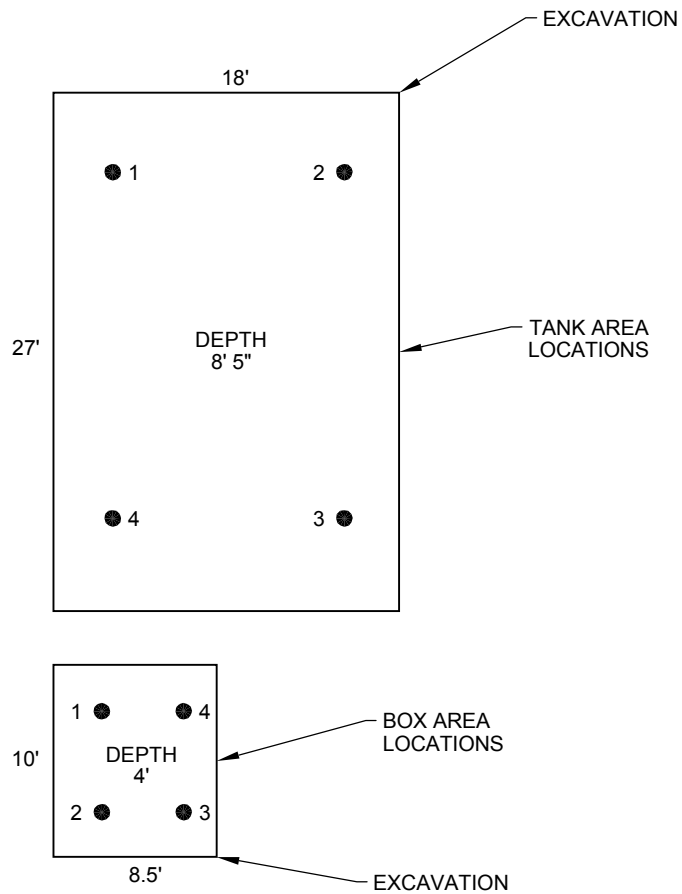


PROJ. NO.:Western Refining|DATE:02/29/16|FILE:WestRef-dA42

FIGURE 2  
AERIAL PHOTO OF  
LPG BLOWDOWN TANK



8501 N. MoPac Expy.  
Suite 300  
Austin, Texas 78759



0 10  
SCALE IN FEET

LEGEND

1 ● SOIL SAMPLING LOCATION AND IDENTIFICATION NUMBER



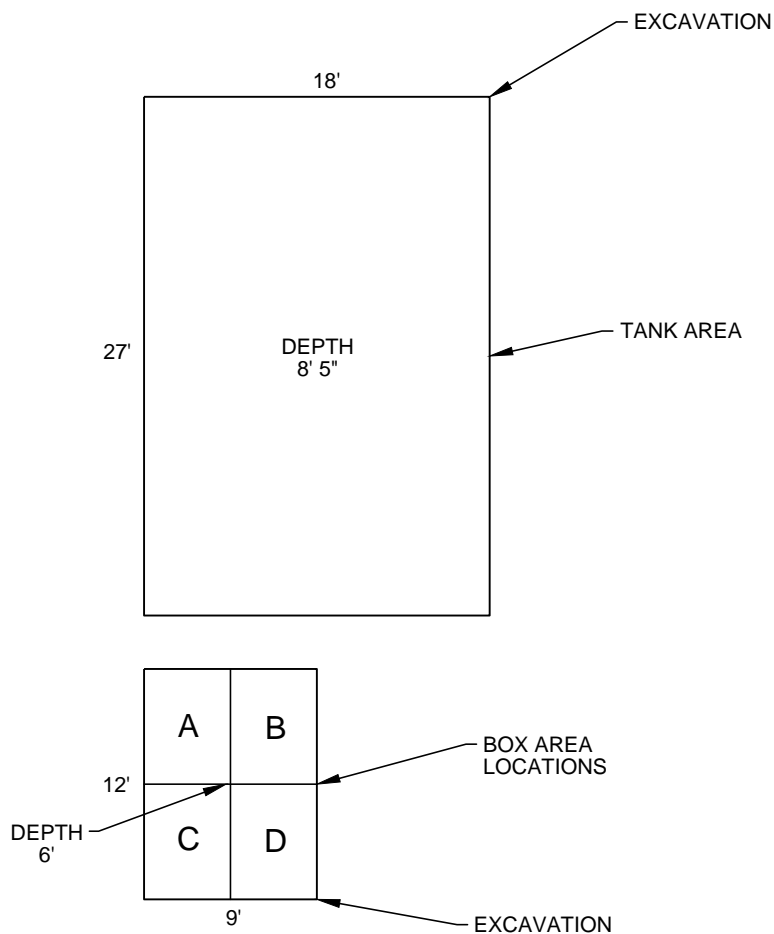
PROJ. NO.:Western Refining | DATE:02/29/16 | FILE:WestRef-dA43

FIGURE 3  
SOIL SAMPLING LOCATIONS  
SEPTEMBER 16, 2014  
LPG BLOWDOWN TANK



8501 N. MoPac Expy.  
Suite 300  
Austin, Texas 78759





0 10  
SCALE IN FEET

#### LEGEND

A SOIL SAMPLING LOCATION  
AND IDENTIFICATION NUMBER

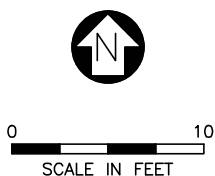
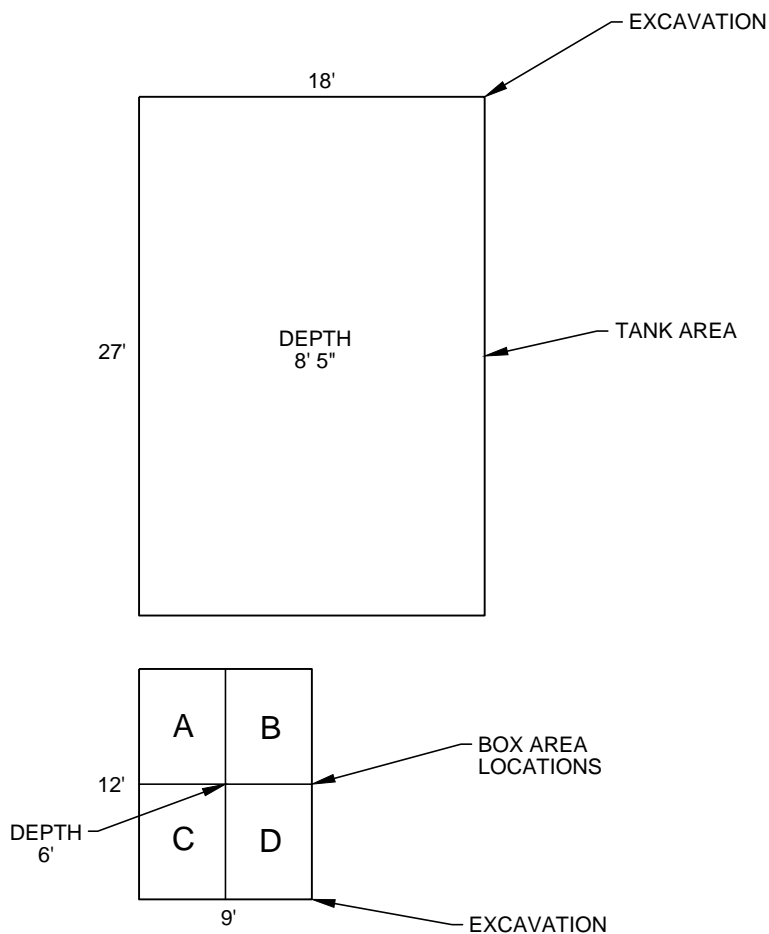


PROJ. NO.:Western Refining | DATE:02/29/16 | FILE:WestRef-dA44

FIGURE 4  
SOIL SAMPLING LOCATIONS  
NOVEMBER 17, 2014  
LPG BLOWDOWN TANK



8501 N. MoPac Expy.  
Suite 300  
Austin, Texas 78759



**LEGEND**

A SOIL SAMPLING LOCATION AND IDENTIFICATION NUMBER



PROJ. NO.:Western Refining | DATE:02/29/16 | FILE:WestRef-dA45

**FIGURE 5**  
SOIL SAMPLING LOCATIONS  
APRIL 17, 2015  
LPG BLOWDOWN TANK



8501 N. MoPac Expy.  
Suite 300  
Austin, Texas 78759

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## **Appendix A**

### **Analytical**

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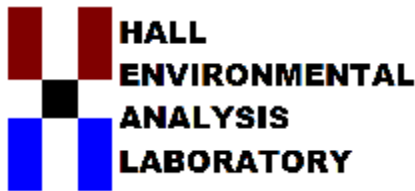
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**Appendix A-1**  
**Hall Environmental Analysis Laboratory, Inc. –**  
**August 28, 2014**  
**Analytical Report No. 1408B60**

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Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

August 28, 2014

Thurman B. Larsen  
Western Refining Southwest, Gallup  
92 Giant Crossing Road  
Gallup, NM 87301  
TEL: (505) 722-0258  
FAX (505) 722-0210

RE: Underground Tank

OrderNo.: 1408B60

Dear Thurman B. Larsen:

Hall Environmental Analysis Laboratory received 1 sample(s) on 8/21/2014 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1408B60**

Date Reported: **8/28/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Tank N of Bullet farm

**Project:** Underground Tank

**Collection Date:** 8/19/2014 1:15:00 PM

**Lab ID:** 1408B60-001

**Matrix:** AQUEOUS

**Received Date:** 8/21/2014 4:52:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 7470: MERCURY</b>							Analyst: <b>MMD</b>
Mercury	ND	0.020		mg/L	10	8/26/2014 10:46:23 AM	14939
<b>EPA 6010B: TOTAL RECOVERABLE METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	0.10		mg/L	5	8/26/2014 11:46:06 AM	14938
Barium	0.072	0.020		mg/L	1	8/26/2014 11:44:04 AM	14938
Cadmium	ND	0.0020		mg/L	1	8/26/2014 11:44:04 AM	14938
Chromium	0.41	0.0060		mg/L	1	8/26/2014 11:44:04 AM	14938
Lead	ND	0.025		mg/L	5	8/26/2014 11:46:06 AM	14938
Selenium	ND	0.25		mg/L	5	8/26/2014 11:46:06 AM	14938
Silver	ND	0.0050		mg/L	1	8/26/2014 11:44:04 AM	14938
<b>EPA METHOD 8270C: SEMIVOLATILES</b>							Analyst: <b>DAM</b>
Acenaphthene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Acenaphthylene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Aniline	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Anthracene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Azobenzene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Benz(a)anthracene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Benzo(a)pyrene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Benzo(b)fluoranthene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Benzo(g,h,i)perylene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Benzo(k)fluoranthene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Benzoic acid	610	100		µg/L	5	8/26/2014 10:35:19 AM	14928
Benzyl alcohol	320	50		µg/L	5	8/26/2014 10:35:19 AM	14928
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Bis(2-chloroethyl)ether	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
4-Bromophenyl phenyl ether	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Butyl benzyl phthalate	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Carbazole	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
4-Chloro-3-methylphenol	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
4-Chloroaniline	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
2-Chloronaphthalene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
2-Chlorophenol	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Chrysene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Di-n-butyl phthalate	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Di-n-octyl phthalate	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Dibenz(a,h)anthracene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1408B60**

Date Reported: **8/28/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Tank N of Bullet farm

**Project:** Underground Tank

**Collection Date:** 8/19/2014 1:15:00 PM

**Lab ID:** 1408B60-001

**Matrix:** AQUEOUS

**Received Date:** 8/21/2014 4:52:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C: SEMIVOLATILES</b>							Analyst: <b>DAM</b>
Dibenzofuran	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
1,2-Dichlorobenzene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
1,3-Dichlorobenzene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
1,4-Dichlorobenzene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
3,3'-Dichlorobenzidine	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Diethyl phthalate	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Dimethyl phthalate	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
2,4-Dichlorophenol	ND	20		µg/L	1	8/25/2014 7:23:26 PM	14928
2,4-Dimethylphenol	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	8/25/2014 7:23:26 PM	14928
2,4-Dinitrophenol	ND	20		µg/L	1	8/25/2014 7:23:26 PM	14928
2,4-Dinitrotoluene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
2,6-Dinitrotoluene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Fluoranthene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Fluorene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Hexachlorobenzene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Hexachlorobutadiene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Hexachlorocyclopentadiene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Hexachloroethane	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Isophorone	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
1-Methylnaphthalene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
2-Methylnaphthalene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
2-Methylphenol	ND	20		µg/L	1	8/25/2014 7:23:26 PM	14928
3+4-Methylphenol	21	10		µg/L	1	8/25/2014 7:23:26 PM	14928
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
N-Nitrosodimethylamine	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
N-Nitrosodiphenylamine	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Naphthalene	18	10		µg/L	1	8/25/2014 7:23:26 PM	14928
2-Nitroaniline	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
3-Nitroaniline	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
4-Nitroaniline	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Nitrobenzene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
2-Nitrophenol	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
4-Nitrophenol	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Pentachlorophenol	ND	20		µg/L	1	8/25/2014 7:23:26 PM	14928
Phenanthrene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Phenol	17	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Pyrene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 2 of 20
	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	
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1408B60**

Date Reported: **8/28/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Tank N of Bullet farm

**Project:** Underground Tank

**Collection Date:** 8/19/2014 1:15:00 PM

**Lab ID:** 1408B60-001

**Matrix:** AQUEOUS

**Received Date:** 8/21/2014 4:52:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C: SEMIVOLATILES</b>							Analyst: <b>DAM</b>
Pyridine	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
1,2,4-Trichlorobenzene	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
2,4,5-Trichlorophenol	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
2,4,6-Trichlorophenol	ND	10		µg/L	1	8/25/2014 7:23:26 PM	14928
Surr: 2-Fluorophenol	38.6	12.1-85.8		%REC	1	8/25/2014 7:23:26 PM	14928
Surr: Phenol-d5	38.8	17.7-65.8		%REC	1	8/25/2014 7:23:26 PM	14928
Surr: 2,4,6-Tribromophenol	92.6	26-138		%REC	1	8/25/2014 7:23:26 PM	14928
Surr: Nitrobenzene-d5	78.8	47.5-119		%REC	1	8/25/2014 7:23:26 PM	14928
Surr: 2-Fluorobiphenyl	84.8	48.1-106		%REC	1	8/25/2014 7:23:26 PM	14928
Surr: 4-Terphenyl-d14	80.1	44-113		%REC	1	8/25/2014 7:23:26 PM	14928
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	8/25/2014 3:01:00 PM	14927
3+4-Methylphenol	ND	200		mg/L	1	8/25/2014 3:01:00 PM	14927
Phenol	ND	200		mg/L	1	8/25/2014 3:01:00 PM	14927
2,4-Dinitrotoluene	ND	0.13		mg/L	1	8/25/2014 3:01:00 PM	14927
Hexachlorobenzene	ND	0.13		mg/L	1	8/25/2014 3:01:00 PM	14927
Hexachlorobutadiene	ND	0.50		mg/L	1	8/25/2014 3:01:00 PM	14927
Hexachloroethane	ND	3.0		mg/L	1	8/25/2014 3:01:00 PM	14927
Nitrobenzene	ND	2.0		mg/L	1	8/25/2014 3:01:00 PM	14927
Pentachlorophenol	ND	100		mg/L	1	8/25/2014 3:01:00 PM	14927
Pyridine	ND	5.0		mg/L	1	8/25/2014 3:01:00 PM	14927
2,4,5-Trichlorophenol	ND	400		mg/L	1	8/25/2014 3:01:00 PM	14927
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	8/25/2014 3:01:00 PM	14927
Cresols, Total	ND	200		mg/L	1	8/25/2014 3:01:00 PM	14927
Surr: 2-Fluorophenol	80.6	18.6-88.6		%REC	1	8/25/2014 3:01:00 PM	14927
Surr: Phenol-d5	59.6	19.5-61.8		%REC	1	8/25/2014 3:01:00 PM	14927
Surr: 2,4,6-Tribromophenol	86.0	29.7-130		%REC	1	8/25/2014 3:01:00 PM	14927
Surr: Nitrobenzene-d5	122	45.1-101	S	%REC	1	8/25/2014 3:01:00 PM	14927
Surr: 2-Fluorobiphenyl	110	46.6-99.3	S	%REC	1	8/25/2014 3:01:00 PM	14927
Surr: 4-Terphenyl-d14	106	40.8-109		%REC	1	8/25/2014 3:01:00 PM	14927
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: <b>cadg</b>
Benzene	30	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
Toluene	300	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
Ethylbenzene	120	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
Methyl tert-butyl ether (MTBE)	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
1,2,4-Trimethylbenzene	260	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
1,3,5-Trimethylbenzene	92	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
1,2-Dichloroethane (EDC)	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 3 of 20
	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	
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1408B60**

Date Reported: **8/28/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Tank N of Bullet farm

**Project:** Underground Tank

**Collection Date:** 8/19/2014 1:15:00 PM

**Lab ID:** 1408B60-001

**Matrix:** AQUEOUS

**Received Date:** 8/21/2014 4:52:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: <b>cadg</b>
1,2-Dibromoethane (EDB)	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
Naphthalene	ND	40	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
1-Methylnaphthalene	ND	80	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
2-Methylnaphthalene	ND	80	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
Acetone	ND	200	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
Bromobenzene	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
Bromodichloromethane	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
Bromoform	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
Bromomethane	ND	60	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
2-Butanone	ND	200	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
Carbon disulfide	ND	200	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
Carbon Tetrachloride	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
Chlorobenzene	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
Chloroethane	ND	40	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
Chloroform	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
Chloromethane	ND	60	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
2-Chlorotoluene	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
4-Chlorotoluene	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
cis-1,2-DCE	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
cis-1,3-Dichloropropene	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
1,2-Dibromo-3-chloropropane	ND	40	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
Dibromochloromethane	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
Dibromomethane	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
1,2-Dichlorobenzene	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
1,3-Dichlorobenzene	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
1,4-Dichlorobenzene	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
Dichlorodifluoromethane	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
1,1-Dichloroethane	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
1,1-Dichloroethene	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
1,2-Dichloropropane	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
1,3-Dichloropropane	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
2,2-Dichloropropane	ND	40	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
1,1-Dichloropropene	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
Hexachlorobutadiene	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
2-Hexanone	ND	200	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
Isopropylbenzene	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
4-Isopropyltoluene	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
4-Methyl-2-pentanone	ND	200	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
Methylene Chloride	ND	60	P	µg/L	20	8/26/2014 7:23:00 PM	R20817

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 4 of 20
	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	
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1408B60**

Date Reported: **8/28/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Tank N of Bullet farm

**Project:** Underground Tank

**Collection Date:** 8/19/2014 1:15:00 PM

**Lab ID:** 1408B60-001

**Matrix:** AQUEOUS

**Received Date:** 8/21/2014 4:52:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: <b>cadg</b>
n-Butylbenzene	ND	60	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
n-Propylbenzene	45	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
sec-Butylbenzene	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
Styrene	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
tert-Butylbenzene	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
1,1,1,2-Tetrachloroethane	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
1,1,2,2-Tetrachloroethane	ND	40	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
Tetrachloroethene (PCE)	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
trans-1,2-DCE	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
trans-1,3-Dichloropropene	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
1,2,3-Trichlorobenzene	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
1,2,4-Trichlorobenzene	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
1,1,1-Trichloroethane	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
1,1,2-Trichloroethane	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
Trichloroethene (TCE)	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
Trichlorofluoromethane	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
1,2,3-Trichloropropane	ND	40	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
Vinyl chloride	ND	20	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
Xylenes, Total	650	30	P	µg/L	20	8/26/2014 7:23:00 PM	R20817
Surr: 1,2-Dichloroethane-d4	163	70-130	SP	%REC	20	8/26/2014 7:23:00 PM	R20817
Surr: 4-Bromofluorobenzene	93.7	70-130	P	%REC	20	8/26/2014 7:23:00 PM	R20817
Surr: Dibromofluoromethane	113	70-130	P	%REC	20	8/26/2014 7:23:00 PM	R20817
Surr: Toluene-d8	92.6	70-130	P	%REC	20	8/26/2014 7:23:00 PM	R20817
<b>TCLP VOLATILES BY 8260B</b>							Analyst: <b>cadg</b>
Benzene	ND	0.50	P	mg/L	1	8/25/2014 7:34:11 PM	R20777
2-Butanone	ND	10	P	mg/L	1	8/25/2014 7:34:11 PM	R20777
Carbon Tetrachloride	ND	0.50	P	mg/L	1	8/25/2014 7:34:11 PM	R20777
Chlorobenzene	ND	100	P	mg/L	1	8/25/2014 7:34:11 PM	R20777
Chloroform	ND	6.0	P	mg/L	1	8/25/2014 7:34:11 PM	R20777
1,4-Dichlorobenzene	ND	7.5	P	mg/L	1	8/25/2014 7:34:11 PM	R20777
1,2-Dichloroethane (EDC)	ND	0.50	P	mg/L	1	8/25/2014 7:34:11 PM	R20777
1,1-Dichloroethene	ND	0.70	P	mg/L	1	8/25/2014 7:34:11 PM	R20777
Hexachlorobutadiene	ND	0.50	P	mg/L	1	8/25/2014 7:34:11 PM	R20777
Tetrachloroethene (PCE)	ND	0.70	P	mg/L	1	8/25/2014 7:34:11 PM	R20777
Trichloroethene (TCE)	ND	0.50	P	mg/L	1	8/25/2014 7:34:11 PM	R20777
Vinyl chloride	ND	0.20	P	mg/L	1	8/25/2014 7:34:11 PM	R20777
Surr: 1,2-Dichloroethane-d4	103	70-130	P	%REC	1	8/25/2014 7:34:11 PM	R20777
Surr: 4-Bromofluorobenzene	97.2	70-130	P	%REC	1	8/25/2014 7:34:11 PM	R20777
Surr: Dibromofluoromethane	91.1	70-130	P	%REC	1	8/25/2014 7:34:11 PM	R20777

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* 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	ND Not Detected at the Reporting Limit
	O RSD is greater than RSDlimit	P Sample pH greater than 2.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1408B60**

Date Reported: **8/28/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Tank N of Bullet farm

**Project:** Underground Tank

**Collection Date:** 8/19/2014 1:15:00 PM

**Lab ID:** 1408B60-001

**Matrix:** AQUEOUS

**Received Date:** 8/21/2014 4:52:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>TCLP VOLATILES BY 8260B</b>							Analyst: <b>cadg</b>
Surr: Toluene-d8	102	70-130	P	%REC	1	8/25/2014 7:34:11 PM	R20777

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 6 of 20
	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	
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B60

28-Aug-14

Client: Western Refining Southwest, Gallup

Project: Underground Tank

Sample ID	5mL rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R20777			RunNo: 20777					
Prep Date:		Analysis Date: 8/25/2014			SeqNo: 604699		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
2-Butanone	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroform	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
1,1-Dichloroethene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
Tetrachloroethene (PCE)	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Vinyl chloride	ND	1.0								
Surr: 1,2-Dichloroethane-d4	10		10.00		99.8	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	9.2		10.00		92.1	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R20777			RunNo: 20777					
Prep Date:		Analysis Date: 8/25/2014			SeqNo: 604701		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	106	70	130			
Toluene	21	1.0	20.00	0	104	80	120			
Chlorobenzene	19	1.0	20.00	0	96.1	70	130			
1,1-Dichloroethene	24	1.0	20.00	0	120	82.6	131			
Trichloroethene (TCE)	18	1.0	20.00	0	90.7	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.9	70	130			
Surr: Dibromofluoromethane	9.5		10.00		94.7	70	130			
Surr: Toluene-d8	11		10.00		108	70	130			

Sample ID	5mL rb	SampType:	MBLK		TestCode:	EPA Method 8260B: VOLATILES				
Client ID:	PBW	Batch ID:	R20817		RunNo:	20817				
Prep Date:		Analysis Date:	8/26/2014		SeqNo:	605724		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B60

28-Aug-14

Client: Western Refining Southwest, Gallup

Project: Underground Tank

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R20817	RunNo:	20817					
Prep Date:		Analysis Date:	8/26/2014	SeqNo:	605724	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B60

28-Aug-14

Client: Western Refining Southwest, Gallup

Project: Underground Tank

Sample ID	5mL rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R20817			RunNo: 20817					
Prep Date:		Analysis Date: 8/26/2014			SeqNo: 605724		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	16		10.00		164	70	130			S
Surr: 4-Bromofluorobenzene	9.6		10.00		96.2	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	9.6		10.00		95.8	70	130			

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R20817			RunNo: 20817					
Prep Date:		Analysis Date: 8/26/2014			SeqNo: 605726		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	114	70	130			
Toluene	18	1.0	20.00	0	91.7	80	120			
Chlorobenzene	18	1.0	20.00	0	92.4	70	130			
1,1-Dichloroethene	25	1.0	20.00	0	126	82.6	131			
Trichloroethene (TCE)	21	1.0	20.00	0	104	70	130			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B60

28-Aug-14

Client: Western Refining Southwest, Gallup

Project: Underground Tank

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	R20817	RunNo:	20817					
Prep Date:		Analysis Date:	8/26/2014	SeqNo:	605726	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	16		10.00		158	70	130			S
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	9.0		10.00		90.4	70	130			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B60

28-Aug-14

Client: Western Refining Southwest, Gallup

Project: Underground Tank

Sample ID	5mL rb	SampType: MBLK			TestCode: TCLP Volatiles by 8260B					
Client ID:	PBW	Batch ID: R20777			RunNo: 20777					
Prep Date:		Analysis Date: 8/25/2014			SeqNo: 605012		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.50								
2-Butanone	ND	10								
Carbon Tetrachloride	ND	0.50								
Chlorobenzene	ND	100								
Chloroform	ND	6.0								
1,4-Dichlorobenzene	ND	7.5								
1,2-Dichloroethane (EDC)	ND	0.50								
1,1-Dichloroethene	ND	0.70								
Hexachlorobutadiene	ND	0.50								
Tetrachloroethene (PCE)	ND	0.70								
Trichloroethene (TCE)	ND	0.50								
Vinyl chloride	ND	0.20								
Surr: 1,2-Dichloroethane-d4	0.010		0.01000		99.8	70	130			
Surr: 4-Bromofluorobenzene	0.010		0.01000		100	70	130			
Surr: Dibromofluoromethane	0.0092		0.01000		92.1	70	130			
Surr: Toluene-d8	0.010		0.01000		102	70	130			

Sample ID	100ng lcs	SampType: LCS			TestCode: TCLP Volatiles by 8260B					
Client ID:	LCSW	Batch ID: R20777			RunNo: 20777					
Prep Date:		Analysis Date: 8/25/2014			SeqNo: 605013		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.021	0.010	0.02000	0	106	70	130			
Chlorobenzene	0.019	0.010	0.02000	0	96.1	70	130			
1,1-Dichloroethene	0.024	0.010	0.02000	0	120	82.6	131			
Trichloroethene (TCE)	0.018	0.010	0.02000	0	90.7	70	130			
Surr: 1,2-Dichloroethane-d4	0.011		0.01000		106	70	130			
Surr: 4-Bromofluorobenzene	0.0099		0.01000		98.9	70	130			
Surr: Dibromofluoromethane	0.0095		0.01000		94.7	70	130			
Surr: Toluene-d8	0.011		0.01000		108	70	130			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B60

28-Aug-14

Client: Western Refining Southwest, Gallup

Project: Underground Tank

Sample ID	mb-14928	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	14928	RunNo:	20778					
Prep Date:	8/25/2014	Analysis Date:	8/25/2014	SeqNo:	604653	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B60

28-Aug-14

Client: Western Refining Southwest, Gallup

Project: Underground Tank

Sample ID	mb-14928	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	14928	RunNo:	20778					
Prep Date:	8/25/2014	Analysis Date:	8/25/2014	SeqNo:	604653	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	20								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	140		200.0		68.6	12.1	85.8			
Surr: Phenol-d5	100		200.0		51.9	17.7	65.8			
Surr: 2,4,6-Tribromophenol	100		200.0		50.5	26	138			
Surr: Nitrobenzene-d5	100		100.0		103	47.5	119			
Surr: 2-Fluorobiphenyl	100		100.0		104	48.1	106			
Surr: 4-Terphenyl-d14	85		100.0		84.5	44	113			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B60

28-Aug-14

Client: Western Refining Southwest, Gallup

Project: Underground Tank

Sample ID	Ics-14928		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSW		Batch ID: 14928		RunNo: 20778					
Prep Date:	8/25/2014		Analysis Date: 8/25/2014		SeqNo: 604654		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	89	10	100.0	0	89.2	50.3	109			
4-Chloro-3-methylphenol	200	10	200.0	0	101	51.2	113			
2-Chlorophenol	190	10	200.0	0	97.1	48.5	104			
1,4-Dichlorobenzene	79	10	100.0	0	79.2	39.5	106			
2,4-Dinitrotoluene	83	10	100.0	0	83.2	45.4	107			
N-Nitrosodi-n-propylamine	93	10	100.0	0	93.3	50.4	119			
4-Nitrophenol	120	10	200.0	0	59.6	15.5	62.2			
Pentachlorophenol	150	20	200.0	0	73.0	23.5	93.5			
Phenol	120	10	200.0	0	59.2	26.8	65.6			
Pyrene	93	10	100.0	0	92.6	54.4	108			
1,2,4-Trichlorobenzene	82	10	100.0	0	82.0	39.9	106			
Surr: 2-Fluorophenol	150		200.0		74.7	12.1	85.8			
Surr: Phenol-d5	110		200.0		53.8	17.7	65.8			
Surr: 2,4,6-Tribromophenol	140		200.0		71.4	26	138			
Surr: Nitrobenzene-d5	100		100.0		104	47.5	119			
Surr: 2-Fluorobiphenyl	100		100.0		101	48.1	106			
Surr: 4-Terphenyl-d14	97		100.0		97.4	44	113			

Sample ID	Icsd-14928		SampType: LCSD		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS02		Batch ID: 14928		RunNo: 20778					
Prep Date:	8/25/2014		Analysis Date: 8/25/2014		SeqNo: 604958		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	100	10	100.0	0	104	50.3	109	15.4	27.2	
4-Chloro-3-methylphenol	220	10	200.0	0	110	51.2	113	8.80	25.9	
2-Chlorophenol	160	10	200.0	0	78.7	48.5	104	21.0	22.5	
1,4-Dichlorobenzene	87	10	100.0	0	87.2	39.5	106	9.59	24.6	
2,4-Dinitrotoluene	110	10	100.0	0	111	45.4	107	28.6	25.3	RS
N-Nitrosodi-n-propylamine	100	10	100.0	0	104	50.4	119	11.3	23.6	
4-Nitrophenol	71	10	200.0	0	35.6	15.5	62.2	50.5	34.7	R
Pentachlorophenol	89	20	200.0	0	44.6	23.5	93.5	48.3	32.8	R
Phenol	110	10	200.0	0	56.9	26.8	65.6	3.96	25.5	
Pyrene	120	10	100.0	0	125	54.4	108	29.6	31.4	S
1,2,4-Trichlorobenzene	87	10	100.0	0	86.8	39.9	106	5.71	25.9	
Surr: 2-Fluorophenol	92		200.0		46.2	12.1	85.8	0	0	
Surr: Phenol-d5	110		200.0		53.0	17.7	65.8	0	0	
Surr: 2,4,6-Tribromophenol	100		200.0		52.2	26	138	0	0	
Surr: Nitrobenzene-d5	110		100.0		108	47.5	119	0	0	
Surr: 2-Fluorobiphenyl	110		100.0		112	48.1	106	0	0	S

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B60

28-Aug-14

Client: Western Refining Southwest, Gallup

Project: Underground Tank

Sample ID	lcscd-14928	SampType:	LCSD	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	LCSS02	Batch ID:	14928	RunNo:	20778					
Prep Date:	8/25/2014	Analysis Date:	8/25/2014	SeqNo:	604958	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	110		100.0		110	44	113	0	0	

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B60

28-Aug-14

Client: Western Refining Southwest, Gallup

Project: Underground Tank

Sample ID	mb-14927		SampType: MBLK		TestCode: EPA Method 8270C TCLP					
Client ID:	PBS		Batch ID: 14927		RunNo: 20778					
Prep Date:	8/25/2014		Analysis Date: 8/25/2014		SeqNo: 604663		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	ND	200								
3+4-Methylphenol	ND	200								
Phenol	ND	200								
2,4-Dinitrotoluene	ND	0.13								
Hexachlorobenzene	ND	0.13								
Hexachlorobutadiene	ND	0.50								
Hexachloroethane	ND	3.0								
Nitrobenzene	ND	2.0								
Pentachlorophenol	ND	100								
Pyridine	ND	5.0								
2,4,5-Trichlorophenol	ND	400								
2,4,6-Trichlorophenol	ND	2.0								
Cresols, Total	ND	200								
Surr: 2-Fluorophenol	0.13		0.2000		66.6	18.6	88.6			
Surr: Phenol-d5	0.11		0.2000		53.5	19.5	61.8			
Surr: 2,4,6-Tribromophenol	0.11		0.2000		56.3	29.7	130			
Surr: Nitrobenzene-d5	0.10		0.1000		104	45.1	101			S
Surr: 2-Fluorobiphenyl	0.10		0.1000		104	46.6	99.3			S
Surr: 4-Terphenyl-d14	0.093		0.1000		92.5	40.8	109			

Sample ID	ics-14927		SampType: LCS		TestCode: EPA Method 8270C TCLP					
Client ID:	LCSS		Batch ID: 14927		RunNo: 20778					
Prep Date:	8/25/2014		Analysis Date: 8/25/2014		SeqNo: 604665		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	0.091	0.010	0.1000	0	90.7	32.1	120			
3+4-Methylphenol	0.19	0.010	0.2000	0	96.2	10.9	204			
2,4-Dinitrotoluene	0.098	0.010	0.1000	0	97.5	41.9	116			
Hexachlorobenzene	0.11	0.010	0.1000	0	108	37.7	99.4			S
Hexachlorobutadiene	0.078	0.010	0.1000	0	77.8	30.6	107			
Hexachloroethane	0.092	0.010	0.1000	0	91.7	27.4	121			
Nitrobenzene	0.11	0.010	0.1000	0	106	28.6	134			
Pentachlorophenol	0.070	0.010	0.1000	0	70.2	7.71	111			
Pyridine	0.059	0.010	0.1000	0	58.6	8.54	92.4			
2,4,5-Trichlorophenol	0.089	0.010	0.1000	0	89.4	25.3	146			
2,4,6-Trichlorophenol	0.081	0.010	0.1000	0	81.1	21.5	145			
Cresols, Total	0.28	0.010	0.3000	0	94.3	30	136			
Surr: 2-Fluorophenol	0.14		0.2000		71.5	18.6	88.6			
Surr: Phenol-d5	0.098		0.2000		48.9	19.5	61.8			

### 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	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B60

28-Aug-14

Client: Western Refining Southwest, Gallup

Project: Underground Tank

Sample ID	lcs-14927		SampType: LCS	TestCode: EPA Method 8270C TCLP						
Client ID:	LCSS		Batch ID: 14927	RunNo: 20778						
Prep Date:	8/25/2014		Analysis Date: 8/25/2014	SeqNo: 604665		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	0.14		0.2000		72.3	29.7	130			
Surr: Nitrobenzene-d5	0.10		0.1000		104	45.1	101			S
Surr: 2-Fluorobiphenyl	0.096		0.1000		96.2	46.6	99.3			
Surr: 4-Terphenyl-d14	0.11		0.1000		110	40.8	109			S

Sample ID	1408b60-001dms		SampType: MS	TestCode: EPA Method 8270C TCLP						
Client ID:	Tank N of Bullet far		Batch ID: 14927	RunNo: 20778						
Prep Date:	8/25/2014		Analysis Date: 8/25/2014	SeqNo: 604667		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	0.095	0.010	0.1000	0	95.1	32.1	120			
3+4-Methylphenol	0.21	0.010	0.2000	0.004700	102	10.9	204			
2,4-Dinitrotoluene	0.10	0.010	0.1000	0	103	41.9	116			
Hexachlorobenzene	0.12	0.010	0.1000	0	118	37.7	99.4			S
Hexachlorobutadiene	0.093	0.010	0.1000	0	92.8	30.6	107			
Hexachloroethane	0.11	0.010	0.1000	0	107	27.4	121			
Nitrobenzene	0.12	0.010	0.1000	0	120	28.6	134			
Pentachlorophenol	0.10	0.010	0.1000	0.003560	101	7.71	111			
Pyridine	0.044	0.010	0.1000	0	43.7	8.54	92.4			
2,4,5-Trichlorophenol	0.10	0.010	0.1000	0	100	25.3	146			
2,4,6-Trichlorophenol	0.10	0.010	0.1000	0	99.6	21.5	145			
Cresols, Total	0.30	0.010	0.3000	0.009320	98.4	10.6	179			
Surr: 2-Fluorophenol	0.14		0.2000		70.5	18.6	88.6			
Surr: Phenol-d5	0.11		0.2000		55.1	19.5	61.8			
Surr: 2,4,6-Tribromophenol	0.17		0.2000		84.5	29.7	130			
Surr: Nitrobenzene-d5	0.11		0.1000		113	45.1	101			S
Surr: 2-Fluorobiphenyl	0.12		0.1000		117	46.6	99.3			S
Surr: 4-Terphenyl-d14	0.12		0.1000		119	40.8	109			S

Sample ID	1408b60-001dmsd		SampType: MSD	TestCode: EPA Method 8270C TCLP						
Client ID:	Tank N of Bullet far		Batch ID: 14927	RunNo: 20778						
Prep Date:	8/25/2014		Analysis Date: 8/25/2014	SeqNo: 604668		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	0.073	0.010	0.1000	0	72.6	32.1	120	26.8	20	R
3+4-Methylphenol	0.14	0.010	0.2000	0.004700	68.4	10.9	204	38.7	20	R
2,4-Dinitrotoluene	0.086	0.010	0.1000	0	86.3	41.9	116	17.9	23.2	
Hexachlorobenzene	0.096	0.010	0.1000	0	96.1	37.7	99.4	20.7	20	R
Hexachlorobutadiene	0.067	0.010	0.1000	0	67.0	30.6	107	32.3	20	R
Hexachloroethane	0.078	0.010	0.1000	0	77.7	27.4	121	31.7	31.3	R

### 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	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B60

28-Aug-14

Client: Western Refining Southwest, Gallup

Project: Underground Tank

Sample ID	1408b60-001dmsd	SampType: MSD			TestCode: EPA Method 8270C TCLP					
Client ID:	Tank N of Bullet far	Batch ID: 14927			RunNo: 20778					
Prep Date:	8/25/2014	Analysis Date: 8/25/2014			SeqNo: 604668		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrobenzene	0.085	0.010	0.1000	0	84.7	28.6	134	34.2	26.6	R
Pentachlorophenol	0.095	0.010	0.1000	0.003560	91.5	7.71	111	9.54	27.9	
Pyridine	0.029	0.010	0.1000	0	29.3	8.54	92.4	39.4	47.4	
2,4,5-Trichlorophenol	0.076	0.010	0.1000	0	76.5	25.3	146	27.0	36.9	
2,4,6-Trichlorophenol	0.077	0.010	0.1000	0	76.6	21.5	145	26.1	37.2	
Cresols, Total	0.21	0.010	0.3000	0.009320	68.3	10.6	179	34.9	27.4	R
Surr: 2-Fluorophenol	0.12		0.2000		58.9	18.6	88.6	0	0	
Surr: Phenol-d5	0.083		0.2000		41.6	19.5	61.8	0	0	
Surr: 2,4,6-Tribromophenol	0.14		0.2000		68.2	29.7	130	0	0	
Surr: Nitrobenzene-d5	0.092		0.1000		92.3	45.1	101	0	0	
Surr: 2-Fluorobiphenyl	0.089		0.1000		88.5	46.6	99.3	0	0	
Surr: 4-Terphenyl-d14	0.095		0.1000		95.4	40.8	109	0	0	

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B60

28-Aug-14

Client: Western Refining Southwest, Gallup

Project: Underground Tank

Sample ID	MB-14939	SampType:	MBLK	TestCode:	EPA Method 7470: Mercury					
Client ID:	PBW	Batch ID:	14939	RunNo:	20788					
Prep Date:	8/25/2014	Analysis Date:	8/26/2014	SeqNo:	605048	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-14939	SampType:	LCS	TestCode:	EPA Method 7470: Mercury					
Client ID:	LCSW	Batch ID:	14939	RunNo:	20788					
Prep Date:	8/25/2014	Analysis Date:	8/26/2014	SeqNo:	605049	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	102	80	120			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1408B60

28-Aug-14

Client: Western Refining Southwest, Gallup

Project: Underground Tank

Sample ID	<b>MB-14938</b>		SampType:	<b>MBLK</b>		TestCode:	<b>EPA 6010B: Total Recoverable Metals</b>			
Client ID:	<b>PBW</b>		Batch ID:	<b>14938</b>		RunNo:	<b>20813</b>			
Prep Date:	<b>8/25/2014</b>		Analysis Date:	<b>8/26/2014</b>		SeqNo:	<b>605616</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Barium	ND	0.020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Lead	ND	0.0050								
Selenium	ND	0.050								
Silver	ND	0.0050								

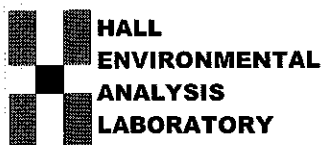
Sample ID	<b>LCS-14938</b>		SampType:	<b>LCS</b>		TestCode:	<b>EPA 6010B: Total Recoverable Metals</b>			
Client ID:	<b>LCSW</b>		Batch ID:	<b>14938</b>		RunNo:	<b>20813</b>			
Prep Date:	<b>8/25/2014</b>		Analysis Date:	<b>8/26/2014</b>		SeqNo:	<b>605617</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.50	0.020	0.5000	0	100	80	120			
Barium	0.48	0.020	0.5000	0	97.0	80	120			
Cadmium	0.49	0.0020	0.5000	0	98.2	80	120			
Chromium	0.49	0.0060	0.5000	0	97.6	80	120			
Lead	0.49	0.0050	0.5000	0	98.0	80	120			
Selenium	0.49	0.050	0.5000	0	98.8	80	120			
Silver	0.49	0.0050	0.5000	0	97.4	80	120			

Sample ID	<b>LCS Spike Check</b>		SampType:	<b>LCS</b>		TestCode:	<b>EPA 6010B: Total Recoverable Metals</b>			
Client ID:	<b>LCSW</b>		Batch ID:	<b>14938</b>		RunNo:	<b>20813</b>			
Prep Date:	<b>8/25/2014</b>		Analysis Date:	<b>8/26/2014</b>		SeqNo:	<b>605619</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.49	0.020	0.5000	0	98.9	80	120			
Barium	0.47	0.020	0.5000	0	93.1	80	120			
Cadmium	0.47	0.0020	0.5000	0	94.6	80	120			
Chromium	0.47	0.0060	0.5000	0	93.8	80	120			
Lead	0.47	0.0050	0.5000	0	93.4	80	120			
Selenium	0.45	0.050	0.5000	0	90.4	80	120			
Silver	0.089	0.0050	0.1000	0	88.5	80	120			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1408B60

RcptNo: 1

Received by/date:

MLG

08/21/14

Logged By: Lindsay Mangin

8/21/2014 4:52:00 PM

*Lindsay Mangin*

Completed By: Lindsay Mangin

8/22/2014 8:08:35 AM

*Lindsay Mangin*

Reviewed By:

my

08/22/14

### Chain of Custody

- |  |   |    |             |
|--|---|----|-------------|
| 1. Custody seals intact on sample bottles? | Yes <input checked="" type="checkbox"/> | No | Not Present |
| 2. Is Chain of Custody complete?           | Yes <input checked="" type="checkbox"/> | No | Not Present |
| 3. How was the sample delivered?           | Client                                  |    |             |

### Log In

- |  |   |  |    |
|--|---|--|----|
| 4. Was an attempt made to cool the samples?  | Yes <input checked="" type="checkbox"/> | No                                     | NA |
| 5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to $6.0^{\circ}\text{C}$ | Yes <input checked="" type="checkbox"/> | No                                     | NA |
| 6. Sample(s) in proper container(s)?   | Yes <input checked="" type="checkbox"/> | No                                     |    |
| 7. Sufficient sample volume for indicated test(s)?   | Yes <input checked="" type="checkbox"/> | No                                     |    |
| 8. Are samples (except VOA and ONG) properly preserved?  | Yes <input checked="" type="checkbox"/> | No <input checked="" type="checkbox"/> |    |
| 9. Was preservative added to bottles?  | Yes <input checked="" type="checkbox"/> | No <input checked="" type="checkbox"/> | NA |

FOR METALS ANALYSIS: ADDED 10 mL  $\text{HNO}_3$  TO OXIDE FOR ACCEPTABLE PH.

- |   |   |  |  |
|---|---|--|--|
| 10. VOA vials have zero headspace?  | Yes <input checked="" type="checkbox"/> | No                                     | No VOA Vials   |
| 11. Were any sample containers received broken?   | Yes                                     | No <input checked="" type="checkbox"/> |  |
| 12. Does paperwork match bottle labels?<br>(Note discrepancies on chain of custody)       | Yes <input checked="" type="checkbox"/> | No                                     | # of preserved bottles checked for pH:<br><2 or >12 unless noted |
| 13. Are matrices correctly identified on Chain of Custody?                                | Yes <input checked="" type="checkbox"/> | No                                     | Adjusted: <i>YES</i>   |
| 14. Is it clear what analyses were requested?   | Yes <input checked="" type="checkbox"/> | No                                     |  |
| 15. Were all holding times able to be met?<br>(If no, notify customer for authorization.) | Yes <input checked="" type="checkbox"/> | No                                     | Checked by: <i>[Signature]</i>                                   |

### Special Handling (if applicable)

- |   |     |    |  |
|---|-----|----|--|
| 16. Was client notified of all discrepancies with this order? | Yes | No | NA <input checked="" type="checkbox"/> |
|---|-----|----|--|

Person Notified:

Date:

By Whom:

Via:

eMail

Phone

Fax

In Person

Regarding:

Client Instructions:

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Not Present			

## HALL ENVIRONMENTAL ANALYSIS LABORATORY

[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

## Analysis Request

Phone #:	505	863	0930	Project Manager:		Beck Larsen		On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Sample Temperature: 1.0		HEAL No. 1408B60		TOT VOC (8260)		TCLP VOC (8260)		TOT SVOC (8270)		TCLP SVOC (8270)		TCLP METALS 6010/6020	
email or Fax#:	505	863	0930	QA/QC Package:		<input type="checkbox"/> Level 4 (Full Validation)		Sample Request ID		Matrix		Time		Date		Container Type and #		Preservative Type					
<input type="checkbox"/> Standard							Tank N of Bullet farm		H2O		13:15		8/19/2014		40ml-3		HCL						
<input type="checkbox"/> Other							Tank N of Bullet farm		H2O		13:15		8/19/2014		40ml-3		HCL						
<input type="checkbox"/> EDD (Type)							Tank N of Bullet farm		H2O		13:15		8/19/2014		1-liter - 1		None						
							Tank N of Bullet farm		H2O		13:15		8/19/2014		1-liter - 1		None		X				
							Tank N of Bullet farm		H2O		13:15		8/19/2014		500ml-1		HNO3		X				

Date: 08-21-14	Time: 14:00	Relinquished by: <i>Alan R</i>	Received by: <i>Michael J</i>	Date 08/21/14	Time
Date: 08/21/14	Time: 16:22	Relinquished by: <i>[Signature]</i>	Received by: <i>[Signature]</i>	Date 08/21/14	Time

FIRE TRAINING

— Bullet —  
— Tonic —

if necessary, samples submitted to Wall 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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**Appendix A-2**  
**Hall Environmental Analysis Laboratory, Inc. -**  
**September 24, 2014**  
**Analytical Report No. 1409871**

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Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

October 07, 2014

Beck Larsen

Western Refining Southwest, Gallup  
92 Giant Crossing Road  
Gallup, NM 87301  
TEL: (505) 722-0258  
FAX (505) 722-0210

RE: Excavation Soil Underground Tank Soil Piles

OrderNo.: 1409871

Dear Beck Larsen:

Hall Environmental Analysis Laboratory received 1 sample(s) on 9/17/2014 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued September 24, 2014.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

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

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1409871**

Date Reported: **10/7/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Excavation Soil Underground Ta

**Project:** Excavation Soil Underground Tank Soil

**Collection Date:** 9/15/2014 2:00:00 PM

**Lab ID:** 1409871-001

**Matrix:** SOIL

**Received Date:** 9/17/2014 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	840	10		mg/Kg	1	9/19/2014 7:08:20 PM	15363
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	9/19/2014 7:08:20 PM	15363
Surr: DNOP	101	57.9-140		%REC	1	9/19/2014 7:08:20 PM	15363
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	5.5	5.0		mg/Kg	1	9/22/2014 10:23:45 PM	15378
Surr: BFB	99.2	80-120		%REC	1	9/22/2014 10:23:45 PM	15378
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	0.074	0.050		mg/Kg	1	9/22/2014 10:23:45 PM	15378
Toluene	ND	0.050		mg/Kg	1	9/22/2014 10:23:45 PM	15378
Ethylbenzene	ND	0.050		mg/Kg	1	9/22/2014 10:23:45 PM	15378
Xylenes, Total	0.34	0.10		mg/Kg	1	9/22/2014 10:23:45 PM	15378
Surr: 4-Bromofluorobenzene	104	80-120		%REC	1	9/22/2014 10:23:45 PM	15378
<b>MERCURY, TCLP</b>							Analyst: <b>JLF</b>
Mercury	ND	0.020		mg/L	1	9/23/2014 10:53:44 AM	15428
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	5.0		mg/L	1	9/20/2014 10:10:57 AM	15406
Barium	ND	100		mg/L	1	9/20/2014 10:10:57 AM	15406
Cadmium	ND	1.0		mg/L	1	9/20/2014 10:10:57 AM	15406
Chromium	ND	5.0		mg/L	1	9/20/2014 10:10:57 AM	15406
Lead	ND	5.0		mg/L	1	9/20/2014 10:10:57 AM	15406
Selenium	ND	1.0		mg/L	1	9/20/2014 10:10:57 AM	15406
Silver	ND	5.0		mg/L	1	9/20/2014 10:10:57 AM	15406
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	9/23/2014 12:27:32 PM	15413
3+4-Methylphenol	ND	200		mg/L	1	9/23/2014 12:27:32 PM	15413
Phenol	ND	200		mg/L	1	9/23/2014 12:27:32 PM	15413
2,4-Dinitrotoluene	ND	0.13		mg/L	1	9/23/2014 12:27:32 PM	15413
Hexachlorobenzene	ND	0.13		mg/L	1	9/23/2014 12:27:32 PM	15413
Hexachlorobutadiene	ND	0.50		mg/L	1	9/23/2014 12:27:32 PM	15413
Hexachloroethane	ND	3.0		mg/L	1	9/23/2014 12:27:32 PM	15413
Nitrobenzene	ND	2.0		mg/L	1	9/23/2014 12:27:32 PM	15413
Pentachlorophenol	ND	100		mg/L	1	9/23/2014 12:27:32 PM	15413
Pyridine	ND	5.0		mg/L	1	9/23/2014 12:27:32 PM	15413
2,4,5-Trichlorophenol	ND	400		mg/L	1	9/23/2014 12:27:32 PM	15413
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	9/23/2014 12:27:32 PM	15413
Cresols, Total	ND	200		mg/L	1	9/23/2014 12:27:32 PM	15413
Surr: 2-Fluorophenol	53.7	25-105		%REC	1	9/23/2014 12:27:32 PM	15413

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2.
RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1409871**Date Reported: **10/7/2014****CLIENT:** Western Refining Southwest, Gallup**Client Sample ID:** Excavation Soil Underground Ta**Project:** Excavation Soil Underground Tank Soil**Collection Date:** 9/15/2014 2:00:00 PM**Lab ID:** 1409871-001**Matrix:** SOIL**Received Date:** 9/17/2014 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
Surr: Phenol-d5	55.0	22.3-70.3		%REC	1	9/23/2014 12:27:32 PM	15413
Surr: 2,4,6-Tribromophenol	44.8	30.4-134		%REC	1	9/23/2014 12:27:32 PM	15413
Surr: Nitrobenzene-d5	92.3	54.8-128		%REC	1	9/23/2014 12:27:32 PM	15413
Surr: 2-Fluorobiphenyl	91.4	53.3-122		%REC	1	9/23/2014 12:27:32 PM	15413
Surr: 4-Terphenyl-d14	84.9	51.8-133		%REC	1	9/23/2014 12:27:32 PM	15413
<b>VOLATILES BY 8260B/1311</b>							Analyst: <b>DJF</b>
Benzene	ND	0.30		mg/L	1	9/22/2014 6:03:07 PM	15387
2-Butanone	ND	200		mg/L	1	9/22/2014 6:03:07 PM	15387
Carbon Tetrachloride	ND	0.50		mg/L	1	9/22/2014 6:03:07 PM	15387
Chlorobenzene	ND	0.30		mg/L	1	9/22/2014 6:03:07 PM	15387
Chloroform	ND	6.0		mg/L	1	9/22/2014 6:03:07 PM	15387
1,4-Dichlorobenzene	ND	7.5		mg/L	1	9/22/2014 6:03:07 PM	15387
1,2-Dichloroethane (EDC)	ND	0.50		mg/L	1	9/22/2014 6:03:07 PM	15387
1,1-Dichloroethene	ND	0.30		mg/L	1	9/22/2014 6:03:07 PM	15387
Hexachlorobutadiene	ND	0.50		mg/L	1	9/22/2014 6:03:07 PM	15387
Tetrachloroethene (PCE)	ND	0.70		mg/L	1	9/22/2014 6:03:07 PM	15387
Trichloroethene (TCE)	ND	0.30		mg/L	1	9/22/2014 6:03:07 PM	15387
Vinyl chloride	ND	0.20		mg/L	1	9/22/2014 6:03:07 PM	15387
Surr: 1,2-Dichloroethane-d4	84.9	69.9-130		%REC	1	9/22/2014 6:03:07 PM	15387
Surr: 4-Bromofluorobenzene	87.4	71.2-123		%REC	1	9/22/2014 6:03:07 PM	15387
Surr: Dibromofluoromethane	86.9	73.9-134		%REC	1	9/22/2014 6:03:07 PM	15387
Surr: Toluene-d8	91.5	81.9-122		%REC	1	9/22/2014 6:03:07 PM	15387
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>JME</b>
Petroleum Hydrocarbons, TR	1000	200		mg/Kg	10	9/19/2014	15373

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2.
RL	Reporting Detection Limit



12065 Lebanon Rd.  
Mt. Juliet, TN 37122  
(615) 758-5858  
1-800-767-5859  
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

September 24, 2014

Hall Environmental Analysis Laborat  
4901 Hawkins NE  
Albuquerque, NM 87109

Date Received : September 19, 2014  
Description :

Sample ID : 1409871-001B EXCAVATION SOIL UNDERGROUND

Collected By :  
Collection Date : 09/15/14 14:00

ESC Sample # : L722652-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	Non-Corrosive			9045D	09/24/14	1
Ignitability	See Footnote		Deg. F	D93/1010A	09/23/14	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/kg	9012B	09/21/14	1
Reactive Sulf.(SW846 7.3.4.1)	BDL	25.	mg/kg	9034/9030B	09/20/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 09/24/14 11:00 Printed: 09/24/14 11:00  
L722652-01 (IGNITABILITY) - Did Not Ignite @ 170 F





YOUR LAB OF CHOICE

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report  
Level II

L722652

12065 Lebanon Rd.  
Mt. Juliet, TN 37122  
(615) 758-5858  
1-800-767-5859  
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

September 24, 2014

Analyte	Result	Laboratory Blank Units	% Rec	Limit	Batch	Date Analyzed
Reactive CN (SW846 7.3.3.2)	< .125	mg/kg			WG743997	09/21/14 16:46
Reactive Sulf. (SW846 7.3.4.1)	< 25	mg/kg			WG743996	09/20/14 13:04

Analyte	Units	Result	Duplicate Duplicate	RPD	Limit	Ref Samp	Batch
Reactive CN (SW846 7.3.3.2)	mg/kg	0.0	0.0	0.0	20	L722232-01	WG743997
Reactive Sulf. (SW846 7.3.4.1)	mg/kg	0.0	0.0	0.0	20	L722232-01	WG743996
Ignitability	Deg. F	0.00	0.00	0.00	10	L722648-04	WG744379
Corrosivity		0.0	0.0	0.0	10	L722646-01	WG744447
Corrosivity		0.0	0.0	0.0	10	L723025-01	WG744447

Analyte	Units	Laboratory Control Known Val	Sample Result	% Rec	Limit	Batch
Reactive CN (SW846 7.3.3.2)	mg/kg	.1	0.0999	99.9	50-150	WG743997
Reactive Sulf. (SW846 7.3.4.1)	mg/kg	100	85.0	85.0	70-130	WG743996
Ignitability	Deg. F	82	83.0	101.	93-107	WG744379
Corrosivity		6.33	6.30	99.5	98.3-101.7	WG744447

Analyte	Units	Laboratory Control Result	Sample Ref	Duplicate %Rec	Limit	RPD	Limit	Batch
Reactive CN (SW846 7.3.3.2)	mg/kg	0.0998	0.0999	100.	50-150	0.100	20	WG743997
Reactive Sulf. (SW846 7.3.4.1)	mg/kg	95.0	85.0	95.0	70-130	11.1	20	WG743996
Ignitability	Deg. F	82.0	83.0	100.	93-107	1.21	20	WG744379
Corrosivity		6.30	6.30	100.	98.3-101.7	0.0	10	WG744447

Batch number / Run number / Sample number cross reference

WG743997: R2991469: L722652-01  
WG743996: R2991631: L722652-01  
WG744379: R2992252: L722652-01  
WG744447: R2992418: L722652-01

\* \* Calculations are performed prior to rounding of reported values.  
\* Performance of this Analyte is outside of established criteria.  
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409871

07-Oct-14

**Client:** Western Refining Southwest, Gallup  
**Project:** Excavation Soil Underground Tank Soil Piles

Sample ID	MB-15373		SampType:	MBLK		TestCode:	EPA Method 418.1: TPH				
Client ID:	PBS		Batch ID:	15373		RunNo:	21288				
Prep Date:	9/18/2014		Analysis Date:	9/19/2014		SeqNo:	621284		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Petroleum Hydrocarbons, TR	ND	20									

Sample ID	LCS-15373		SampType: LCS		TestCode: EPA Method 418.1: TPH					
Client ID:	LCSS		Batch ID: 15373		RunNo: 21288					
Prep Date:	9/18/2014		Analysis Date: 9/19/2014		SeqNo: 621285		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	96	20	100.0	0	95.8	80	120			

### 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	ND Not Detected at the Reporting Limit
O RSD is greater than RSDlimit	P Sample pH greater than 2.
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S Spike Recovery outside accepted recovery limits	

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409871

07-Oct-14

**Client:** Western Refining Southwest, Gallup  
**Project:** Excavation Soil Underground Tank Soil Piles

Sample ID	MB-15363		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 15363		RunNo: 21269					
Prep Date:	9/18/2014		Analysis Date: 9/18/2014		SeqNo: 620601		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		100	57.9	140			

Sample ID	LCS-15363		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 15363		RunNo: 21269					
Prep Date:	9/18/2014		Analysis Date: 9/18/2014		SeqNo: 620602		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	62	10	50.00	0	125	68.6	130			
Surr: DNOP	5.2		5.000		104	57.9	140			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409871

07-Oct-14

**Client:** Western Refining Southwest, Gallup  
**Project:** Excavation Soil Underground Tank Soil Piles

Sample ID	MB-15378		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 15378		RunNo: 21342					
Prep Date:	9/18/2014		Analysis Date: 9/22/2014		SeqNo: 623292		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	940		1000		94.2	80	120			

Sample ID	LCS-15378		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 15378		RunNo: 21342					
Prep Date:	9/18/2014		Analysis Date: 9/22/2014		SeqNo: 623293		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	65.8	139			
Surr: BFB	1000		1000		101	80	120			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
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R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409871

07-Oct-14

**Client:** Western Refining Southwest, Gallup  
**Project:** Excavation Soil Underground Tank Soil Piles

Sample ID	MB-15378		SampType: MBLK		TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBS		Batch ID: 15378		RunNo: 21342					
Prep Date:	9/18/2014		Analysis Date: 9/22/2014		SeqNo: 623326		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

Sample ID	LCS-15378			SampType:	LCS			TestCode:	EPA Method 8021B: Volatiles		
Client ID:	LCSS			Batch ID:	15378			RunNo:	21342		
Prep Date:	9/18/2014			Analysis Date:	9/22/2014			SeqNo:	623327		
								Units:	mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	0.91	0.050	1.000	0	90.6	80	120				
Toluene	0.91	0.050	1.000	0	91.1	80	120				
Ethylbenzene	0.92	0.050	1.000	0	92.4	80	120				
Xylenes, Total	2.8	0.10	3.000	0	92.6	80	120				
Surr: 4-Bromofluorobenzene	1.1		1.000		107	80	120				

### Qualifiers:

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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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409871

07-Oct-14

Client: Western Refining Southwest, Gallup

Project: Excavation Soil Underground Tank Soil Piles

Sample ID	<b>mb-15387</b>		SampType:	<b>MBLK</b>		TestCode:	<b>Volatiles by 8260B/1311</b>			
Client ID:	<b>PBS</b>		Batch ID:	<b>15387</b>		RunNo:	<b>21356</b>			
Prep Date:	<b>9/18/2014</b>		Analysis Date:	<b>9/22/2014</b>		SeqNo:	<b>623771</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.30								
2-Butanone	ND	200								
Carbon Tetrachloride	ND	0.50								
Chlorobenzene	ND	0.30								
Chloroform	ND	6.0								
1,4-Dichlorobenzene	ND	7.5								
1,2-Dichloroethane (EDC)	ND	0.50								
1,1-Dichloroethene	ND	0.30								
Hexachlorobutadiene	ND	0.50								
Tetrachloroethene (PCE)	ND	0.70								
Trichloroethene (TCE)	ND	0.30								
Vinyl chloride	ND	0.20								
Surr: 1,2-Dichloroethane-d4	0.18		0.2000		88.7	69.9	130			
Surr: 4-Bromofluorobenzene	0.17		0.2000		85.8	71.2	123			
Surr: Dibromofluoromethane	0.19		0.2000		93.9	73.9	134			
Surr: Toluene-d8	0.18		0.2000		91.0	81.9	122			

Sample ID	<b>lcs-15387</b>		SampType:	<b>LCS</b>		TestCode:	<b>Volatiles by 8260B/1311</b>			
Client ID:	<b>LCSS</b>		Batch ID:	<b>15387</b>		RunNo:	<b>21356</b>			
Prep Date:	<b>9/18/2014</b>		Analysis Date:	<b>9/22/2014</b>		SeqNo:	<b>623772</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.40	0.30	0.4000	0	99.4	51.1	171			
Chlorobenzene	0.42	0.30	0.4000	0	104	36.1	191			
1,1-Dichloroethene	0.44	0.30	0.4000	0	110	49.1	162			
Trichloroethene (TCE)	0.36	0.30	0.4000	0	90.4	41.2	166			
Surr: 1,2-Dichloroethane-d4	0.17		0.2000		86.7	69.9	130			
Surr: 4-Bromofluorobenzene	0.19		0.2000		92.7	71.2	123			
Surr: Dibromofluoromethane	0.17		0.2000		87.0	73.9	134			
Surr: Toluene-d8	0.18		0.2000		90.7	81.9	122			

Sample ID	<b>1409871-001ams</b>		SampType:	<b>MS</b>		TestCode:	<b>Volatiles by 8260B/1311</b>			
Client ID:	<b>Excavation Soil Und</b>		Batch ID:	<b>15387</b>		RunNo:	<b>21356</b>			
Prep Date:	<b>9/18/2014</b>		Analysis Date:	<b>9/22/2014</b>		SeqNo:	<b>623774</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.40	0.30	0.3998	0	98.9	51.1	171			
Chlorobenzene	0.41	0.30	0.3998	0	102	36.1	191			
1,1-Dichloroethene	0.45	0.30	0.3998	0	113	49.1	162			
Trichloroethene (TCE)	0.42	0.30	0.3998	0	104	41.2	166			

### 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	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409871

07-Oct-14

**Client:** Western Refining Southwest, Gallup  
**Project:** Excavation Soil Underground Tank Soil Piles

Sample ID	1409871-001ams	SampType:	MS	TestCode:	Volatiles by 8260B/1311					
Client ID:	Excavation Soil Und	Batch ID:	15387	RunNo:	21356					
Prep Date:	9/18/2014	Analysis Date:	9/22/2014	SeqNo:	623774	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.18		0.1999		91.6	69.9	130			
Surr: 4-Bromofluorobenzene	0.17		0.1999		86.1	71.2	123			
Surr: Dibromofluoromethane	0.19		0.1999		95.7	73.9	134			
Surr: Toluene-d8	0.18		0.1999		90.0	81.9	122			

Sample ID	1409871-001amsd	SampType:	MSD	TestCode:	Volatiles by 8260B/1311					
Client ID:	Excavation Soil Und	Batch ID:	15387	RunNo:	21356					
Prep Date:	9/18/2014	Analysis Date:	9/22/2014	SeqNo:	623775	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.40	0.30	0.3998	0	99.2	51.1	171	0.323	20	
Chlorobenzene	0.40	0.30	0.3998	0	99.1	36.1	191	3.37	20	
1,1-Dichloroethene	0.43	0.30	0.3998	0	107	49.1	162	4.75	20	
Trichloroethene (TCE)	0.40	0.30	0.3998	0	99.3	41.2	166	4.49	20	
Surr: 1,2-Dichloroethane-d4	0.18		0.1999		90.2	69.9	130	0	0	
Surr: 4-Bromofluorobenzene	0.16		0.1999		81.7	71.2	123	0	0	
Surr: Dibromofluoromethane	0.19		0.1999		92.9	73.9	134	0	0	
Surr: Toluene-d8	0.17		0.1999		84.9	81.9	122	0	0	

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409871

07-Oct-14

**Client:** Western Refining Southwest, Gallup  
**Project:** Excavation Soil Underground Tank Soil Piles

Sample ID	<b>mb-15413</b>		SampType:	<b>MBLK</b>		TestCode:	<b>EPA Method 8270C TCLP</b>			
Client ID:	<b>PBS</b>		Batch ID:	<b>15413</b>		RunNo:	<b>21387</b>			
Prep Date:	<b>9/22/2014</b>		Analysis Date:	<b>9/23/2014</b>		SeqNo:	<b>624719</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	ND	200								
3+4-Methylphenol	ND	200								
Phenol	ND	200								
2,4-Dinitrotoluene	ND	0.13								
Hexachlorobenzene	ND	0.13								
Hexachlorobutadiene	ND	0.50								
Hexachloroethane	ND	3.0								
Nitrobenzene	ND	2.0								
Pentachlorophenol	ND	100								
Pyridine	ND	5.0								
2,4,5-Trichlorophenol	ND	400								
2,4,6-Trichlorophenol	ND	2.0								
Cresols, Total	ND	200								
Surr: 2-Fluorophenol	0.16		0.2000		78.8	25	105			
Surr: Phenol-d5	0.14		0.2000		68.7	22.3	70.3			
Surr: 2,4,6-Tribromophenol	0.16		0.2000		79.7	30.4	134			
Surr: Nitrobenzene-d5	0.092		0.1000		91.6	54.8	128			
Surr: 2-Fluorobiphenyl	0.086		0.1000		85.6	53.3	122			
Surr: 4-Terphenyl-d14	0.090		0.1000		90.1	51.8	133			

Sample ID	<b>lcs-15413</b>		SampType:	<b>LCS</b>		TestCode:	<b>EPA Method 8270C TCLP</b>			
Client ID:	<b>LCSS</b>		Batch ID:	<b>15413</b>		RunNo:	<b>21387</b>			
Prep Date:	<b>9/22/2014</b>		Analysis Date:	<b>9/23/2014</b>		SeqNo:	<b>624720</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	0.076	0.010	0.1000	0	75.9	52.2	95.7			
3+4-Methylphenol	0.17	0.010	0.2000	0	85.5	52.4	142			
2,4-Dinitrotoluene	0.067	0.010	0.1000	0	67.1	43.4	110			
Hexachlorobenzene	0.078	0.010	0.1000	0	78.1	43.6	88.4			
Hexachlorobutadiene	0.064	0.010	0.1000	0	63.6	38.6	88.4			
Hexachloroethane	0.074	0.010	0.1000	0	73.7	45.7	83.6			
Nitrobenzene	0.077	0.010	0.1000	0	77.1	51.9	112			
Pentachlorophenol	0.033	0.010	0.1000	0	33.1	15.2	81.5			
Pyridine	0.062	0.010	0.1000	0	61.9	11.2	95.1			
2,4,5-Trichlorophenol	0.067	0.010	0.1000	0	66.8	46.9	110			
2,4,6-Trichlorophenol	0.064	0.010	0.1000	0	64.3	36.1	111			
Cresols, Total	0.25	0.010	0.3000	0	82.3	30	136			
Surr: 2-Fluorophenol	0.14		0.2000		71.6	25	105			
Surr: Phenol-d5	0.14		0.2000		70.7	22.3	70.3			S

### Qualifiers:

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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
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
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S	Spike Recovery outside accepted recovery limits		

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409871

07-Oct-14

**Client:** Western Refining Southwest, Gallup  
**Project:** Excavation Soil Underground Tank Soil Piles

Sample ID	<b>lcs-15413</b>		SampType:	<b>LCS</b>		TestCode:	<b>EPA Method 8270C TCLP</b>			
Client ID:	<b>LCSS</b>		Batch ID:	<b>15413</b>		RunNo:	<b>21387</b>			
Prep Date:	<b>9/22/2014</b>		Analysis Date:	<b>9/23/2014</b>		SeqNo:	<b>624720</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	0.11		0.2000		56.0	30.4	134			
Surr: Nitrobenzene-d5	0.077		0.1000		76.6	54.8	128			
Surr: 2-Fluorobiphenyl	0.074		0.1000		74.0	53.3	122			
Surr: 4-Terphenyl-d14	0.076		0.1000		75.5	51.8	133			

Sample ID	<b>1409871-001ams</b>		SampType:	<b>MS</b>		TestCode:	<b>EPA Method 8270C TCLP</b>			
Client ID:	<b>Excavation Soil Und</b>		Batch ID:	<b>15413</b>		RunNo:	<b>21387</b>			
Prep Date:	<b>9/22/2014</b>		Analysis Date:	<b>9/23/2014</b>		SeqNo:	<b>624733</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	0.062	0.010	0.1000	0	61.8	32.1	120			
3+4-Methylphenol	0.13	0.010	0.2000	0	64.1	10.9	204			
2,4-Dinitrotoluene	0.060	0.010	0.1000	0	59.9	41.9	116			
Hexachlorobenzene	0.066	0.010	0.1000	0	66.1	37.7	99.4			
Hexachlorobutadiene	0.054	0.010	0.1000	0	53.7	30.6	107			
Hexachloroethane	0.062	0.010	0.1000	0	61.5	27.4	121			
Nitrobenzene	0.064	0.010	0.1000	0	63.7	28.6	134			
Pentachlorophenol	0.025	0.010	0.1000	0	24.8	7.71	111			
Pyridine	0.056	0.010	0.1000	0	55.7	8.54	92.4			
2,4,5-Trichlorophenol	0.037	0.010	0.1000	0	37.0	25.3	146			
2,4,6-Trichlorophenol	0.037	0.010	0.1000	0	37.5	21.5	145			
Cresols, Total	0.19	0.010	0.3000	0	63.3	10.6	179			
Surr: 2-Fluorophenol	0.078		0.2000		39.2	25	105			
Surr: Phenol-d5	0.083		0.2000		41.3	22.3	70.3			
Surr: 2,4,6-Tribromophenol	0.070		0.2000		34.8	30.4	134			
Surr: Nitrobenzene-d5	0.065		0.1000		65.5	54.8	128			
Surr: 2-Fluorobiphenyl	0.062		0.1000		61.7	53.3	122			
Surr: 4-Terphenyl-d14	0.066		0.1000		65.9	51.8	133			

Sample ID	<b>1409871-001amsd</b>		SampType:	<b>MSD</b>		TestCode:	<b>EPA Method 8270C TCLP</b>			
Client ID:	<b>Excavation Soil Und</b>		Batch ID:	<b>15413</b>		RunNo:	<b>21387</b>			
Prep Date:	<b>9/22/2014</b>		Analysis Date:	<b>9/23/2014</b>		SeqNo:	<b>624734</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	0.058	0.010	0.1000	0	57.8	32.1	120	6.56	20	
3+4-Methylphenol	0.13	0.010	0.2000	0	63.8	10.9	204	0.547	20	
2,4-Dinitrotoluene	0.057	0.010	0.1000	0	57.2	41.9	116	4.61	23.2	
Hexachlorobenzene	0.064	0.010	0.1000	0	64.4	37.7	99.4	2.51	20	
Hexachlorobutadiene	0.046	0.010	0.1000	0	46.5	30.6	107	14.3	20	
Hexachloroethane	0.057	0.010	0.1000	0	57.4	27.4	121	7.00	31.3	

### 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      | ND Not Detected at the Reporting Limit               |
| O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |
| R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
| S Spike Recovery outside accepted recovery limits |  |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409871

07-Oct-14

**Client:** Western Refining Southwest, Gallup  
**Project:** Excavation Soil Underground Tank Soil Piles

Sample ID	1409871-001amsd	SampType:	MSD		TestCode:	EPA Method 8270C TCLP					
Client ID:	Excavation Soil Und	Batch ID:	15413		RunNo:	21387					
Prep Date:	9/22/2014	Analysis Date:	9/23/2014		SeqNo:	624734		Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Nitrobenzene	0.057	0.010	0.1000	0	56.8	28.6	134	11.5	26.6		
Pentachlorophenol	0.031	0.010	0.1000	0	31.3	7.71	111	23.3	27.9		
Pyridine	0.051	0.010	0.1000	0	50.5	8.54	92.4	9.75	47.4		
2,4,5-Trichlorophenol	0.058	0.010	0.1000	0	57.8	25.3	146	44.0	36.9	R	
2,4,6-Trichlorophenol	0.051	0.010	0.1000	0	50.7	21.5	145	30.1	37.2		
Cresols, Total	0.19	0.010	0.3000	0	61.8	10.6	179	2.46	27.4		
Surr: 2-Fluorophenol	0.11		0.2000		54.0	25	105	0	0		
Surr: Phenol-d5	0.097		0.2000		48.3	22.3	70.3	0	0		
Surr: 2,4,6-Tribromophenol	0.10		0.2000		52.3	30.4	134	0	0		
Surr: Nitrobenzene-d5	0.059		0.1000		58.6	54.8	128	0	0		
Surr: 2-Fluorobiphenyl	0.054		0.1000		54.4	53.3	122	0	0		
Surr: 4-Terphenyl-d14	0.068		0.1000		68.3	51.8	133	0	0		

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409871

07-Oct-14

**Client:** Western Refining Southwest, Gallup  
**Project:** Excavation Soil Underground Tank Soil Piles

Sample ID	MB-15428		SampType:	MBLK		TestCode:	MERCURY, TCLP				
Client ID:	PBW		Batch ID:	15428		RunNo:	21367				
Prep Date:	9/22/2014		Analysis Date:	9/23/2014		SeqNo:	623963		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercurv	ND	0.020									

Sample ID	LCS-15428			SampType:	LCS		TestCode:	MERCURY, TCLP			
Client ID:	LCSW			Batch ID:	15428		RunNo:	21367			
Prep Date:	9/22/2014			Analysis Date:	9/23/2014		SeqNo:	623964		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.020	0.005000	0	98.4	80	120				

Sample ID	1409871-001AMS		SampType: MS		TestCode: MERCURY, TCLP					
Client ID:	Excavation Soil Und		Batch ID: 15428		RunNo: 21367					
Prep Date:	9/22/2014		Analysis Date: 9/23/2014		SeqNo: 623966		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020	0.005000	0	96.9	75	125			

Sample ID	1409871-001AMSD			SampType:	MSD		TestCode:	MERCURY, TCLP			
Client ID:	Excavation Soil Und			Batch ID:	15428		RunNo:	21367			
Prep Date:	9/22/2014		Analysis Date:	9/23/2014		SeqNo:	623967		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.020	0.005000	0	99.4	75	125	0	20		

### 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      | ND Not Detected at the Reporting Limit               |
| O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |
| R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
| S Spike Recovery outside accepted recovery limits |  |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409871

07-Oct-14

**Client:** Western Refining Southwest, Gallup  
**Project:** Excavation Soil Underground Tank Soil Piles

Sample ID	MB-15406	SampType: MBLK			TestCode: EPA Method 6010B: TCLP Metals					
Client ID:	PBW	Batch ID: 15406			RunNo: 21324					
Prep Date:	9/19/2014	Analysis Date: 9/20/2014			SeqNo: 622314		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	5.0								
Barium	ND	100								
Cadmium	ND	1.0								
Chromium	ND	5.0								
Lead	ND	5.0								
Selenium	ND	1.0								
Silver	ND	5.0								

Sample ID	LCS-15406		SampType: LCS		TestCode: EPA Method 6010B: TCLP Metals					
Client ID:	LCSW		Batch ID: 15406		RunNo: 21324					
Prep Date:	9/19/2014		Analysis Date: 9/20/2014		SeqNo: 622315		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	5.0	0.5000	0	109	80	120			
Barium	ND	100	0.5000	0	98.8	80	120			
Cadmium	ND	1.0	0.5000	0	103	80	120			
Chromium	ND	5.0	0.5000	0	97.5	80	120			
Lead	ND	5.0	0.5000	0	96.3	80	120			
Selenium	ND	1.0	0.5000	0	111	80	120			
Silver	ND	5.0	0.1000	0	104	80	120			

### 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	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		



# Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1409871

RcptNo: 1

Received by/date:	<i>mg</i>	<i>09/17/14</i>
Logged By:	Michelle Garcia	9/17/2014 4:32:00 PM
Completed By:	Michelle Garcia	9/17/2014 5:57:06 PM
Reviewed By:	<i>[Signature]</i>	<i>09/18/14</i>

*Michelle Garcia*  
*Michelle Garcia*

## Chain of Custody

- Custody seals intact on sample bottles? Yes ☒ No ☐ Not Present ☐
- Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
- How was the sample delivered? Courier

## Log In

- Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
- Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
- Sample(s) in proper container(s)? Yes ☒ No ☐
- Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
- Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
- Was preservative added to bottles? Yes ☐ No ☒ NA ☐
- VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
- Were any sample containers received broken? Yes ☐ No ☒
- Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
- Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
- Is it clear what analyses were requested? Yes ☒ No ☐
- Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved bottles checked for pH: \_\_\_\_\_  
(<2 or >12 unless noted)  
Adjusted? \_\_\_\_\_  
Checked by: \_\_\_\_\_

## Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:	_____	Date:	_____
By Whom:	_____	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

17. Additional remarks:

## 18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			



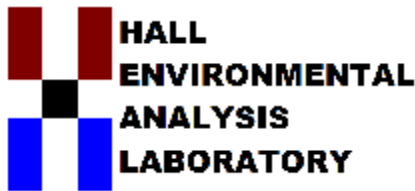
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**Appendix A-3**  
**Hall Environmental Analysis Laboratory, Inc. -**  
**September 24, 2014**  
**Analytical Report No. 1409872**

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Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

October 07, 2014

Beck Larsen

Western Refining Southwest, Gallup  
92 Giant Crossing Road  
Gallup, NM 87301  
TEL: (505) 722-0258  
FAX (505) 722-0210

RE: Excavation Underground Tank Area

OrderNo.: 1409872

Dear Beck Larsen:

Hall Environmental Analysis Laboratory received 4 sample(s) on 9/17/2014 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued September 24, 2014.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

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

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1409872**

Date Reported: **10/7/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Tank Area Location #1

**Project:** Excavation Underground Tank Area

**Collection Date:** 9/16/2014 11:40:00 AM

**Lab ID:** 1409872-001

**Matrix:** SOIL

**Received Date:** 9/17/2014 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	330	9.9		mg/Kg	1	9/19/2014 7:05:44 PM	15363
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	9/19/2014 7:05:44 PM	15363
Surr: DNOP	120	57.9-140		%REC	1	9/19/2014 7:05:44 PM	15363
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	9/22/2014 12:50:48 PM	15378
Surr: BFB	95.4	80-120		%REC	1	9/22/2014 12:50:48 PM	15378
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.050		mg/Kg	1	9/22/2014 12:50:48 PM	15378
Toluene	ND	0.050		mg/Kg	1	9/22/2014 12:50:48 PM	15378
Ethylbenzene	ND	0.050		mg/Kg	1	9/22/2014 12:50:48 PM	15378
Xylenes, Total	ND	0.10		mg/Kg	1	9/22/2014 12:50:48 PM	15378
Surr: 4-Bromofluorobenzene	104	80-120		%REC	1	9/22/2014 12:50:48 PM	15378
<b>MERCURY, TCLP</b>							Analyst: <b>JLF</b>
Mercury	ND	0.020		mg/L	1	9/23/2014 10:59:02 AM	15428
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	5.0		mg/L	1	9/20/2014 10:12:11 AM	15406
Barium	ND	100		mg/L	1	9/20/2014 10:12:11 AM	15406
Cadmium	ND	1.0		mg/L	1	9/20/2014 10:12:11 AM	15406
Chromium	ND	5.0		mg/L	1	9/20/2014 10:12:11 AM	15406
Lead	ND	5.0		mg/L	1	9/20/2014 10:12:11 AM	15406
Selenium	ND	1.0		mg/L	1	9/20/2014 10:12:11 AM	15406
Silver	ND	5.0		mg/L	1	9/20/2014 10:12:11 AM	15406
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	9/23/2014 1:55:09 PM	15413
3+4-Methylphenol	ND	200		mg/L	1	9/23/2014 1:55:09 PM	15413
Phenol	ND	200		mg/L	1	9/23/2014 1:55:09 PM	15413
2,4-Dinitrotoluene	ND	0.13		mg/L	1	9/23/2014 1:55:09 PM	15413
Hexachlorobenzene	ND	0.13		mg/L	1	9/23/2014 1:55:09 PM	15413
Hexachlorobutadiene	ND	0.50		mg/L	1	9/23/2014 1:55:09 PM	15413
Hexachloroethane	ND	3.0		mg/L	1	9/23/2014 1:55:09 PM	15413
Nitrobenzene	ND	2.0		mg/L	1	9/23/2014 1:55:09 PM	15413
Pentachlorophenol	ND	100		mg/L	1	9/23/2014 1:55:09 PM	15413
Pyridine	ND	5.0		mg/L	1	9/23/2014 1:55:09 PM	15413
2,4,5-Trichlorophenol	ND	400		mg/L	1	9/23/2014 1:55:09 PM	15413
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	9/23/2014 1:55:09 PM	15413
Cresols, Total	ND	200		mg/L	1	9/23/2014 1:55:09 PM	15413
Surr: 2-Fluorophenol	52.0	25-105		%REC	1	9/23/2014 1:55:09 PM	15413

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2.
RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1409872**

Date Reported: **10/7/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Tank Area Location #1

**Project:** Excavation Underground Tank Area

**Collection Date:** 9/16/2014 11:40:00 AM

**Lab ID:** 1409872-001

**Matrix:** SOIL

**Received Date:** 9/17/2014 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
Surr: Phenol-d5	56.6	22.3-70.3		%REC	1	9/23/2014 1:55:09 PM	15413
Surr: 2,4,6-Tribromophenol	44.5	30.4-134		%REC	1	9/23/2014 1:55:09 PM	15413
Surr: Nitrobenzene-d5	85.9	54.8-128		%REC	1	9/23/2014 1:55:09 PM	15413
Surr: 2-Fluorobiphenyl	79.9	53.3-122		%REC	1	9/23/2014 1:55:09 PM	15413
Surr: 4-Terphenyl-d14	81.2	51.8-133		%REC	1	9/23/2014 1:55:09 PM	15413
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>RAA</b>
Benzene	ND	0.50		ppm	10	9/21/2014 1:28:54 AM	15378
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	9/21/2014 1:28:54 AM	15378
2-Butanone	ND	200		ppm	10	9/21/2014 1:28:54 AM	15378
Carbon tetrachloride	ND	0.50		ppm	10	9/21/2014 1:28:54 AM	15378
Chlorobenzene	ND	100		ppm	10	9/21/2014 1:28:54 AM	15378
Chloroform	ND	6.0		ppm	10	9/21/2014 1:28:54 AM	15378
1,4-Dichlorobenzene	ND	7.5		ppm	10	9/21/2014 1:28:54 AM	15378
1,1-Dichloroethene	ND	0.70		ppm	10	9/21/2014 1:28:54 AM	15378
Tetrachloroethene (PCE)	ND	0.70		ppm	10	9/21/2014 1:28:54 AM	15378
Trichloroethene (TCE)	ND	0.50		ppm	10	9/21/2014 1:28:54 AM	15378
Vinyl chloride	ND	0.20		ppm	10	9/21/2014 1:28:54 AM	15378
mp-Xylenes	ND	0.50		mg/Kg	10	9/21/2014 1:28:54 AM	15378
o-Xylene	ND	0.50		mg/Kg	10	9/21/2014 1:28:54 AM	15378
Surr: 1,2-Dichloroethane-d4	85.5	70-130		%REC	10	9/21/2014 1:28:54 AM	15378
Surr: 4-Bromofluorobenzene	94.6	70-130		%REC	10	9/21/2014 1:28:54 AM	15378
Surr: Dibromofluoromethane	90.0	70-130		%REC	10	9/21/2014 1:28:54 AM	15378
Surr: Toluene-d8	89.8	70-130		%REC	10	9/21/2014 1:28:54 AM	15378
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>JME</b>
Petroleum Hydrocarbons, TR	320	20		mg/Kg	1	9/19/2014	15373

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1409872**

Date Reported: **10/7/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Tank Area Location #2

**Project:** Excavation Underground Tank Area

**Collection Date:** 9/16/2014 12:00:00 PM

**Lab ID:** 1409872-002

**Matrix:** SOIL

**Received Date:** 9/17/2014 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	39	10		mg/Kg	1	9/19/2014 7:36:01 PM	15363
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	9/19/2014 7:36:01 PM	15363
Surr: DNOP	112	57.9-140		%REC	1	9/19/2014 7:36:01 PM	15363
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	170	5.0		mg/Kg	1	9/22/2014 1:19:25 PM	15378
Surr: BFB	594	80-120	S	%REC	1	9/22/2014 1:19:25 PM	15378
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	0.19	0.050		mg/Kg	1	9/22/2014 1:19:25 PM	15378
Toluene	0.39	0.050		mg/Kg	1	9/22/2014 1:19:25 PM	15378
Ethylbenzene	0.58	0.050		mg/Kg	1	9/22/2014 1:19:25 PM	15378
Xylenes, Total	2.1	0.10		mg/Kg	1	9/22/2014 1:19:25 PM	15378
Surr: 4-Bromofluorobenzene	136	80-120	S	%REC	1	9/22/2014 1:19:25 PM	15378
<b>MERCURY, TCLP</b>							Analyst: <b>JLF</b>
Mercury	ND	0.020		mg/L	1	9/23/2014 11:00:50 AM	15428
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	5.0		mg/L	1	9/20/2014 10:17:11 AM	15406
Barium	ND	100		mg/L	1	9/20/2014 10:17:11 AM	15406
Cadmium	ND	1.0		mg/L	1	9/20/2014 10:17:11 AM	15406
Chromium	ND	5.0		mg/L	1	9/20/2014 10:17:11 AM	15406
Lead	ND	5.0		mg/L	1	9/20/2014 10:17:11 AM	15406
Selenium	ND	1.0		mg/L	1	9/20/2014 10:17:11 AM	15406
Silver	ND	5.0		mg/L	1	9/20/2014 10:17:11 AM	15406
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	9/23/2014 2:24:17 PM	15413
3+4-Methylphenol	ND	200		mg/L	1	9/23/2014 2:24:17 PM	15413
Phenol	ND	200		mg/L	1	9/23/2014 2:24:17 PM	15413
2,4-Dinitrotoluene	ND	0.13		mg/L	1	9/23/2014 2:24:17 PM	15413
Hexachlorobenzene	ND	0.13		mg/L	1	9/23/2014 2:24:17 PM	15413
Hexachlorobutadiene	ND	0.50		mg/L	1	9/23/2014 2:24:17 PM	15413
Hexachloroethane	ND	3.0		mg/L	1	9/23/2014 2:24:17 PM	15413
Nitrobenzene	ND	2.0		mg/L	1	9/23/2014 2:24:17 PM	15413
Pentachlorophenol	ND	100		mg/L	1	9/23/2014 2:24:17 PM	15413
Pyridine	ND	5.0		mg/L	1	9/23/2014 2:24:17 PM	15413
2,4,5-Trichlorophenol	ND	400		mg/L	1	9/23/2014 2:24:17 PM	15413
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	9/23/2014 2:24:17 PM	15413
Cresols, Total	ND	200		mg/L	1	9/23/2014 2:24:17 PM	15413
Surr: 2-Fluorophenol	53.7	25-105		%REC	1	9/23/2014 2:24:17 PM	15413

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2.
RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1409872**Date Reported: **10/7/2014****CLIENT:** Western Refining Southwest, Gallup**Client Sample ID:** Tank Area Location #2**Project:** Excavation Underground Tank Area**Collection Date:** 9/16/2014 12:00:00 PM**Lab ID:** 1409872-002**Matrix:** SOIL**Received Date:** 9/17/2014 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
Surr: Phenol-d5	60.7	22.3-70.3		%REC	1	9/23/2014 2:24:17 PM	15413
Surr: 2,4,6-Tribromophenol	40.7	30.4-134		%REC	1	9/23/2014 2:24:17 PM	15413
Surr: Nitrobenzene-d5	95.6	54.8-128		%REC	1	9/23/2014 2:24:17 PM	15413
Surr: 2-Fluorobiphenyl	87.3	53.3-122		%REC	1	9/23/2014 2:24:17 PM	15413
Surr: 4-Terphenyl-d14	85.8	51.8-133		%REC	1	9/23/2014 2:24:17 PM	15413
<b>VOLATILES BY 8260B/1311</b>							Analyst: <b>DJF</b>
Benzene	ND	0.30		mg/L	1	9/22/2014 7:26:48 PM	15387
2-Butanone	ND	200		mg/L	1	9/22/2014 7:26:48 PM	15387
Carbon Tetrachloride	ND	0.50		mg/L	1	9/22/2014 7:26:48 PM	15387
Chlorobenzene	ND	0.30		mg/L	1	9/22/2014 7:26:48 PM	15387
Chloroform	ND	6.0		mg/L	1	9/22/2014 7:26:48 PM	15387
1,4-Dichlorobenzene	ND	7.5		mg/L	1	9/22/2014 7:26:48 PM	15387
1,2-Dichloroethane (EDC)	ND	0.50		mg/L	1	9/22/2014 7:26:48 PM	15387
1,1-Dichloroethene	ND	0.30		mg/L	1	9/22/2014 7:26:48 PM	15387
Hexachlorobutadiene	ND	0.50		mg/L	1	9/22/2014 7:26:48 PM	15387
Tetrachloroethene (PCE)	ND	0.70		mg/L	1	9/22/2014 7:26:48 PM	15387
Trichloroethene (TCE)	ND	0.30		mg/L	1	9/22/2014 7:26:48 PM	15387
Vinyl chloride	ND	0.20		mg/L	1	9/22/2014 7:26:48 PM	15387
Surr: 1,2-Dichloroethane-d4	85.2	69.9-130		%REC	1	9/22/2014 7:26:48 PM	15387
Surr: 4-Bromofluorobenzene	88.0	71.2-123		%REC	1	9/22/2014 7:26:48 PM	15387
Surr: Dibromofluoromethane	90.3	73.9-134		%REC	1	9/22/2014 7:26:48 PM	15387
Surr: Toluene-d8	89.5	81.9-122		%REC	1	9/22/2014 7:26:48 PM	15387
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>JME</b>
Petroleum Hydrocarbons, TR	24	20		mg/Kg	1	9/19/2014	15373

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 4 of 18
	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	
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1409872**

Date Reported: **10/7/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Tank Area Location #3

**Project:** Excavation Underground Tank Area

**Collection Date:** 9/16/2014 12:15:00 PM

**Lab ID:** 1409872-003

**Matrix:** SOIL

**Received Date:** 9/17/2014 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	160	10		mg/Kg	1	9/19/2014 8:06:16 PM	15363
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	9/19/2014 8:06:16 PM	15363
Surr: DNOP	112	57.9-140		%REC	1	9/19/2014 8:06:16 PM	15363
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	92	5.0		mg/Kg	1	9/22/2014 1:48:05 PM	15378
Surr: BFB	392	80-120	S	%REC	1	9/22/2014 1:48:05 PM	15378
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	0.13	0.050		mg/Kg	1	9/22/2014 1:48:05 PM	15378
Toluene	0.12	0.050		mg/Kg	1	9/22/2014 1:48:05 PM	15378
Ethylbenzene	0.19	0.050		mg/Kg	1	9/22/2014 1:48:05 PM	15378
Xylenes, Total	0.77	0.10		mg/Kg	1	9/22/2014 1:48:05 PM	15378
Surr: 4-Bromofluorobenzene	128	80-120	S	%REC	1	9/22/2014 1:48:05 PM	15378
<b>MERCURY, TCLP</b>							Analyst: <b>JLF</b>
Mercury	ND	0.020		mg/L	1	9/23/2014 11:02:38 AM	15428
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	5.0		mg/L	1	9/20/2014 10:18:27 AM	15406
Barium	ND	100		mg/L	1	9/20/2014 10:18:27 AM	15406
Cadmium	ND	1.0		mg/L	1	9/20/2014 10:18:27 AM	15406
Chromium	ND	5.0		mg/L	1	9/20/2014 10:18:27 AM	15406
Lead	ND	5.0		mg/L	1	9/20/2014 10:18:27 AM	15406
Selenium	ND	1.0		mg/L	1	9/20/2014 10:18:27 AM	15406
Silver	ND	5.0		mg/L	1	9/20/2014 10:18:27 AM	15406
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	9/23/2014 2:53:26 PM	15413
3+4-Methylphenol	ND	200		mg/L	1	9/23/2014 2:53:26 PM	15413
Phenol	ND	200		mg/L	1	9/23/2014 2:53:26 PM	15413
2,4-Dinitrotoluene	ND	0.13		mg/L	1	9/23/2014 2:53:26 PM	15413
Hexachlorobenzene	ND	0.13		mg/L	1	9/23/2014 2:53:26 PM	15413
Hexachlorobutadiene	ND	0.50		mg/L	1	9/23/2014 2:53:26 PM	15413
Hexachloroethane	ND	3.0		mg/L	1	9/23/2014 2:53:26 PM	15413
Nitrobenzene	ND	2.0		mg/L	1	9/23/2014 2:53:26 PM	15413
Pentachlorophenol	ND	100		mg/L	1	9/23/2014 2:53:26 PM	15413
Pyridine	ND	5.0		mg/L	1	9/23/2014 2:53:26 PM	15413
2,4,5-Trichlorophenol	ND	400		mg/L	1	9/23/2014 2:53:26 PM	15413
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	9/23/2014 2:53:26 PM	15413
Cresols, Total	ND	200		mg/L	1	9/23/2014 2:53:26 PM	15413
Surr: 2-Fluorophenol	76.8	25-105		%REC	1	9/23/2014 2:53:26 PM	15413

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2.
RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1409872**Date Reported: **10/7/2014****CLIENT:** Western Refining Southwest, Gallup**Client Sample ID:** Tank Area Location #3**Project:** Excavation Underground Tank Area**Collection Date:** 9/16/2014 12:15:00 PM**Lab ID:** 1409872-003**Matrix:** SOIL**Received Date:** 9/17/2014 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
Surr: Phenol-d5	65.0	22.3-70.3		%REC	1	9/23/2014 2:53:26 PM	15413
Surr: 2,4,6-Tribromophenol	81.6	30.4-134		%REC	1	9/23/2014 2:53:26 PM	15413
Surr: Nitrobenzene-d5	95.4	54.8-128		%REC	1	9/23/2014 2:53:26 PM	15413
Surr: 2-Fluorobiphenyl	91.5	53.3-122		%REC	1	9/23/2014 2:53:26 PM	15413
Surr: 4-Terphenyl-d14	87.7	51.8-133		%REC	1	9/23/2014 2:53:26 PM	15413
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Benzene	ND	0.50		ppm	10	9/22/2014 11:00:29 AM	15378
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	9/22/2014 11:00:29 AM	15378
2-Butanone	ND	200		ppm	10	9/22/2014 11:00:29 AM	15378
Carbon tetrachloride	ND	0.50		ppm	10	9/22/2014 11:00:29 AM	15378
Chlorobenzene	ND	100		ppm	10	9/22/2014 11:00:29 AM	15378
Chloroform	ND	6.0		ppm	10	9/22/2014 11:00:29 AM	15378
1,4-Dichlorobenzene	ND	7.5		ppm	10	9/22/2014 11:00:29 AM	15378
1,1-Dichloroethene	ND	0.70		ppm	10	9/22/2014 11:00:29 AM	15378
Tetrachloroethene (PCE)	ND	0.70		ppm	10	9/22/2014 11:00:29 AM	15378
Trichloroethene (TCE)	ND	0.50		ppm	10	9/22/2014 11:00:29 AM	15378
Vinyl chloride	ND	0.20		ppm	10	9/22/2014 11:00:29 AM	15378
Surr: 1,2-Dichloroethane-d4	87.8	70-130		%REC	10	9/22/2014 11:00:29 AM	15378
Surr: 4-Bromofluorobenzene	87.5	70-130		%REC	10	9/22/2014 11:00:29 AM	15378
Surr: Dibromofluoromethane	89.2	70-130		%REC	10	9/22/2014 11:00:29 AM	15378
Surr: Toluene-d8	89.3	70-130		%REC	10	9/22/2014 11:00:29 AM	15378
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>JME</b>
Petroleum Hydrocarbons, TR	96	20		mg/Kg	1	9/19/2014	15373

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 6 of 18
	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	
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1409872**

Date Reported: **10/7/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Tank Area Location #4

**Project:** Excavation Underground Tank Area

**Collection Date:** 9/16/2014 12:30:00 PM

**Lab ID:** 1409872-004

**Matrix:** SOIL

**Received Date:** 9/17/2014 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	310	9.8		mg/Kg	1	9/19/2014 8:36:16 PM	15363
Motor Oil Range Organics (MRO)	50	49		mg/Kg	1	9/19/2014 8:36:16 PM	15363
Surr: DNOP	113	57.9-140		%REC	1	9/19/2014 8:36:16 PM	15363
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	190	5.0		mg/Kg	1	9/22/2014 2:16:48 PM	15378
Surr: BFB	494	80-120	S	%REC	1	9/22/2014 2:16:48 PM	15378
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	0.25	0.050		mg/Kg	1	9/22/2014 2:16:48 PM	15378
Toluene	0.19	0.050		mg/Kg	1	9/22/2014 2:16:48 PM	15378
Ethylbenzene	0.23	0.050		mg/Kg	1	9/22/2014 2:16:48 PM	15378
Xylenes, Total	1.7	0.10		mg/Kg	1	9/22/2014 2:16:48 PM	15378
Surr: 4-Bromofluorobenzene	126	80-120	S	%REC	1	9/22/2014 2:16:48 PM	15378
<b>MERCURY, TCLP</b>							Analyst: <b>JLF</b>
Mercury	ND	0.020		mg/L	1	9/23/2014 11:04:27 AM	15428
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	5.0		mg/L	1	9/20/2014 10:19:41 AM	15406
Barium	ND	100		mg/L	1	9/20/2014 10:19:41 AM	15406
Cadmium	ND	1.0		mg/L	1	9/20/2014 10:19:41 AM	15406
Chromium	ND	5.0		mg/L	1	9/20/2014 10:19:41 AM	15406
Lead	ND	5.0		mg/L	1	9/20/2014 10:19:41 AM	15406
Selenium	ND	1.0		mg/L	1	9/20/2014 10:19:41 AM	15406
Silver	ND	5.0		mg/L	1	9/20/2014 10:19:41 AM	15406
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	9/23/2014 3:22:34 PM	15413
3+4-Methylphenol	ND	200		mg/L	1	9/23/2014 3:22:34 PM	15413
Phenol	ND	200		mg/L	1	9/23/2014 3:22:34 PM	15413
2,4-Dinitrotoluene	ND	0.13		mg/L	1	9/23/2014 3:22:34 PM	15413
Hexachlorobenzene	ND	0.13		mg/L	1	9/23/2014 3:22:34 PM	15413
Hexachlorobutadiene	ND	0.50		mg/L	1	9/23/2014 3:22:34 PM	15413
Hexachloroethane	ND	3.0		mg/L	1	9/23/2014 3:22:34 PM	15413
Nitrobenzene	ND	2.0		mg/L	1	9/23/2014 3:22:34 PM	15413
Pentachlorophenol	ND	100		mg/L	1	9/23/2014 3:22:34 PM	15413
Pyridine	ND	5.0		mg/L	1	9/23/2014 3:22:34 PM	15413
2,4,5-Trichlorophenol	ND	400		mg/L	1	9/23/2014 3:22:34 PM	15413
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	9/23/2014 3:22:34 PM	15413
Cresols, Total	ND	200		mg/L	1	9/23/2014 3:22:34 PM	15413
Surr: 2-Fluorophenol	68.0	25-105		%REC	1	9/23/2014 3:22:34 PM	15413

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2.
RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1409872**Date Reported: **10/7/2014****CLIENT:** Western Refining Southwest, Gallup**Client Sample ID:** Tank Area Location #4**Project:** Excavation Underground Tank Area**Collection Date:** 9/16/2014 12:30:00 PM**Lab ID:** 1409872-004**Matrix:** SOIL**Received Date:** 9/17/2014 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
Surr: Phenol-d5	72.0	22.3-70.3	S	%REC	1	9/23/2014 3:22:34 PM	15413
Surr: 2,4,6-Tribromophenol	53.4	30.4-134		%REC	1	9/23/2014 3:22:34 PM	15413
Surr: Nitrobenzene-d5	102	54.8-128		%REC	1	9/23/2014 3:22:34 PM	15413
Surr: 2-Fluorobiphenyl	92.9	53.3-122		%REC	1	9/23/2014 3:22:34 PM	15413
Surr: 4-Terphenyl-d14	99.8	51.8-133		%REC	1	9/23/2014 3:22:34 PM	15413
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Benzene	ND	0.50		ppm	10	9/22/2014 11:28:31 AM	15378
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	9/22/2014 11:28:31 AM	15378
2-Butanone	ND	200		ppm	10	9/22/2014 11:28:31 AM	15378
Carbon tetrachloride	ND	0.50		ppm	10	9/22/2014 11:28:31 AM	15378
Chlorobenzene	ND	100		ppm	10	9/22/2014 11:28:31 AM	15378
Chloroform	ND	6.0		ppm	10	9/22/2014 11:28:31 AM	15378
1,4-Dichlorobenzene	ND	7.5		ppm	10	9/22/2014 11:28:31 AM	15378
1,1-Dichloroethene	ND	0.70		ppm	10	9/22/2014 11:28:31 AM	15378
Tetrachloroethene (PCE)	ND	0.70		ppm	10	9/22/2014 11:28:31 AM	15378
Trichloroethene (TCE)	ND	0.50		ppm	10	9/22/2014 11:28:31 AM	15378
Vinyl chloride	ND	0.20		ppm	10	9/22/2014 11:28:31 AM	15378
Surr: 1,2-Dichloroethane-d4	89.1	70-130		%REC	10	9/22/2014 11:28:31 AM	15378
Surr: 4-Bromofluorobenzene	91.6	70-130		%REC	10	9/22/2014 11:28:31 AM	15378
Surr: Dibromofluoromethane	93.7	70-130		%REC	10	9/22/2014 11:28:31 AM	15378
Surr: Toluene-d8	91.8	70-130		%REC	10	9/22/2014 11:28:31 AM	15378
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>JME</b>
Petroleum Hydrocarbons, TR	400	20		mg/Kg	1	9/19/2014	15373

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		





12065 Lebanon Rd.  
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

# REPORT OF ANALYSIS

September 24, 2014

Hall Environmental Analysis Laborat  
4901 Hawkins NE  
Albuquerque, NM 87109

Date Received : September 19, 2014  
Description :  
Sample ID : 1409872-001B BOX AREA LOCATION SW9045B  
Collected By :  
Collection Date : 09/16/14 11:40

ESC Sample # : L722648-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	Non-Corrosive			9045D	09/24/14	1
Ignitability	See Footnote		Deg. F	D93/1010A	09/24/14	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/kg	9012B	09/24/14	1
Reactive Sulf. (SW846 7.3.4.1)	BDL	25.	mg/kg	9034/9030B	09/23/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 09/24/14 16:37 Printed: 09/24/14 16:38  
L722648-01 (IGNITABILITY) - Did Not Ignite @ 170 F



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REPORT OF ANALYSIS

September 24, 2014

Hall Environmental Analysis Laborat  
4901 Hawkins NE  
Albuquerque, NM 87109

Date Received : September 19, 2014

Description :

Sample ID : 1409872-002B BOX AREA LOCATION SW9045B

Collected By :

Collection Date : 09/16/14 12:00

ESC Sample # : L722648-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	Non-Corrosive			9045D	09/24/14	1
Ignitability	See Footnote		Deg. F	D93/1010A	09/24/14	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/kg	9012B	09/24/14	1
Reactive Sulf.(SW846 7.3.4.1)	BDL	25.	mg/kg	9034/9030B	09/23/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 09/24/14 16:37 Printed: 09/24/14 16:38

L722648-02 (IGNITABILITY) - Did Not Ignite @ 170 F



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# REPORT OF ANALYSIS

September 24, 2014

Hall Environmental Analysis Laborat  
4901 Hawkins NE  
Albuquerque, NM 87109

Date Received : September 19, 2014  
Description :  
Sample ID : 1409872-003B BOX AREA LOCATION SW9045B  
Collected By :  
Collection Date : 09/16/14 12:15

ESC Sample # : L722648-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	Non-Corrosive			9045D	09/24/14	1
Ignitability	See Footnote		Deg. F	D93/1010A	09/23/14	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/kg	9012B	09/24/14	1
Reactive Sulf. (SW846 7.3.4.1)	BDL	25.	mg/kg	9034/9030B	09/23/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 09/24/14 16:37 Printed: 09/24/14 16:38  
L722648-03 (IGNITABILITY) - Did Not Ignite @ 170 F



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Est. 1970

REPORT OF ANALYSIS

September 24, 2014

Hall Environmental Analysis Laborat  
4901 Hawkins NE  
Albuquerque, NM 87109

Date Received : September 19, 2014  
Description :  
Sample ID : 1409872-004B BOX AREA LOCATION SW9045B  
Collected By :  
Collection Date : 09/16/14 12:30

ESC Sample # : L722648-04

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	Non-Corrosive			9045D	09/24/14	1
Ignitability	See Footnote		Deg. F	D93/1010A	09/23/14	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/kg	9012B	09/24/14	1
Reactive Sulf. (SW846 7.3.4.1)	BDL	25.	mg/kg	9034/9030B	09/23/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 09/24/14 16:37 Printed: 09/24/14 16:38  
L722648-04 (IGNITABILITY) - Did Not Ignite @ 170 F



YOUR LAB OF CHOICE

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report  
Level II

L722648

12065 Lebanon Rd.  
Mt. Juliet, TN 37122  
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1-800-767-5859  
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

September 24, 2014

Analyte	Result	Laboratory Blank Units % Rec	Limit	Batch	Date Analyzed
Reactive Sulf. (SW846 7.3.4.1)	< 25	mg/kg		WG744384	09/23/14 16:30
Reactive CN (SW846 7.3.3.2)	< .125	mg/kg		WG744385	09/24/14 11:24

Analyte	Units	Result	Duplicate Duplicate	RPD	Limit	Ref Samp	Batch
Ignitability	Deg. F	0.00	0.00	0.00	10	L722648-04	WG744379
Corrosivity		0.0	0.0	0.0	10	L722646-01	WG744447
Corrosivity		0.0	0.0	0.0	10	L723025-01	WG744447
Reactive Sulf. (SW846 7.3.4.1)	mg/kg	0.0	0.0	0.0	20	L722646-01	WG744384
Ignitability	Deg. F	0.00	0.00	0.00	10	L722242-01	WG744667
Reactive CN (SW846 7.3.3.2)	mg/kg	0.0	0.0	0.0	20	L722646-01	WG744385

Analyte	Units	Laboratory Control Sample Known Val Result	% Rec	Limit	Batch
Ignitability	Deg. F	82 83.0	101.	93-107	WG744379
Corrosivity		6.33 6.30	99.5	98.3-101.7	WG744447
Reactive Sulf. (SW846 7.3.4.1)	mg/kg	100 110.	110.	70-130	WG744384
Ignitability	Deg. F	82 82.0	100.	93-107	WG744667
Reactive CN (SW846 7.3.3.2)	mg/kg	.1 0.106	106.	50-150	WG744385

Analyte	Units	Laboratory Control Sample Duplicate Result Ref %Rec	Limit	RPD	Limit	Batch
Ignitability	Deg. F	82.0 83.0 100.	93-107	1.21	20	WG744379
Corrosivity		6.30 6.30 100.	98.3-101.7	0.0	10	WG744447
Reactive Sulf. (SW846 7.3.4.1)	mg/kg	100. 110. 100.	70-130	9.52	20	WG744384
Ignitability	Deg. F	82.0 82.0 100.	93-107	0.00	20	WG744667
Reactive CN (SW846 7.3.3.2)	mg/kg	0.0982 0.106 98.0	50-150	7.64	20	WG744385

\* Performance of this Analyte is outside of established criteria.  
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409872

07-Oct-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Tank Area

Sample ID	MB-15373		SampType: MBLK		TestCode: EPA Method 418.1: TPH					
Client ID:	PBS		Batch ID: 15373		RunNo: 21288					
Prep Date:	9/18/2014		Analysis Date: 9/19/2014		SeqNo: 621284		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	20								

Sample ID	LCS-15373		SampType: LCS		TestCode: EPA Method 418.1: TPH					
Client ID:	LCSS		Batch ID: 15373		RunNo: 21288					
Prep Date:	9/18/2014		Analysis Date: 9/19/2014		SeqNo: 621285		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	96	20	100.0	0	95.8	80	120			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409872

07-Oct-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Tank Area

Sample ID	MB-15363		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 15363		RunNo: 21269					
Prep Date:	9/18/2014		Analysis Date: 9/18/2014		SeqNo: 620601		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		100	57.9	140			

Sample ID	LCS-15363		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 15363		RunNo: 21269					
Prep Date:	9/18/2014		Analysis Date: 9/18/2014		SeqNo: 620602		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	62	10	50.00	0	125	68.6	130			
Surr: DNOP	5.2		5.000		104	57.9	140			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409872

07-Oct-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Tank Area

Sample ID	MB-15378		SampType:	MBLK		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	PBS		Batch ID:	15378		RunNo:	21342				
Prep Date:	9/18/2014		Analysis Date:	9/22/2014		SeqNo:	623292		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	ND	5.0									
Surr: BFB	940		1000		94.2	80	120				

Sample ID	LCS-15378		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 15378		RunNo: 21342					
Prep Date:	9/18/2014		Analysis Date: 9/22/2014		SeqNo: 623293		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	65.8	139			
Surr: BFB	1000		1000		101	80	120			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409872

07-Oct-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Tank Area

Sample ID	MB-15378		SampType: MBLK		TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBS		Batch ID: 15378		RunNo: 21342					
Prep Date:	9/18/2014		Analysis Date: 9/22/2014		SeqNo: 623326		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

Sample ID	LCS-15378		SampType: LCS		TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSS		Batch ID: 15378		RunNo: 21342					
Prep Date:	9/18/2014		Analysis Date: 9/22/2014		SeqNo: 623327		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.050	1.000	0	90.6	80	120			
Toluene	0.91	0.050	1.000	0	91.1	80	120			
Ethylbenzene	0.92	0.050	1.000	0	92.4	80	120			
Xylenes, Total	2.8	0.10	3.000	0	92.6	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		107	80	120			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409872

07-Oct-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Tank Area

Sample ID	mb-15378		SampType: MBLK		TestCode: EPA Method 8260B: TCLP Compounds					
Client ID:	PBS		Batch ID: 15378		RunNo: 21355					
Prep Date:	9/18/2014		Analysis Date: 9/20/2014		SeqNo: 623925		Units: ppm			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
2-Butanone	ND	20								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	10								
Chloroform	ND	0.60								
1,4-Dichlorobenzene	ND	0.75								
1,1-Dichloroethene	ND	0.070								
Tetrachloroethene (PCE)	ND	0.070								
Trichloroethene (TCE)	ND	0.050								
Vinyl chloride	ND	0.020								
Surr: 1,2-Dichloroethane-d4	0.41		0.5000		82.2	70	130			
Surr: 4-Bromofluorobenzene	0.37		0.5000		74.2	70	130			
Surr: Dibromofluoromethane	0.42		0.5000		84.4	70	130			
Surr: Toluene-d8	0.47		0.5000		94.6	70	130			

Sample ID	lcs-15378		SampType: LCS		TestCode: EPA Method 8260B: TCLP Compounds					
Client ID:	LCSS		Batch ID: 15378		RunNo: 21355					
Prep Date:	9/18/2014		Analysis Date: 9/20/2014		SeqNo: 623926		Units: ppm			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.050	1.000	0	96.0	70	130			
Chlorobenzene	1.0	0.50	1.000	0	101	70	130			
1,1-Dichloroethene	1.1	0.070	1.000	0	105	60.5	160			
Trichloroethene (TCE)	0.92	0.050	1.000	0	91.5	58.8	139			
Surr: 1,2-Dichloroethane-d4	0.41		0.5000		82.0	70	130			
Surr: 4-Bromofluorobenzene	0.42		0.5000		84.7	70	130			
Surr: Dibromofluoromethane	0.44		0.5000		88.1	70	130			
Surr: Toluene-d8	0.44		0.5000		87.5	70	130			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409872

07-Oct-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Tank Area

Sample ID	<b>mb-15387</b>		SampType:	<b>MBLK</b>		TestCode:	<b>Volatiles by 8260B/1311</b>			
Client ID:	<b>PBS</b>		Batch ID:	<b>15387</b>		RunNo:	<b>21356</b>			
Prep Date:	<b>9/18/2014</b>		Analysis Date:	<b>9/22/2014</b>		SeqNo:	<b>623771</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.30								
2-Butanone	ND	200								
Carbon Tetrachloride	ND	0.50								
Chlorobenzene	ND	0.30								
Chloroform	ND	6.0								
1,4-Dichlorobenzene	ND	7.5								
1,2-Dichloroethane (EDC)	ND	0.50								
1,1-Dichloroethene	ND	0.30								
Hexachlorobutadiene	ND	0.50								
Tetrachloroethene (PCE)	ND	0.70								
Trichloroethene (TCE)	ND	0.30								
Vinyl chloride	ND	0.20								
Surr: 1,2-Dichloroethane-d4	0.18		0.2000		88.7	69.9	130			
Surr: 4-Bromofluorobenzene	0.17		0.2000		85.8	71.2	123			
Surr: Dibromofluoromethane	0.19		0.2000		93.9	73.9	134			
Surr: Toluene-d8	0.18		0.2000		91.0	81.9	122			

Sample ID	<b>lcs-15387</b>		SampType:	<b>LCS</b>		TestCode:	<b>Volatiles by 8260B/1311</b>			
Client ID:	<b>LCSS</b>		Batch ID:	<b>15387</b>		RunNo:	<b>21356</b>			
Prep Date:	<b>9/18/2014</b>		Analysis Date:	<b>9/22/2014</b>		SeqNo:	<b>623772</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.40	0.30	0.4000	0	99.4	51.1	171			
Chlorobenzene	0.42	0.30	0.4000	0	104	36.1	191			
1,1-Dichloroethene	0.44	0.30	0.4000	0	110	49.1	162			
Trichloroethene (TCE)	0.36	0.30	0.4000	0	90.4	41.2	166			
Surr: 1,2-Dichloroethane-d4	0.17		0.2000		86.7	69.9	130			
Surr: 4-Bromofluorobenzene	0.19		0.2000		92.7	71.2	123			
Surr: Dibromofluoromethane	0.17		0.2000		87.0	73.9	134			
Surr: Toluene-d8	0.18		0.2000		90.7	81.9	122			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409872

07-Oct-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Tank Area

Sample ID	<b>mb-15413</b>		SampType:	<b>MBLK</b>		TestCode:	<b>EPA Method 8270C TCLP</b>			
Client ID:	<b>PBS</b>		Batch ID:	<b>15413</b>		RunNo:	<b>21387</b>			
Prep Date:	<b>9/22/2014</b>		Analysis Date:	<b>9/23/2014</b>		SeqNo:	<b>624719</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	ND	200								
3+4-Methylphenol	ND	200								
Phenol	ND	200								
2,4-Dinitrotoluene	ND	0.13								
Hexachlorobenzene	ND	0.13								
Hexachlorobutadiene	ND	0.50								
Hexachloroethane	ND	3.0								
Nitrobenzene	ND	2.0								
Pentachlorophenol	ND	100								
Pyridine	ND	5.0								
2,4,5-Trichlorophenol	ND	400								
2,4,6-Trichlorophenol	ND	2.0								
Cresols, Total	ND	200								
Surr: 2-Fluorophenol	0.16		0.2000		78.8	25	105			
Surr: Phenol-d5	0.14		0.2000		68.7	22.3	70.3			
Surr: 2,4,6-Tribromophenol	0.16		0.2000		79.7	30.4	134			
Surr: Nitrobenzene-d5	0.092		0.1000		91.6	54.8	128			
Surr: 2-Fluorobiphenyl	0.086		0.1000		85.6	53.3	122			
Surr: 4-Terphenyl-d14	0.090		0.1000		90.1	51.8	133			

Sample ID	<b>ics-15413</b>		SampType:	<b>LCS</b>		TestCode:	<b>EPA Method 8270C TCLP</b>			
Client ID:	<b>LCSS</b>		Batch ID:	<b>15413</b>		RunNo:	<b>21387</b>			
Prep Date:	<b>9/22/2014</b>		Analysis Date:	<b>9/23/2014</b>		SeqNo:	<b>624720</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	0.076	0.010	0.1000	0	75.9	52.2	95.7			
3+4-Methylphenol	0.17	0.010	0.2000	0	85.5	52.4	142			
2,4-Dinitrotoluene	0.067	0.010	0.1000	0	67.1	43.4	110			
Hexachlorobenzene	0.078	0.010	0.1000	0	78.1	43.6	88.4			
Hexachlorobutadiene	0.064	0.010	0.1000	0	63.6	38.6	88.4			
Hexachloroethane	0.074	0.010	0.1000	0	73.7	45.7	83.6			
Nitrobenzene	0.077	0.010	0.1000	0	77.1	51.9	112			
Pentachlorophenol	0.033	0.010	0.1000	0	33.1	15.2	81.5			
Pyridine	0.062	0.010	0.1000	0	61.9	11.2	95.1			
2,4,5-Trichlorophenol	0.067	0.010	0.1000	0	66.8	46.9	110			
2,4,6-Trichlorophenol	0.064	0.010	0.1000	0	64.3	36.1	111			
Cresols, Total	0.25	0.010	0.3000	0	82.3	30	136			
Surr: 2-Fluorophenol	0.14		0.2000		71.6	25	105			
Surr: Phenol-d5	0.14		0.2000		70.7	22.3	70.3			S

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409872

07-Oct-14

**Client:** Western Refining Southwest, Gallup**Project:** Excavation Underground Tank Area

Sample ID	lcs-15413		SampType: LCS		TestCode: EPA Method 8270C TCLP					
Client ID:	LCSS		Batch ID: 15413		RunNo: 21387					
Prep Date:	9/22/2014		Analysis Date: 9/23/2014		SeqNo: 624720		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	0.11		0.2000		56.0	30.4	134			
Surr: Nitrobenzene-d5	0.077		0.1000		76.6	54.8	128			
Surr: 2-Fluorobiphenyl	0.074		0.1000		74.0	53.3	122			
Surr: 4-Terphenyl-d14	0.076		0.1000		75.5	51.8	133			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409872

07-Oct-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Tank Area

Sample ID	MB-15428		SampType: MBLK		TestCode: MERCURY, TCLP					
Client ID:	PBW		Batch ID: 15428		RunNo: 21367					
Prep Date:	9/22/2014		Analysis Date: 9/23/2014		SeqNo: 623963		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020								

Sample ID	LCS-15428		SampType: LCS		TestCode: MERCURY, TCLP					
Client ID:	LCSW		Batch ID: 15428		RunNo: 21367					
Prep Date:	9/22/2014		Analysis Date: 9/23/2014		SeqNo: 623964		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020	0.005000	0	98.4	80	120			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409872

07-Oct-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Tank Area

Sample ID	MB-15406	SampType: MBLK			TestCode: EPA Method 6010B: TCLP Metals					
Client ID:	PBW	Batch ID: 15406			RunNo: 21324					
Prep Date:	9/19/2014	Analysis Date: 9/20/2014			SeqNo: 622314		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	5.0								
Barium	ND	100								
Cadmium	ND	1.0								
Chromium	ND	5.0								
Lead	ND	5.0								
Selenium	ND	1.0								
Silver	ND	5.0								

Sample ID	LCS-15406			SampType:	LCS		TestCode:	EPA Method 6010B: TCLP Metals				
Client ID:	LCSW			Batch ID:	15406		RunNo:	21324				
Prep Date:	9/19/2014			Analysis Date:	9/20/2014		SeqNo:	622315			Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Arsenic	ND	5.0	0.5000	0	109	80	120					
Barium	ND	100	0.5000	0	98.8	80	120					
Cadmium	ND	1.0	0.5000	0	103	80	120					
Chromium	ND	5.0	0.5000	0	97.5	80	120					
Lead	ND	5.0	0.5000	0	96.3	80	120					
Selenium	ND	1.0	0.5000	0	111	80	120					
Silver	ND	5.0	0.1000	0	104	80	120					

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1409872

RcptNo: 1

Received by/date:

Logged By:

Michelle Garcia

9/17/2014 4:32:00 PM

Completed By:

Michelle Garcia

9/17/2014 6:07:52 PM

Reviewed By:

## Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☒

No ☐

Not Present ☐

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Courier

## Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$

Yes ☒

No ☐

NA ☐

6. Sample(s) in proper container(s)?

Yes ☒

No ☐

7. Sufficient sample volume for indicated test(s)?

Yes ☒

No ☐

8. Are samples (except VOA and ONG) properly preserved?

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☐

No ☐

No VOA Vials ☒

11. Were any sample containers received broken?

Yes ☐

No ☒

12. Does paperwork match bottle labels?

(Note discrepancies on chain of custody)

Yes ☒

No ☐

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

(If no, notify customer for authorization.)

Yes ☒

No ☐

# of preserved  
bottles checked  
for pH:

(<2 or >12 unless noted)

Adjusted? \_\_\_\_\_

Checked by: \_\_\_\_\_

## Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐

No ☐

NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

## 18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

## Chain-of-Custody Record

Client: Western - Refining

Mailing Address:

92 GIANT CROSSING ROAD

Callup NM 87301

Phone #: 505 722 3833

email or Fax#: 505 863 0930

QA/QC Package:

☐ Standard☐ Other☐ EDD (Type) \_\_\_\_\_☐ Level 4 (Full Validation)

Project Manager:

Beck Larsen

Sampler:

A. Dorsey / J. TSO / K. Sanchez

On Ice:

☒ Yes ☐ No

Sample Temperature: 1.0

Date Time Matrix Sample Request ID

9/16/2014 11:40 Soil Tank Area Location # 1

9/16/2014 12:00 Soil Tank Area Location # 2

9/16/2014 12:15 Soil Tank Area Location # 3

9/16/2014 12:30 Soil Tank Area Location # 4

Container Type and #

Preservative Type

HEAL No.

1469872

-001

-002

-003

-004

BTEX (8021)B

BTEX + MTBE + TPH (Gas only)

TPH 8015B (GRO/DRO)

TPH (Method 418.1)

EDB (Method 504.1)

PAH (8310 or 8270SIMS)

RCRA 8 Metals

Anions (F, Cl, NO<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub>)

8081 Pesticides / 8082 PCB's

8260B (VOA) TCLP

8270 (Semi-VOA) TCLP

RCI

TCLP Metals

Air Bubbles (Y or N)

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**Appendix A-4**  
**Hall Environmental Analysis Laboratory, Inc. -**  
**September 24, 2014**  
**Analytical Report No. 1409873**

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Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

October 07, 2014

Beck Larsen

Western Refining Southwest, Gallup  
92 Giant Crossing Road  
Gallup, NM 87301  
TEL: (505) 722-0258  
FAX (505) 722-0210

RE: Excavation Underground Box Area

OrderNo.: 1409873

Dear Beck Larsen:

Hall Environmental Analysis Laboratory received 4 sample(s) on 9/17/2014 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued September 24, 2014.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

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

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1409873**

Date Reported: **10/7/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Box Area Location #1

**Project:** Excavation Underground Box Area

**Collection Date:** 9/16/2014 12:50:00 PM

**Lab ID:** 1409873-001

**Matrix:** SOIL

**Received Date:** 9/17/2014 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	90	9.9		mg/Kg	1	9/19/2014 4:34:43 PM	15363
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	9/19/2014 4:34:43 PM	15363
Surr: DNOP	105	57.9-140		%REC	1	9/19/2014 4:34:43 PM	15363
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	110	5.0		mg/Kg	1	9/22/2014 2:45:24 PM	15378
Surr: BFB	386	80-120	S	%REC	1	9/22/2014 2:45:24 PM	15378
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	0.21	0.050		mg/Kg	1	9/22/2014 2:45:24 PM	15378
Toluene	3.1	0.050		mg/Kg	1	9/22/2014 2:45:24 PM	15378
Ethylbenzene	0.51	0.050		mg/Kg	1	9/22/2014 2:45:24 PM	15378
Xylenes, Total	3.4	0.10		mg/Kg	1	9/22/2014 2:45:24 PM	15378
Surr: 4-Bromofluorobenzene	127	80-120	S	%REC	1	9/22/2014 2:45:24 PM	15378
<b>MERCURY, TCLP</b>							Analyst: <b>JLF</b>
Mercury	ND	0.020		mg/L	1	9/23/2014 11:06:16 AM	15428
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	5.0		mg/L	1	9/20/2014 10:03:29 AM	15406
Barium	ND	100		mg/L	1	9/20/2014 10:03:29 AM	15406
Cadmium	ND	1.0		mg/L	1	9/20/2014 10:03:29 AM	15406
Chromium	ND	5.0		mg/L	1	9/20/2014 10:03:29 AM	15406
Lead	ND	5.0		mg/L	1	9/20/2014 10:03:29 AM	15406
Selenium	ND	1.0		mg/L	1	9/20/2014 10:03:29 AM	15406
Silver	ND	5.0		mg/L	1	9/20/2014 10:03:29 AM	15406
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	9/23/2014 3:51:36 PM	15413
3+4-Methylphenol	ND	200		mg/L	1	9/23/2014 3:51:36 PM	15413
Phenol	ND	200		mg/L	1	9/23/2014 3:51:36 PM	15413
2,4-Dinitrotoluene	ND	0.13		mg/L	1	9/23/2014 3:51:36 PM	15413
Hexachlorobenzene	ND	0.13		mg/L	1	9/23/2014 3:51:36 PM	15413
Hexachlorobutadiene	ND	0.50		mg/L	1	9/23/2014 3:51:36 PM	15413
Hexachloroethane	ND	3.0		mg/L	1	9/23/2014 3:51:36 PM	15413
Nitrobenzene	ND	2.0		mg/L	1	9/23/2014 3:51:36 PM	15413
Pentachlorophenol	ND	100		mg/L	1	9/23/2014 3:51:36 PM	15413
Pyridine	ND	5.0		mg/L	1	9/23/2014 3:51:36 PM	15413
2,4,5-Trichlorophenol	ND	400		mg/L	1	9/23/2014 3:51:36 PM	15413
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	9/23/2014 3:51:36 PM	15413
Cresols, Total	ND	200		mg/L	1	9/23/2014 3:51:36 PM	15413
Surr: 2-Fluorophenol	53.2	25-105		%REC	1	9/23/2014 3:51:36 PM	15413

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2.
RL	Reporting Detection Limit



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1409873**Date Reported: **10/7/2014****CLIENT:** Western Refining Southwest, Gallup**Client Sample ID:** Box Area Location #1**Project:** Excavation Underground Box Area**Collection Date:** 9/16/2014 12:50:00 PM**Lab ID:** 1409873-001**Matrix:** SOIL**Received Date:** 9/17/2014 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
Surr: Phenol-d5	62.6	22.3-70.3		%REC	1	9/23/2014 3:51:36 PM	15413
Surr: 2,4,6-Tribromophenol	39.5	30.4-134		%REC	1	9/23/2014 3:51:36 PM	15413
Surr: Nitrobenzene-d5	86.3	54.8-128		%REC	1	9/23/2014 3:51:36 PM	15413
Surr: 2-Fluorobiphenyl	86.6	53.3-122		%REC	1	9/23/2014 3:51:36 PM	15413
Surr: 4-Terphenyl-d14	81.3	51.8-133		%REC	1	9/23/2014 3:51:36 PM	15413
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Benzene	ND	0.50		ppm	10	9/22/2014 11:56:33 AM	15378
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	9/22/2014 11:56:33 AM	15378
2-Butanone	ND	200		ppm	10	9/22/2014 11:56:33 AM	15378
Carbon tetrachloride	ND	0.50		ppm	10	9/22/2014 11:56:33 AM	15378
Chlorobenzene	ND	100		ppm	10	9/22/2014 11:56:33 AM	15378
Chloroform	ND	6.0		ppm	10	9/22/2014 11:56:33 AM	15378
1,4-Dichlorobenzene	ND	7.5		ppm	10	9/22/2014 11:56:33 AM	15378
1,1-Dichloroethene	ND	0.70		ppm	10	9/22/2014 11:56:33 AM	15378
Tetrachloroethene (PCE)	ND	0.70		ppm	10	9/22/2014 11:56:33 AM	15378
Trichloroethene (TCE)	ND	0.50		ppm	10	9/22/2014 11:56:33 AM	15378
Vinyl chloride	ND	0.20		ppm	10	9/22/2014 11:56:33 AM	15378
Surr: 1,2-Dichloroethane-d4	95.3	70-130		%REC	10	9/22/2014 11:56:33 AM	15378
Surr: 4-Bromofluorobenzene	97.9	70-130		%REC	10	9/22/2014 11:56:33 AM	15378
Surr: Dibromofluoromethane	97.4	70-130		%REC	10	9/22/2014 11:56:33 AM	15378
Surr: Toluene-d8	83.6	70-130		%REC	10	9/22/2014 11:56:33 AM	15378
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>JME</b>
Petroleum Hydrocarbons, TR	160	20		mg/Kg	1	9/19/2014	15373

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2.
RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1409873**

Date Reported: **10/7/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Box Area Location #2

**Project:** Excavation Underground Box Area

**Collection Date:** 9/16/2014 1:05:00 PM

**Lab ID:** 1409873-002

**Matrix:** SOIL

**Received Date:** 9/17/2014 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	980	100		mg/Kg	10	9/19/2014 5:04:59 PM	15363
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	9/19/2014 5:04:59 PM	15363
Surr: DNOP	0	57.9-140	S	%REC	10	9/19/2014 5:04:59 PM	15363
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	230	5.0		mg/Kg	1	9/22/2014 3:14:00 PM	15378
Surr: BFB	484	80-120	S	%REC	1	9/22/2014 3:14:00 PM	15378
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	0.082	0.050		mg/Kg	1	9/22/2014 3:14:00 PM	15378
Toluene	8.0	0.50		mg/Kg	10	9/23/2014 4:19:00 AM	15378
Ethylbenzene	1.2	0.050		mg/Kg	1	9/22/2014 3:14:00 PM	15378
Xylenes, Total	8.6	0.10		mg/Kg	1	9/22/2014 3:14:00 PM	15378
Surr: 4-Bromofluorobenzene	141	80-120	S	%REC	1	9/22/2014 3:14:00 PM	15378
<b>MERCURY, TCLP</b>							Analyst: <b>JLF</b>
Mercury	ND	0.020		mg/L	1	9/23/2014 11:11:49 AM	15428
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	5.0		mg/L	1	9/20/2014 10:04:43 AM	15406
Barium	ND	100		mg/L	1	9/20/2014 10:04:43 AM	15406
Cadmium	ND	1.0		mg/L	1	9/20/2014 10:04:43 AM	15406
Chromium	ND	5.0		mg/L	1	9/20/2014 10:04:43 AM	15406
Lead	ND	5.0		mg/L	1	9/20/2014 10:04:43 AM	15406
Selenium	ND	1.0		mg/L	1	9/20/2014 10:04:43 AM	15406
Silver	ND	5.0		mg/L	1	9/20/2014 10:04:43 AM	15406
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	9/23/2014 4:20:47 PM	15413
3+4-Methylphenol	ND	200		mg/L	1	9/23/2014 4:20:47 PM	15413
Phenol	ND	200		mg/L	1	9/23/2014 4:20:47 PM	15413
2,4-Dinitrotoluene	ND	0.13		mg/L	1	9/23/2014 4:20:47 PM	15413
Hexachlorobenzene	ND	0.13		mg/L	1	9/23/2014 4:20:47 PM	15413
Hexachlorobutadiene	ND	0.50		mg/L	1	9/23/2014 4:20:47 PM	15413
Hexachloroethane	ND	3.0		mg/L	1	9/23/2014 4:20:47 PM	15413
Nitrobenzene	ND	2.0		mg/L	1	9/23/2014 4:20:47 PM	15413
Pentachlorophenol	ND	100		mg/L	1	9/23/2014 4:20:47 PM	15413
Pyridine	ND	5.0		mg/L	1	9/23/2014 4:20:47 PM	15413
2,4,5-Trichlorophenol	ND	400		mg/L	1	9/23/2014 4:20:47 PM	15413
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	9/23/2014 4:20:47 PM	15413
Cresols, Total	ND	200		mg/L	1	9/23/2014 4:20:47 PM	15413
Surr: 2-Fluorophenol	48.5	25-105		%REC	1	9/23/2014 4:20:47 PM	15413

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2.
RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1409873**

Date Reported: **10/7/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Box Area Location #2

**Project:** Excavation Underground Box Area

**Collection Date:** 9/16/2014 1:05:00 PM

**Lab ID:** 1409873-002

**Matrix:** SOIL

**Received Date:** 9/17/2014 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
Surr: Phenol-d5	54.5	22.3-70.3		%REC	1	9/23/2014 4:20:47 PM	15413
Surr: 2,4,6-Tribromophenol	37.3	30.4-134		%REC	1	9/23/2014 4:20:47 PM	15413
Surr: Nitrobenzene-d5	88.7	54.8-128		%REC	1	9/23/2014 4:20:47 PM	15413
Surr: 2-Fluorobiphenyl	80.4	53.3-122		%REC	1	9/23/2014 4:20:47 PM	15413
Surr: 4-Terphenyl-d14	80.1	51.8-133		%REC	1	9/23/2014 4:20:47 PM	15413
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Benzene	ND	0.50		ppm	10	9/22/2014 12:24:35 PM	15378
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	9/22/2014 12:24:35 PM	15378
2-Butanone	ND	200		ppm	10	9/22/2014 12:24:35 PM	15378
Carbon tetrachloride	ND	0.50		ppm	10	9/22/2014 12:24:35 PM	15378
Chlorobenzene	ND	100		ppm	10	9/22/2014 12:24:35 PM	15378
Chloroform	ND	6.0		ppm	10	9/22/2014 12:24:35 PM	15378
1,4-Dichlorobenzene	ND	7.5		ppm	10	9/22/2014 12:24:35 PM	15378
1,1-Dichloroethene	ND	0.70		ppm	10	9/22/2014 12:24:35 PM	15378
Tetrachloroethene (PCE)	ND	0.70		ppm	10	9/22/2014 12:24:35 PM	15378
Trichloroethene (TCE)	ND	0.50		ppm	10	9/22/2014 12:24:35 PM	15378
Vinyl chloride	ND	0.20		ppm	10	9/22/2014 12:24:35 PM	15378
Surr: 1,2-Dichloroethane-d4	88.2	70-130		%REC	10	9/22/2014 12:24:35 PM	15378
Surr: 4-Bromofluorobenzene	91.4	70-130		%REC	10	9/22/2014 12:24:35 PM	15378
Surr: Dibromofluoromethane	93.1	70-130		%REC	10	9/22/2014 12:24:35 PM	15378
Surr: Toluene-d8	92.9	70-130		%REC	10	9/22/2014 12:24:35 PM	15378
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>JME</b>
Petroleum Hydrocarbons, TR	1400	200		mg/Kg	10	9/19/2014	15373

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1409873**

Date Reported: **10/7/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Box Area Location #3

**Project:** Excavation Underground Box Area

**Collection Date:** 9/16/2014 1:20:00 PM

**Lab ID:** 1409873-003

**Matrix:** SOIL

**Received Date:** 9/17/2014 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	3600	100		mg/Kg	10	9/19/2014 5:35:14 PM	15363
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	9/19/2014 5:35:14 PM	15363
Surr: DNOP	0	57.9-140	S	%REC	10	9/19/2014 5:35:14 PM	15363
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	560	50		mg/Kg	10	9/23/2014 10:51:01 AM	15378
Surr: BFB	191	80-120	S	%REC	10	9/23/2014 10:51:01 AM	15378
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	0.22	0.050		mg/Kg	1	9/22/2014 3:42:39 PM	15378
Toluene	4.7	0.050		mg/Kg	1	9/22/2014 3:42:39 PM	15378
Ethylbenzene	2.9	0.050		mg/Kg	1	9/22/2014 3:42:39 PM	15378
Xylenes, Total	26	1.0		mg/Kg	10	9/23/2014 10:51:01 AM	15378
Surr: 4-Bromofluorobenzene	176	80-120	S	%REC	1	9/22/2014 3:42:39 PM	15378
<b>MERCURY, TCLP</b>							Analyst: <b>JLF</b>
Mercury	ND	0.020		mg/L	1	9/23/2014 11:13:39 AM	15428
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	5.0		mg/L	1	9/20/2014 10:05:56 AM	15406
Barium	ND	100		mg/L	1	9/20/2014 10:05:56 AM	15406
Cadmium	ND	1.0		mg/L	1	9/20/2014 10:05:56 AM	15406
Chromium	ND	5.0		mg/L	1	9/20/2014 10:05:56 AM	15406
Lead	ND	5.0		mg/L	1	9/20/2014 10:05:56 AM	15406
Selenium	ND	1.0		mg/L	1	9/20/2014 10:05:56 AM	15406
Silver	ND	5.0		mg/L	1	9/20/2014 10:05:56 AM	15406
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	9/23/2014 4:50:01 PM	15413
3+4-Methylphenol	ND	200		mg/L	1	9/23/2014 4:50:01 PM	15413
Phenol	ND	200		mg/L	1	9/23/2014 4:50:01 PM	15413
2,4-Dinitrotoluene	ND	0.13		mg/L	1	9/23/2014 4:50:01 PM	15413
Hexachlorobenzene	ND	0.13		mg/L	1	9/23/2014 4:50:01 PM	15413
Hexachlorobutadiene	ND	0.50		mg/L	1	9/23/2014 4:50:01 PM	15413
Hexachloroethane	ND	3.0		mg/L	1	9/23/2014 4:50:01 PM	15413
Nitrobenzene	ND	2.0		mg/L	1	9/23/2014 4:50:01 PM	15413
Pentachlorophenol	ND	100		mg/L	1	9/23/2014 4:50:01 PM	15413
Pyridine	ND	5.0		mg/L	1	9/23/2014 4:50:01 PM	15413
2,4,5-Trichlorophenol	ND	400		mg/L	1	9/23/2014 4:50:01 PM	15413
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	9/23/2014 4:50:01 PM	15413
Cresols, Total	ND	200		mg/L	1	9/23/2014 4:50:01 PM	15413
Surr: 2-Fluorophenol	49.6	25-105		%REC	1	9/23/2014 4:50:01 PM	15413

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2.
RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1409873**Date Reported: **10/7/2014****CLIENT:** Western Refining Southwest, Gallup**Client Sample ID:** Box Area Location #3**Project:** Excavation Underground Box Area**Collection Date:** 9/16/2014 1:20:00 PM**Lab ID:** 1409873-003**Matrix:** SOIL**Received Date:** 9/17/2014 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
Surr: Phenol-d5	53.3	22.3-70.3		%REC	1	9/23/2014 4:50:01 PM	15413
Surr: 2,4,6-Tribromophenol	38.5	30.4-134		%REC	1	9/23/2014 4:50:01 PM	15413
Surr: Nitrobenzene-d5	80.2	54.8-128		%REC	1	9/23/2014 4:50:01 PM	15413
Surr: 2-Fluorobiphenyl	75.7	53.3-122		%REC	1	9/23/2014 4:50:01 PM	15413
Surr: 4-Terphenyl-d14	78.7	51.8-133		%REC	1	9/23/2014 4:50:01 PM	15413
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Benzene	ND	0.50		ppm	10	9/22/2014 12:52:44 PM	15378
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	9/22/2014 12:52:44 PM	15378
2-Butanone	ND	200		ppm	10	9/22/2014 12:52:44 PM	15378
Carbon tetrachloride	ND	0.50		ppm	10	9/22/2014 12:52:44 PM	15378
Chlorobenzene	ND	100		ppm	10	9/22/2014 12:52:44 PM	15378
Chloroform	ND	6.0		ppm	10	9/22/2014 12:52:44 PM	15378
1,4-Dichlorobenzene	ND	7.5		ppm	10	9/22/2014 12:52:44 PM	15378
1,1-Dichloroethene	ND	0.70		ppm	10	9/22/2014 12:52:44 PM	15378
Tetrachloroethene (PCE)	ND	0.70		ppm	10	9/22/2014 12:52:44 PM	15378
Trichloroethene (TCE)	ND	0.50		ppm	10	9/22/2014 12:52:44 PM	15378
Vinyl chloride	ND	0.20		ppm	10	9/22/2014 12:52:44 PM	15378
Surr: 1,2-Dichloroethane-d4	99.0	70-130		%REC	10	9/22/2014 12:52:44 PM	15378
Surr: 4-Bromofluorobenzene	109	70-130		%REC	10	9/22/2014 12:52:44 PM	15378
Surr: Dibromofluoromethane	100	70-130		%REC	10	9/22/2014 12:52:44 PM	15378
Surr: Toluene-d8	85.8	70-130		%REC	10	9/22/2014 12:52:44 PM	15378
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>JME</b>
Petroleum Hydrocarbons, TR	1900	200		mg/Kg	10	9/19/2014	15373

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 6 of 18
	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	
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1409873**

Date Reported: **10/7/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Box Area Location #4

**Project:** Excavation Underground Box Area

**Collection Date:** 9/16/2014 1:35:00 PM

**Lab ID:** 1409873-004

**Matrix:** SOIL

**Received Date:** 9/17/2014 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	790	10		mg/Kg	1	9/19/2014 6:05:30 PM	15363
Motor Oil Range Organics (MRO)	58	50		mg/Kg	1	9/19/2014 6:05:30 PM	15363
Surr: DNOP	108	57.9-140		%REC	1	9/19/2014 6:05:30 PM	15363
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	390	50		mg/Kg	10	9/23/2014 11:21:14 AM	15378
Surr: BFB	184	80-120	S	%REC	10	9/23/2014 11:21:14 AM	15378
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	0.39	0.050		mg/Kg	1	9/22/2014 4:11:15 PM	15378
Toluene	12	0.50		mg/Kg	10	9/23/2014 11:21:14 AM	15378
Ethylbenzene	2.0	0.050		mg/Kg	1	9/22/2014 4:11:15 PM	15378
Xylenes, Total	15	1.0		mg/Kg	10	9/23/2014 11:21:14 AM	15378
Surr: 4-Bromofluorobenzene	169	80-120	S	%REC	1	9/22/2014 4:11:15 PM	15378
<b>MERCURY, TCLP</b>							Analyst: <b>JLF</b>
Mercury	ND	0.020		mg/L	1	9/23/2014 11:15:29 AM	15428
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	5.0		mg/L	1	9/20/2014 10:07:11 AM	15406
Barium	ND	100		mg/L	1	9/20/2014 10:07:11 AM	15406
Cadmium	ND	1.0		mg/L	1	9/20/2014 10:07:11 AM	15406
Chromium	ND	5.0		mg/L	1	9/20/2014 10:07:11 AM	15406
Lead	ND	5.0		mg/L	1	9/20/2014 10:07:11 AM	15406
Selenium	ND	1.0		mg/L	1	9/20/2014 10:07:11 AM	15406
Silver	ND	5.0		mg/L	1	9/20/2014 10:07:11 AM	15406
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	9/23/2014 5:19:05 PM	15413
3+4-Methylphenol	ND	200		mg/L	1	9/23/2014 5:19:05 PM	15413
Phenol	ND	200		mg/L	1	9/23/2014 5:19:05 PM	15413
2,4-Dinitrotoluene	ND	0.13		mg/L	1	9/23/2014 5:19:05 PM	15413
Hexachlorobenzene	ND	0.13		mg/L	1	9/23/2014 5:19:05 PM	15413
Hexachlorobutadiene	ND	0.50		mg/L	1	9/23/2014 5:19:05 PM	15413
Hexachloroethane	ND	3.0		mg/L	1	9/23/2014 5:19:05 PM	15413
Nitrobenzene	ND	2.0		mg/L	1	9/23/2014 5:19:05 PM	15413
Pentachlorophenol	ND	100		mg/L	1	9/23/2014 5:19:05 PM	15413
Pyridine	ND	5.0		mg/L	1	9/23/2014 5:19:05 PM	15413
2,4,5-Trichlorophenol	ND	400		mg/L	1	9/23/2014 5:19:05 PM	15413
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	9/23/2014 5:19:05 PM	15413
Cresols, Total	ND	200		mg/L	1	9/23/2014 5:19:05 PM	15413
Surr: 2-Fluorophenol	68.7	25-105		%REC	1	9/23/2014 5:19:05 PM	15413

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2.
RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1409873**

Date Reported: **10/7/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Box Area Location #4

**Project:** Excavation Underground Box Area

**Collection Date:** 9/16/2014 1:35:00 PM

**Lab ID:** 1409873-004

**Matrix:** SOIL

**Received Date:** 9/17/2014 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
Surr: Phenol-d5	67.8	22.3-70.3		%REC	1	9/23/2014 5:19:05 PM	15413
Surr: 2,4,6-Tribromophenol	84.2	30.4-134		%REC	1	9/23/2014 5:19:05 PM	15413
Surr: Nitrobenzene-d5	95.6	54.8-128		%REC	1	9/23/2014 5:19:05 PM	15413
Surr: 2-Fluorobiphenyl	88.2	53.3-122		%REC	1	9/23/2014 5:19:05 PM	15413
Surr: 4-Terphenyl-d14	95.8	51.8-133		%REC	1	9/23/2014 5:19:05 PM	15413
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Benzene	ND	0.50		ppm	10	9/22/2014 1:20:59 PM	15378
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	9/22/2014 1:20:59 PM	15378
2-Butanone	ND	200		ppm	10	9/22/2014 1:20:59 PM	15378
Carbon tetrachloride	ND	0.50		ppm	10	9/22/2014 1:20:59 PM	15378
Chlorobenzene	ND	100		ppm	10	9/22/2014 1:20:59 PM	15378
Chloroform	ND	6.0		ppm	10	9/22/2014 1:20:59 PM	15378
1,4-Dichlorobenzene	ND	7.5		ppm	10	9/22/2014 1:20:59 PM	15378
1,1-Dichloroethene	ND	0.70		ppm	10	9/22/2014 1:20:59 PM	15378
Tetrachloroethene (PCE)	ND	0.70		ppm	10	9/22/2014 1:20:59 PM	15378
Trichloroethene (TCE)	ND	0.50		ppm	10	9/22/2014 1:20:59 PM	15378
Vinyl chloride	ND	0.20		ppm	10	9/22/2014 1:20:59 PM	15378
Surr: 1,2-Dichloroethane-d4	84.3	70-130		%REC	10	9/22/2014 1:20:59 PM	15378
Surr: 4-Bromofluorobenzene	106	70-130		%REC	10	9/22/2014 1:20:59 PM	15378
Surr: Dibromofluoromethane	86.1	70-130		%REC	10	9/22/2014 1:20:59 PM	15378
Surr: Toluene-d8	87.4	70-130		%REC	10	9/22/2014 1:20:59 PM	15378
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>JME</b>
Petroleum Hydrocarbons, TR	710	20		mg/Kg	1	9/19/2014	15373

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 8 of 18
	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	
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			





12065 Lebanon Rd.  
Mt. Juliet, TN 37122  
(615) 758-5858  
1-800-767-5859  
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

# REPORT OF ANALYSIS

September 24, 2014

Hall Environmental Analysis Laborat  
4901 Hawkins NE  
Albuquerque, NM 87109

Date Received : September 19, 2014  
Description :

Sample ID : 1409873-001B BOX AREA LOCATION SW9045B

Collected By :  
Collection Date : 09/16/14 12:50

ESC Sample # : L722646-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	Non-Corrosive			9045D	09/24/14	1
Ignitability	See Footnote		Deg. F	D93/1010A	09/24/14	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/kg	9012B	09/24/14	1
Reactive Sulf. (SW846 7.3.4.1)	BDL	25.	mg/kg	9034/9030B	09/23/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 09/24/14 16:37 Printed: 09/24/14 16:38  
L722646-01 (IGNITABILITY) - Did Not Ignite @ 170 F



12065 Lebanon Rd.  
Mt. Juliet, TN 37122  
(615) 758-5858  
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Tax I.D. 62-0814289

Est. 1970

# REPORT OF ANALYSIS

September 24, 2014

Hall Environmental Analysis Laborat  
4901 Hawkins NE  
Albuquerque, NM 87109

Date Received : September 19, 2014  
Description :

Sample ID : 1409873-002B BOX AREA LOCATION SW9045B

Collected By :  
Collection Date : 09/16/14 13:05

ESC Sample # : L722646-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	Non-Corrosive			9045D	09/24/14	1
Ignitability	See Footnote		Deg. F	D93/1010A	09/24/14	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/kg	9012B	09/24/14	1
Reactive Sulf. (SW846 7.3.4.1)	BDL	25.	mg/kg	9034/9030B	09/23/14	1

BDL - Below Detection Limit  
Det. Limit - Practical Quantitation Limit(PQL)  
Note:

The reported analytical results relate only to the sample submitted.  
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Reported: 09/24/14 16:37 Printed: 09/24/14 16:38  
L722646-02 (IGNITABILITY) - Did Not Ignite @ 170 F



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Mt. Juliet, TN 37122  
(615) 758-5858  
1-800-767-5859  
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

September 24, 2014

Hall Environmental Analysis Laborat  
4901 Hawkins NE  
Albuquerque, NM 87109

Date Received : September 19, 2014  
Description :  
Sample ID : 1409873-003B BOX AREA LOCATION SW9045B  
Collected By :  
Collection Date : 09/16/14 13:20

ESC Sample # : L722646-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	Non-Corrosive			9045D	09/24/14	1
Ignitability	See Footnote		Deg. F	D93/1010A	09/24/14	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/kg	9012B	09/24/14	1
Reactive Sulf. (SW846 7.3.4.1)	BDL	25.	mg/kg	9034/9030B	09/23/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 09/24/14 16:37 Printed: 09/24/14 16:38  
L722646-03 (IGNITABILITY) - Did Not Ignite @ 170 F



12065 Lebanon Rd.  
Mt. Juliet, TN 37122  
(615) 758-5858  
1-800-767-5859  
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

September 24, 2014

Hall Environmental Analysis Laborat  
4901 Hawkins NE  
Albuquerque, NM 87109

Date Received : September 19, 2014  
Description :  
Sample ID : 1409873-004B BOX AREA LOCATION SW9045B  
Collected By :  
Collection Date : 09/16/14 13:35

ESC Sample # : L722646-04

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	Non-Corrosive			9045D	09/24/14	1
Ignitability	See Footnote		Deg. F	D93/1010A	09/24/14	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/kg	9012B	09/24/14	1
Reactive Sulf. (SW846 7.3.4.1)	BDL	25.	mg/kg	9034/9030B	09/23/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 09/24/14 16:37 Printed: 09/24/14 16:38  
L722646-04 (IGNITABILITY) - Did Not Ignite @ 170 F



YOUR LAB OF CHOICE

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report  
Level II

L722646

12065 Lebanon Rd.  
Mt. Juliet, TN 37122  
(615) 758-5858  
1-800-767-5859  
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

September 24, 2014

Analyte	Result	Laboratory Blank Units % Rec	Limit	Batch	Date Analyzed
Reactive Sulf. (SW846 7.3.4.1)	< 25	mg/kg		WG744384	09/23/14 16:30
Reactive CN (SW846 7.3.3.2)	< .125	mg/kg		WG744385	09/24/14 11:24

Analyte	Units	Result	Duplicate Duplicate	RPD	Limit	Ref Samp	Batch
Corrosivity		0.0	0.0	0.0	10	L722646-01	WG744447
Corrosivity		0.0	0.0	0.0	10	L723025-01	WG744447
Reactive Sulf. (SW846 7.3.4.1)	mg/kg	0.0	0.0	0.0	20	L722646-01	WG744384
Ignitability	Deg. F	0.00	0.00	0.00	10	L722242-01	WG744667
Reactive CN (SW846 7.3.3.2)	mg/kg	0.0	0.0	0.0	20	L722646-01	WG744385

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Corrosivity		6.33	6.30	99.5	98.3-101.7	WG744447
Reactive Sulf. (SW846 7.3.4.1)	mg/kg	100	110.	110.	70-130	WG744384
Ignitability	Deg. F	82	82.0	100.	93-107	WG744667
Reactive CN (SW846 7.3.3.2)	mg/kg	.1	0.106	106.	50-150	WG744385

Analyte	Units	Laboratory Control Sample Duplicate Result Ref %Rec	Limit	RPD	Limit	Batch
Corrosivity		6.30 6.30 100.	98.3-101.7	0.0	10	WG744447
Reactive Sulf. (SW846 7.3.4.1)	mg/kg	100. 110. 100.	70-130	9.52	20	WG744384
Ignitability	Deg. F	82.0 82.0 100.	93-107	0.00	20	WG744667
Reactive CN (SW846 7.3.3.2)	mg/kg	0.0982 0.106 98.0	50-150	7.64	20	WG744385

Batch number / Run number / Sample number cross reference

WG744447: R2992418: L722646-01 02 03 04  
WG744384: R2992475: L722646-01 02 03 04  
WG744667: R2992509: L722646-01 02 03 04  
WG744385: R2992554: L722646-01 02 03 04

\* \* Calculations are performed prior to rounding of reported values.

\* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409873

07-Oct-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Box Area

Sample ID	MB-15373		SampType: MBLK		TestCode: EPA Method 418.1: TPH					
Client ID:	PBS		Batch ID: 15373		RunNo: 21288					
Prep Date:	9/18/2014		Analysis Date: 9/19/2014		SeqNo: 621284		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	20								

Sample ID	LCS-15373		SampType: LCS		TestCode: EPA Method 418.1: TPH					
Client ID:	LCSS		Batch ID: 15373		RunNo: 21288					
Prep Date:	9/18/2014		Analysis Date: 9/19/2014		SeqNo: 621285		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	96	20	100.0	0	95.8	80	120			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409873

07-Oct-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Box Area

Sample ID	MB-15363		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 15363		RunNo: 21269					
Prep Date:	9/18/2014		Analysis Date: 9/18/2014		SeqNo: 620601		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		100	57.9	140			

Sample ID	LCS-15363		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 15363		RunNo: 21269					
Prep Date:	9/18/2014		Analysis Date: 9/18/2014		SeqNo: 620602		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	62	10	50.00	0	125	68.6	130			
Surr: DNOP	5.2		5.000		104	57.9	140			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409873

07-Oct-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Box Area

Sample ID	MB-15378		SampType:	MBLK		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	PBS		Batch ID:	15378		RunNo:	21342				
Prep Date:	9/18/2014		Analysis Date:	9/22/2014		SeqNo:	623292		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	ND	5.0									
Surr: BFB	940		1000		94.2	80	120				

Sample ID	LCS-15378		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 15378		RunNo: 21342					
Prep Date:	9/18/2014		Analysis Date: 9/22/2014		SeqNo: 623293		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	65.8	139			
Surr: BFB	1000		1000		101	80	120			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409873

07-Oct-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Box Area

Sample ID	MB-15378		SampType: MBLK		TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBS		Batch ID: 15378		RunNo: 21342					
Prep Date:	9/18/2014		Analysis Date: 9/22/2014		SeqNo: 623326		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

Sample ID	LCS-15378		SampType: LCS		TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSS		Batch ID: 15378		RunNo: 21342					
Prep Date:	9/18/2014		Analysis Date: 9/22/2014		SeqNo: 623327		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.050	1.000	0	90.6	80	120			
Toluene	0.91	0.050	1.000	0	91.1	80	120			
Ethylbenzene	0.92	0.050	1.000	0	92.4	80	120			
Xylenes, Total	2.8	0.10	3.000	0	92.6	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		107	80	120			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409873

07-Oct-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Box Area

Sample ID	mb-15378		SampType: MBLK		TestCode: EPA Method 8260B: TCLP Compounds					
Client ID:	PBS		Batch ID: 15378		RunNo: 21355					
Prep Date:	9/18/2014		Analysis Date: 9/20/2014		SeqNo: 623925		Units: ppm			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
2-Butanone	ND	20								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	10								
Chloroform	ND	0.60								
1,4-Dichlorobenzene	ND	0.75								
1,1-Dichloroethene	ND	0.070								
Tetrachloroethene (PCE)	ND	0.070								
Trichloroethene (TCE)	ND	0.050								
Vinyl chloride	ND	0.020								
Surr: 1,2-Dichloroethane-d4	0.41		0.5000		82.2	70	130			
Surr: 4-Bromofluorobenzene	0.37		0.5000		74.2	70	130			
Surr: Dibromofluoromethane	0.42		0.5000		84.4	70	130			
Surr: Toluene-d8	0.47		0.5000		94.6	70	130			

Sample ID	lcs-15378		SampType: LCS		TestCode: EPA Method 8260B: TCLP Compounds					
Client ID:	LCSS		Batch ID: 15378		RunNo: 21355					
Prep Date:	9/18/2014		Analysis Date: 9/20/2014		SeqNo: 623926		Units: ppm			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.050	1.000	0	96.0	70	130			
Chlorobenzene	1.0	0.50	1.000	0	101	70	130			
1,1-Dichloroethene	1.1	0.070	1.000	0	105	60.5	160			
Trichloroethene (TCE)	0.92	0.050	1.000	0	91.5	58.8	139			
Surr: 1,2-Dichloroethane-d4	0.41		0.5000		82.0	70	130			
Surr: 4-Bromofluorobenzene	0.42		0.5000		84.7	70	130			
Surr: Dibromofluoromethane	0.44		0.5000		88.1	70	130			
Surr: Toluene-d8	0.44		0.5000		87.5	70	130			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409873

07-Oct-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Box Area

Sample ID	mb-15413		SampType:	MBLK		TestCode:	EPA Method 8270C TCLP			
Client ID:	PBS		Batch ID:	15413		RunNo:	21387			
Prep Date:	9/22/2014		Analysis Date:	9/23/2014		SeqNo:	624719		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	ND	200								
3+4-Methylphenol	ND	200								
Phenol	ND	200								
2,4-Dinitrotoluene	ND	0.13								
Hexachlorobenzene	ND	0.13								
Hexachlorobutadiene	ND	0.50								
Hexachloroethane	ND	3.0								
Nitrobenzene	ND	2.0								
Pentachlorophenol	ND	100								
Pyridine	ND	5.0								
2,4,5-Trichlorophenol	ND	400								
2,4,6-Trichlorophenol	ND	2.0								
Cresols, Total	ND	200								
Surr: 2-Fluorophenol	0.16		0.2000		78.8	25	105			
Surr: Phenol-d5	0.14		0.2000		68.7	22.3	70.3			
Surr: 2,4,6-Tribromophenol	0.16		0.2000		79.7	30.4	134			
Surr: Nitrobenzene-d5	0.092		0.1000		91.6	54.8	128			
Surr: 2-Fluorobiphenyl	0.086		0.1000		85.6	53.3	122			
Surr: 4-Terphenyl-d14	0.090		0.1000		90.1	51.8	133			

Sample ID	lcs-15413		SampType:	LCS		TestCode:	EPA Method 8270C TCLP			
Client ID:	LCSS		Batch ID:	15413		RunNo:	21387			
Prep Date:	9/22/2014		Analysis Date:	9/23/2014		SeqNo:	624720		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	0.076	0.010	0.1000	0	75.9	52.2	95.7			
3+4-Methylphenol	0.17	0.010	0.2000	0	85.5	52.4	142			
2,4-Dinitrotoluene	0.067	0.010	0.1000	0	67.1	43.4	110			
Hexachlorobenzene	0.078	0.010	0.1000	0	78.1	43.6	88.4			
Hexachlorobutadiene	0.064	0.010	0.1000	0	63.6	38.6	88.4			
Hexachloroethane	0.074	0.010	0.1000	0	73.7	45.7	83.6			
Nitrobenzene	0.077	0.010	0.1000	0	77.1	51.9	112			
Pentachlorophenol	0.033	0.010	0.1000	0	33.1	15.2	81.5			
Pyridine	0.062	0.010	0.1000	0	61.9	11.2	95.1			
2,4,5-Trichlorophenol	0.067	0.010	0.1000	0	66.8	46.9	110			
2,4,6-Trichlorophenol	0.064	0.010	0.1000	0	64.3	36.1	111			
Cresols, Total	0.25	0.010	0.3000	0	82.3	30	136			
Surr: 2-Fluorophenol	0.14		0.2000		71.6	25	105			
Surr: Phenol-d5	0.14		0.2000		70.7	22.3	70.3			S

### 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	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409873

07-Oct-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Box Area

Sample ID	lcs-15413		SampType: LCS		TestCode: EPA Method 8270C TCLP					
Client ID:	LCSS		Batch ID: 15413		RunNo: 21387					
Prep Date:	9/22/2014		Analysis Date: 9/23/2014		SeqNo: 624720		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	0.11		0.2000		56.0	30.4	134			
Surr: Nitrobenzene-d5	0.077		0.1000		76.6	54.8	128			
Surr: 2-Fluorobiphenyl	0.074		0.1000		74.0	53.3	122			
Surr: 4-Terphenyl-d14	0.076		0.1000		75.5	51.8	133			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409873

07-Oct-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Box Area

Sample ID	MB-15428		SampType:	MBLK		TestCode:	MERCURY, TCLP				
Client ID:	PBW		Batch ID:	15428		RunNo:	21367				
Prep Date:	9/22/2014		Analysis Date:	9/23/2014		SeqNo:	623963		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.020									

Sample ID	LCS-15428			SampType:	LCS		TestCode:	MERCURY, TCLP			
Client ID:	LCSW			Batch ID:	15428		RunNo:	21367			
Prep Date:	9/22/2014			Analysis Date:	9/23/2014		SeqNo:	623964		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.020	0.005000	0	98.4	80	120				

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409873

07-Oct-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Box Area

Sample ID	<b>MB-15406</b>		SampType:	<b>MBLK</b>		TestCode:	<b>EPA Method 6010B: TCLP Metals</b>			
Client ID:	<b>PBW</b>		Batch ID:	<b>15406</b>		RunNo:	<b>21324</b>			
Prep Date:	<b>9/19/2014</b>		Analysis Date:	<b>9/20/2014</b>		SeqNo:	<b>622314</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	5.0								
Barium	ND	100								
Cadmium	ND	1.0								
Chromium	ND	5.0								
Lead	ND	5.0								
Selenium	ND	1.0								
Silver	ND	5.0								

Sample ID	<b>LCS-15406</b>		SampType:	<b>LCS</b>		TestCode:	<b>EPA Method 6010B: TCLP Metals</b>			
Client ID:	<b>LCSW</b>		Batch ID:	<b>15406</b>		RunNo:	<b>21324</b>			
Prep Date:	<b>9/19/2014</b>		Analysis Date:	<b>9/20/2014</b>		SeqNo:	<b>622315</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	5.0	0.5000	0	109	80	120			
Barium	ND	100	0.5000	0	98.8	80	120			
Cadmium	ND	1.0	0.5000	0	103	80	120			
Chromium	ND	5.0	0.5000	0	97.5	80	120			
Lead	ND	5.0	0.5000	0	96.3	80	120			
Selenium	ND	1.0	0.5000	0	111	80	120			
Silver	ND	5.0	0.1000	0	104	80	120			

Sample ID	<b>1409873-004AMS</b>		SampType:	<b>MS</b>		TestCode:	<b>EPA Method 6010B: TCLP Metals</b>			
Client ID:	<b>Box Area Location #</b>		Batch ID:	<b>15406</b>		RunNo:	<b>21324</b>			
Prep Date:	<b>9/19/2014</b>		Analysis Date:	<b>9/20/2014</b>		SeqNo:	<b>622320</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	5.0	0.5000	0	109	75	125			
Barium	ND	100	0.5000	2.455	98.9	75	125			
Cadmium	ND	1.0	0.5000	0	103	75	125			
Chromium	ND	5.0	0.5000	0	95.7	75	125			
Lead	ND	5.0	0.5000	0.004490	94.5	75	125			
Selenium	ND	1.0	0.5000	0	108	75	125			
Silver	ND	5.0	0.1000	0	106	75	125			

Sample ID	<b>1409873-004AMSD</b>		SampType:	<b>MSD</b>		TestCode:	<b>EPA Method 6010B: TCLP Metals</b>			
Client ID:	<b>Box Area Location #</b>		Batch ID:	<b>15406</b>		RunNo:	<b>21324</b>			
Prep Date:	<b>9/19/2014</b>		Analysis Date:	<b>9/20/2014</b>		SeqNo:	<b>622321</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	5.0	0.5000	0	107	75	125	0	20	

### 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      | ND Not Detected at the Reporting Limit               |
| O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |
| R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
| S Spike Recovery outside accepted recovery limits |  |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1409873

07-Oct-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Box Area

Sample ID	1409873-004AMSD	SampType:	MSD	TestCode:	EPA Method 6010B: TCLP Metals					
Client ID:	Box Area Location #	Batch ID:	15406	RunNo:	21324					
Prep Date:	9/19/2014	Analysis Date:	9/20/2014	SeqNo:	622321	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	100	0.5000	2.455	92.6	75	125	0	20	
Cadmium	ND	1.0	0.5000	0	102	75	125	0	20	
Chromium	ND	5.0	0.5000	0	94.4	75	125	0	20	
Lead	ND	5.0	0.5000	0.004490	93.1	75	125	0	20	
Selenium	ND	1.0	0.5000	0	106	75	125	0	20	
Silver	ND	5.0	0.1000	0	105	75	125	0	20	

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit



## Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1409873

RcptNo: 1

Received by/date:

*mg* *09/17/14*

Logged By: Michelle Garcia

9/17/2014 4:32:00 PM

*Michelle Garcia*

Completed By: Michelle Garcia

9/17/2014 6:13:10 PM

*Michelle Garcia*

Reviewed By:

*[Signature]*

*09/18/14*

### Chain of Custody

1. Custody seals intact on sample bottles? Yes ☒ No ☐ Not Present ☐
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

### Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH:

(<2 or >12 unless noted)

Adjusted? \_\_\_\_\_

Checked by: \_\_\_\_\_

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

# Client: Western - Refining

mailing Address: 92 GIANT CROSSING ROAD

Ballup NM 87301

Phone #: 505 722 3833  
 mail or Fax#: 505 863 0930  
 QA/QC Package:  
☐ Standard ☐ Level 4 (Full Validation)  
☐ Other \_\_\_\_\_  
☐ EDD (Type) \_\_\_\_\_

Date	Time	Matrix	Sample Request ID
3/16/2014	12:50	Soil	Box Area Location # 1
3/16/2014	13:05	Soil	Box Area Location # 2
3/16/2014	13:20	Soil	Box Area Location # 3
3/16/2014	13:35	Soil	Box Area Location # 4

☐ Standard ☐ Rush

Project Name:

Excavation Underground Box Area  
 Project #:

North of Bullet Tanks

Project Manager:

Beck Larsen

Sampler: A. Dorsey / J. TSO / K. Sanchez

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0

Container Type and #  
 Preservative Type  
 HEAL No.  
 1409873  
 -001

9 oz - 3 N/A

9 oz - 3 N/A

9 oz - 3 N/A

9 oz - 3 N/A

Date: 3/17-14

Time: 14:30

Relinquished by: Alvin Dorsey

Received by: Michael Fin

Date: 3/17/14

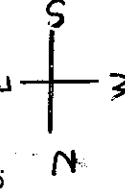
Time: 14:32

Received by:

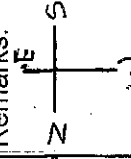
## Analysis Request

BTEX (8021)B	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO/DRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH (8310 or 8270SIMS)	RCRA 8 Metals	Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )	8081 Pesticides / 8082 PCB's	8260B (VOA) TCLP	8270 (Semi-VOA) TCLP	RCI	TCLP Metals	Air Bubbles (Y or N)
X	X	X	X	X					X	X	X	X	
X	X	X	X	X					X	X	X	X	
X	X	X	X	X					X	X	X	X	
X	X	X	X	X					X	X	X	X	

Remarks:



Remarks:



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**Appendix A-5**  
**Hall Environmental Analysis Laboratory, Inc. -**  
**November 25, 2014**  
**Analytical Report No. 1411729**

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Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

November 25, 2014

Thurman B. Larsen  
Western Refining Southwest, Gallup  
Rt. 3 Box 7  
Gallup, NM 87301  
TEL: (505) 722-0258  
FAX (505) 722-0210

RE: Excavation Underground Box Area

OrderNo.: 1411729

Dear Thurman B. Larsen:

Hall Environmental Analysis Laboratory received 4 sample(s) on 11/18/2014 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1411729

Date Reported: 11/25/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Box Area Location #A

**Project:** Excavation Underground Box Area

**Collection Date:** 11/17/2014 11:45:00 AM

**Lab ID:** 1411729-001

**Matrix:** SOIL

**Received Date:** 11/18/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	340	10		mg/Kg	1	11/20/2014 3:09:42 PM	16454
Surr: DNOP	87.4	63.5-128		%REC	1	11/20/2014 3:09:42 PM	16454
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	250	50		mg/Kg	10	11/20/2014 2:47:17 PM	16461
Surr: BFB	122	80-120	S	%REC	10	11/20/2014 2:47:17 PM	16461
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	0.94	0.50		mg/Kg	10	11/20/2014 2:47:17 PM	16461
Toluene	3.9	0.50		mg/Kg	10	11/20/2014 2:47:17 PM	16461
Ethylbenzene	0.92	0.50		mg/Kg	10	11/20/2014 2:47:17 PM	16461
Xylenes, Total	6.3	1.0		mg/Kg	10	11/20/2014 2:47:17 PM	16461
Surr: 4-Bromofluorobenzene	107	80-120		%REC	10	11/20/2014 2:47:17 PM	16461
<b>MERCURY, TCLP</b>							Analyst: <b>MMD</b>
Mercury	ND	0.020		mg/L	1	11/24/2014 2:02:44 PM	16533
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	5.0		mg/L	1	11/22/2014 11:49:11 AM	16515
Barium	ND	100		mg/L	1	11/22/2014 11:49:11 AM	16515
Cadmium	ND	1.0		mg/L	1	11/22/2014 11:49:11 AM	16515
Chromium	ND	5.0		mg/L	1	11/22/2014 11:49:11 AM	16515
Lead	ND	5.0		mg/L	1	11/22/2014 11:49:11 AM	16515
Selenium	ND	1.0		mg/L	1	11/22/2014 11:49:11 AM	16515
Silver	ND	5.0		mg/L	1	11/22/2014 11:49:11 AM	16515
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	11/24/2014 3:03:01 PM	16529
3+4-Methylphenol	ND	200		mg/L	1	11/24/2014 3:03:01 PM	16529
Phenol	ND	200		mg/L	1	11/24/2014 3:03:01 PM	16529
2,4-Dinitrotoluene	ND	0.13		mg/L	1	11/24/2014 3:03:01 PM	16529
Hexachlorobenzene	ND	0.13		mg/L	1	11/24/2014 3:03:01 PM	16529
Hexachlorobutadiene	ND	0.50		mg/L	1	11/24/2014 3:03:01 PM	16529
Hexachloroethane	ND	3.0		mg/L	1	11/24/2014 3:03:01 PM	16529
Nitrobenzene	ND	2.0		mg/L	1	11/24/2014 3:03:01 PM	16529
Pentachlorophenol	ND	100		mg/L	1	11/24/2014 3:03:01 PM	16529
Pyridine	ND	5.0		mg/L	1	11/24/2014 3:03:01 PM	16529
2,4,5-Trichlorophenol	ND	400		mg/L	1	11/24/2014 3:03:01 PM	16529
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	11/24/2014 3:03:01 PM	16529
Cresols, Total	ND	200		mg/L	1	11/24/2014 3:03:01 PM	16529
Surr: 2-Fluorophenol	70.0	25-105		%REC	1	11/24/2014 3:03:01 PM	16529
Surr: Phenol-d5	66.3	22.3-70.3		%REC	1	11/24/2014 3:03:01 PM	16529

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1411729

Date Reported: 11/25/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Box Area Location #A

**Project:** Excavation Underground Box Area

**Collection Date:** 11/17/2014 11:45:00 AM

**Lab ID:** 1411729-001

**Matrix:** SOIL

**Received Date:** 11/18/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
Surr: 2,4,6-Tribromophenol	92.1	30.4-134		%REC	1	11/24/2014 3:03:01 PM	16529
Surr: Nitrobenzene-d5	94.3	54.8-128		%REC	1	11/24/2014 3:03:01 PM	16529
Surr: 2-Fluorobiphenyl	84.7	53.3-122		%REC	1	11/24/2014 3:03:01 PM	16529
Surr: 4-Terphenyl-d14	86.9	51.8-133		%REC	1	11/24/2014 3:03:01 PM	16529
<b>VOLATILES BY 8260B/1311</b>							Analyst: <b>cadg</b>
Benzene	ND	0.50		mg/L	1	11/21/2014 11:06:37 PM	16505
2-Butanone	ND	200		mg/L	1	11/21/2014 11:06:37 PM	16505
Carbon Tetrachloride	ND	0.50		mg/L	1	11/21/2014 11:06:37 PM	16505
Chlorobenzene	ND	100		mg/L	1	11/21/2014 11:06:37 PM	16505
Chloroform	ND	6.0		mg/L	1	11/21/2014 11:06:37 PM	16505
1,4-Dichlorobenzene	ND	7.5		mg/L	1	11/21/2014 11:06:37 PM	16505
1,2-Dichloroethane (EDC)	ND	0.50		mg/L	1	11/21/2014 11:06:37 PM	16505
1,1-Dichloroethene	ND	0.70		mg/L	1	11/21/2014 11:06:37 PM	16505
Hexachlorobutadiene	ND	0.50		mg/L	1	11/21/2014 11:06:37 PM	16505
Tetrachloroethene (PCE)	ND	0.70		mg/L	1	11/21/2014 11:06:37 PM	16505
Trichloroethene (TCE)	ND	0.50		mg/L	1	11/21/2014 11:06:37 PM	16505
Vinyl chloride	ND	0.20		mg/L	1	11/21/2014 11:06:37 PM	16505
Surr: 1,2-Dichloroethane-d4	100	70-130		%REC	1	11/21/2014 11:06:37 PM	16505
Surr: 4-Bromofluorobenzene	86.0	70-130		%REC	1	11/21/2014 11:06:37 PM	16505
Surr: Dibromofluoromethane	100	70-130		%REC	1	11/21/2014 11:06:37 PM	16505
Surr: Toluene-d8	105	70-130		%REC	1	11/21/2014 11:06:37 PM	16505
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>BCN</b>
Petroleum Hydrocarbons, TR	530	20		mg/Kg	1	11/24/2014	16463

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 2 of 20
	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	
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1411729

Date Reported: 11/25/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Box Area Location #B

**Project:** Excavation Underground Box Area

**Collection Date:** 11/17/2014 12:00:00 PM

**Lab ID:** 1411729-002

**Matrix:** SOIL

**Received Date:** 11/18/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	300	9.9		mg/Kg	1	11/20/2014 3:33:28 PM	16454
Surr: DNOP	87.9	63.5-128		%REC	1	11/20/2014 3:33:28 PM	16454
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	240	25		mg/Kg	5	11/20/2014 3:15:54 PM	16461
Surr: BFB	158	80-120	S	%REC	5	11/20/2014 3:15:54 PM	16461
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	0.45	0.25		mg/Kg	5	11/20/2014 3:15:54 PM	16461
Toluene	6.2	0.25		mg/Kg	5	11/20/2014 3:15:54 PM	16461
Ethylbenzene	1.5	0.25		mg/Kg	5	11/20/2014 3:15:54 PM	16461
Xylenes, Total	11	0.50		mg/Kg	5	11/20/2014 3:15:54 PM	16461
Surr: 4-Bromofluorobenzene	113	80-120		%REC	5	11/20/2014 3:15:54 PM	16461
<b>MERCURY, TCLP</b>							Analyst: <b>MMD</b>
Mercury	ND	0.020		mg/L	1	11/24/2014 2:04:33 PM	16533
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	5.0		mg/L	1	11/22/2014 11:50:26 AM	16515
Barium	ND	100		mg/L	5	11/22/2014 12:04:16 PM	16515
Cadmium	ND	1.0		mg/L	1	11/22/2014 11:50:26 AM	16515
Chromium	ND	5.0		mg/L	1	11/22/2014 11:50:26 AM	16515
Lead	ND	5.0		mg/L	1	11/22/2014 11:50:26 AM	16515
Selenium	ND	1.0		mg/L	1	11/22/2014 11:50:26 AM	16515
Silver	ND	5.0		mg/L	1	11/22/2014 11:50:26 AM	16515
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	11/24/2014 4:25:02 PM	16529
3+4-Methylphenol	ND	200		mg/L	1	11/24/2014 4:25:02 PM	16529
Phenol	ND	200		mg/L	1	11/24/2014 4:25:02 PM	16529
2,4-Dinitrotoluene	ND	0.13		mg/L	1	11/24/2014 4:25:02 PM	16529
Hexachlorobenzene	ND	0.13		mg/L	1	11/24/2014 4:25:02 PM	16529
Hexachlorobutadiene	ND	0.50		mg/L	1	11/24/2014 4:25:02 PM	16529
Hexachloroethane	ND	3.0		mg/L	1	11/24/2014 4:25:02 PM	16529
Nitrobenzene	ND	2.0		mg/L	1	11/24/2014 4:25:02 PM	16529
Pentachlorophenol	ND	100		mg/L	1	11/24/2014 4:25:02 PM	16529
Pyridine	ND	5.0		mg/L	1	11/24/2014 4:25:02 PM	16529
2,4,5-Trichlorophenol	ND	400		mg/L	1	11/24/2014 4:25:02 PM	16529
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	11/24/2014 4:25:02 PM	16529
Cresols, Total	ND	200		mg/L	1	11/24/2014 4:25:02 PM	16529
Surr: 2-Fluorophenol	69.6	25-105		%REC	1	11/24/2014 4:25:02 PM	16529
Surr: Phenol-d5	63.4	22.3-70.3		%REC	1	11/24/2014 4:25:02 PM	16529

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1411729

Date Reported: 11/25/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Box Area Location #B

**Project:** Excavation Underground Box Area

**Collection Date:** 11/17/2014 12:00:00 PM

**Lab ID:** 1411729-002

**Matrix:** SOIL

**Received Date:** 11/18/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
Surr: 2,4,6-Tribromophenol	84.5	30.4-134		%REC	1	11/24/2014 4:25:02 PM	16529
Surr: Nitrobenzene-d5	88.6	54.8-128		%REC	1	11/24/2014 4:25:02 PM	16529
Surr: 2-Fluorobiphenyl	77.8	53.3-122		%REC	1	11/24/2014 4:25:02 PM	16529
Surr: 4-Terphenyl-d14	77.8	51.8-133		%REC	1	11/24/2014 4:25:02 PM	16529
<b>VOLATILES BY 8260B/1311</b>							Analyst: <b>cadg</b>
Benzene	ND	0.50		mg/L	1	11/22/2014 1:46:58 AM	16505
2-Butanone	ND	200		mg/L	1	11/22/2014 1:46:58 AM	16505
Carbon Tetrachloride	ND	0.50		mg/L	1	11/22/2014 1:46:58 AM	16505
Chlorobenzene	ND	100		mg/L	1	11/22/2014 1:46:58 AM	16505
Chloroform	ND	6.0		mg/L	1	11/22/2014 1:46:58 AM	16505
1,4-Dichlorobenzene	ND	7.5		mg/L	1	11/22/2014 1:46:58 AM	16505
1,2-Dichloroethane (EDC)	ND	0.50		mg/L	1	11/22/2014 1:46:58 AM	16505
1,1-Dichloroethene	ND	0.70		mg/L	1	11/22/2014 1:46:58 AM	16505
Hexachlorobutadiene	ND	0.50		mg/L	1	11/22/2014 1:46:58 AM	16505
Tetrachloroethene (PCE)	ND	0.70		mg/L	1	11/22/2014 1:46:58 AM	16505
Trichloroethene (TCE)	ND	0.50		mg/L	1	11/22/2014 1:46:58 AM	16505
Vinyl chloride	ND	0.20		mg/L	1	11/22/2014 1:46:58 AM	16505
Surr: 1,2-Dichloroethane-d4	103	70-130		%REC	1	11/22/2014 1:46:58 AM	16505
Surr: 4-Bromofluorobenzene	109	70-130		%REC	1	11/22/2014 1:46:58 AM	16505
Surr: Dibromofluoromethane	101	70-130		%REC	1	11/22/2014 1:46:58 AM	16505
Surr: Toluene-d8	106	70-130		%REC	1	11/22/2014 1:46:58 AM	16505
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>BCN</b>
Petroleum Hydrocarbons, TR	920	200		mg/Kg	10	11/24/2014	16463

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1411729

Date Reported: 11/25/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Box Area Location #C

**Project:** Excavation Underground Box Area

**Collection Date:** 11/17/2014 12:25:00 PM

**Lab ID:** 1411729-003

**Matrix:** SOIL

**Received Date:** 11/18/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	11/20/2014 3:54:50 PM	16454
Surr: DNOP	87.2	63.5-128		%REC	1	11/20/2014 3:54:50 PM	16454
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/20/2014 4:41:54 PM	16461
Surr: BFB	98.6	80-120		%REC	1	11/20/2014 4:41:54 PM	16461
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.050		mg/Kg	1	11/20/2014 4:41:54 PM	16461
Toluene	ND	0.050		mg/Kg	1	11/20/2014 4:41:54 PM	16461
Ethylbenzene	ND	0.050		mg/Kg	1	11/20/2014 4:41:54 PM	16461
Xylenes, Total	ND	0.10		mg/Kg	1	11/20/2014 4:41:54 PM	16461
Surr: 4-Bromofluorobenzene	105	80-120		%REC	1	11/20/2014 4:41:54 PM	16461
<b>MERCURY, TCLP</b>							Analyst: <b>MMD</b>
Mercury	ND	0.020		mg/L	1	11/24/2014 2:06:21 PM	16533
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	5.0		mg/L	1	11/22/2014 11:51:40 AM	16515
Barium	ND	100		mg/L	1	11/22/2014 11:51:40 AM	16515
Cadmium	ND	1.0		mg/L	1	11/22/2014 11:51:40 AM	16515
Chromium	ND	5.0		mg/L	1	11/22/2014 11:51:40 AM	16515
Lead	ND	5.0		mg/L	1	11/22/2014 11:51:40 AM	16515
Selenium	ND	1.0		mg/L	1	11/22/2014 11:51:40 AM	16515
Silver	ND	5.0		mg/L	1	11/22/2014 11:51:40 AM	16515
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	11/25/2014 1:20:06 PM	16529
3+4-Methylphenol	ND	200		mg/L	1	11/25/2014 1:20:06 PM	16529
Phenol	ND	200		mg/L	1	11/25/2014 1:20:06 PM	16529
2,4-Dinitrotoluene	ND	0.13		mg/L	1	11/24/2014 4:52:15 PM	16529
Hexachlorobenzene	ND	0.13		mg/L	1	11/24/2014 4:52:15 PM	16529
Hexachlorobutadiene	ND	0.50		mg/L	1	11/24/2014 4:52:15 PM	16529
Hexachloroethane	ND	3.0		mg/L	1	11/24/2014 4:52:15 PM	16529
Nitrobenzene	ND	2.0		mg/L	1	11/24/2014 4:52:15 PM	16529
Pentachlorophenol	ND	100		mg/L	1	11/25/2014 1:20:06 PM	16529
Pyridine	ND	5.0		mg/L	1	11/24/2014 4:52:15 PM	16529
2,4,5-Trichlorophenol	ND	400		mg/L	1	11/25/2014 1:20:06 PM	16529
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	11/25/2014 1:20:06 PM	16529
Cresols, Total	ND	200		mg/L	1	11/25/2014 1:20:06 PM	16529
Surr: 2-Fluorophenol	40.2	25-105		%REC	1	11/25/2014 1:20:06 PM	16529
Surr: Phenol-d5	29.8	22.3-70.3		%REC	1	11/25/2014 1:20:06 PM	16529

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1411729

Date Reported: 11/25/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Box Area Location #C

**Project:** Excavation Underground Box Area

**Collection Date:** 11/17/2014 12:25:00 PM

**Lab ID:** 1411729-003

**Matrix:** SOIL

**Received Date:** 11/18/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
Surr: 2,4,6-Tribromophenol	60.1	30.4-134		%REC	1	11/25/2014 1:20:06 PM	16529
Surr: Nitrobenzene-d5	89.5	54.8-128		%REC	1	11/24/2014 4:52:15 PM	16529
Surr: 2-Fluorobiphenyl	89.3	53.3-122		%REC	1	11/24/2014 4:52:15 PM	16529
Surr: 4-Terphenyl-d14	90.2	51.8-133		%REC	1	11/24/2014 4:52:15 PM	16529
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Benzene	ND	0.50		ppm	10	11/22/2014 3:33:49 AM	16461
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	11/22/2014 3:33:49 AM	16461
2-Butanone	ND	200		ppm	10	11/22/2014 3:33:49 AM	16461
Carbon tetrachloride	ND	0.50		ppm	10	11/22/2014 3:33:49 AM	16461
Chlorobenzene	ND	100		ppm	10	11/22/2014 3:33:49 AM	16461
Chloroform	ND	6.0		ppm	10	11/22/2014 3:33:49 AM	16461
1,4-Dichlorobenzene	ND	7.5		ppm	10	11/22/2014 3:33:49 AM	16461
1,1-Dichloroethene	ND	0.70		ppm	10	11/22/2014 3:33:49 AM	16461
Tetrachloroethene (PCE)	ND	0.70		ppm	10	11/22/2014 3:33:49 AM	16461
Trichloroethene (TCE)	ND	0.50		ppm	10	11/22/2014 3:33:49 AM	16461
Vinyl chloride	ND	0.20		ppm	10	11/22/2014 3:33:49 AM	16461
Surr: 1,2-Dichloroethane-d4	95.4	70-130		%REC	10	11/22/2014 3:33:49 AM	16461
Surr: 4-Bromofluorobenzene	115	70-130		%REC	10	11/22/2014 3:33:49 AM	16461
Surr: Dibromofluoromethane	82.4	70-130		%REC	10	11/22/2014 3:33:49 AM	16461
Surr: Toluene-d8	99.4	70-130		%REC	10	11/22/2014 3:33:49 AM	16461
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>BCN</b>
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	11/24/2014	16463

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 6 of 20
	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	
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1411729

Date Reported: 11/25/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Box Area Location #D

**Project:** Excavation Underground Box Area

**Collection Date:** 11/17/2014 12:35:00 PM

**Lab ID:** 1411729-004

**Matrix:** SOIL

**Received Date:** 11/18/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	170	10		mg/Kg	1	11/20/2014 4:16:49 PM	16454
Surr: DNOP	84.0	63.5-128		%REC	1	11/20/2014 4:16:49 PM	16454
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	1000	50		mg/Kg	10	11/20/2014 9:57:28 PM	16461
Surr: BFB	147	80-120	S	%REC	10	11/20/2014 9:57:28 PM	16461
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	3.5	0.50		mg/Kg	10	11/20/2014 9:57:28 PM	16461
Toluene	15	0.50		mg/Kg	10	11/20/2014 9:57:28 PM	16461
Ethylbenzene	3.2	0.50		mg/Kg	10	11/20/2014 9:57:28 PM	16461
Xylenes, Total	24	1.0		mg/Kg	10	11/20/2014 9:57:28 PM	16461
Surr: 4-Bromofluorobenzene	112	80-120		%REC	10	11/20/2014 9:57:28 PM	16461
<b>MERCURY, TCLP</b>							Analyst: <b>MMD</b>
Mercury	ND	0.020		mg/L	1	11/24/2014 2:11:55 PM	16533
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	5.0		mg/L	1	11/22/2014 11:52:55 AM	16515
Barium	ND	100		mg/L	1	11/22/2014 11:52:55 AM	16515
Cadmium	ND	1.0		mg/L	1	11/22/2014 11:52:55 AM	16515
Chromium	ND	5.0		mg/L	1	11/22/2014 11:52:55 AM	16515
Lead	ND	5.0		mg/L	1	11/22/2014 11:52:55 AM	16515
Selenium	ND	1.0		mg/L	1	11/22/2014 11:52:55 AM	16515
Silver	ND	5.0		mg/L	1	11/22/2014 11:52:55 AM	16515
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	11/24/2014 5:19:28 PM	16529
3+4-Methylphenol	ND	200		mg/L	1	11/24/2014 5:19:28 PM	16529
Phenol	ND	200		mg/L	1	11/24/2014 5:19:28 PM	16529
2,4-Dinitrotoluene	ND	0.13		mg/L	1	11/24/2014 5:19:28 PM	16529
Hexachlorobenzene	ND	0.13		mg/L	1	11/24/2014 5:19:28 PM	16529
Hexachlorobutadiene	ND	0.50		mg/L	1	11/24/2014 5:19:28 PM	16529
Hexachloroethane	ND	3.0		mg/L	1	11/24/2014 5:19:28 PM	16529
Nitrobenzene	ND	2.0		mg/L	1	11/24/2014 5:19:28 PM	16529
Pentachlorophenol	ND	100		mg/L	1	11/24/2014 5:19:28 PM	16529
Pyridine	ND	5.0		mg/L	1	11/24/2014 5:19:28 PM	16529
2,4,5-Trichlorophenol	ND	400		mg/L	1	11/24/2014 5:19:28 PM	16529
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	11/24/2014 5:19:28 PM	16529
Cresols, Total	ND	200		mg/L	1	11/24/2014 5:19:28 PM	16529
Surr: 2-Fluorophenol	73.0	25-105		%REC	1	11/24/2014 5:19:28 PM	16529
Surr: Phenol-d5	68.4	22.3-70.3		%REC	1	11/24/2014 5:19:28 PM	16529

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1411729

Date Reported: 11/25/2014

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: Box Area Location #D

Project: Excavation Underground Box Area

Collection Date: 11/17/2014 12:35:00 PM

Lab ID: 1411729-004

Matrix: SOIL

Received Date: 11/18/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C TCLP</b>							Analyst: DAM
Surr: 2,4,6-Tribromophenol	94.2	30.4-134		%REC	1	11/24/2014 5:19:28 PM	16529
Surr: Nitrobenzene-d5	90.2	54.8-128		%REC	1	11/24/2014 5:19:28 PM	16529
Surr: 2-Fluorobiphenyl	78.8	53.3-122		%REC	1	11/24/2014 5:19:28 PM	16529
Surr: 4-Terphenyl-d14	84.0	51.8-133		%REC	1	11/24/2014 5:19:28 PM	16529
<b>VOLATILES BY 8260B/1311</b>							Analyst: cadg
Benzene	ND	0.50		mg/L	1	11/22/2014 2:13:36 AM	16505
2-Butanone	ND	200		mg/L	1	11/22/2014 2:13:36 AM	16505
Carbon Tetrachloride	ND	0.50		mg/L	1	11/22/2014 2:13:36 AM	16505
Chlorobenzene	ND	100		mg/L	1	11/22/2014 2:13:36 AM	16505
Chloroform	ND	6.0		mg/L	1	11/22/2014 2:13:36 AM	16505
1,4-Dichlorobenzene	ND	7.5		mg/L	1	11/22/2014 2:13:36 AM	16505
1,2-Dichloroethane (EDC)	ND	0.50		mg/L	1	11/22/2014 2:13:36 AM	16505
1,1-Dichloroethene	ND	0.70		mg/L	1	11/22/2014 2:13:36 AM	16505
Hexachlorobutadiene	ND	0.50		mg/L	1	11/22/2014 2:13:36 AM	16505
Tetrachloroethene (PCE)	ND	0.70		mg/L	1	11/22/2014 2:13:36 AM	16505
Trichloroethene (TCE)	ND	0.50		mg/L	1	11/22/2014 2:13:36 AM	16505
Vinyl chloride	ND	0.20		mg/L	1	11/22/2014 2:13:36 AM	16505
Surr: 1,2-Dichloroethane-d4	101	70-130		%REC	1	11/22/2014 2:13:36 AM	16505
Surr: 4-Bromofluorobenzene	103	70-130		%REC	1	11/22/2014 2:13:36 AM	16505
Surr: Dibromofluoromethane	96.7	70-130		%REC	1	11/22/2014 2:13:36 AM	16505
Surr: Toluene-d8	99.8	70-130		%REC	1	11/22/2014 2:13:36 AM	16505
<b>EPA METHOD 418.1: TPH</b>							Analyst: BCN
Petroleum Hydrocarbons, TR	380	20		mg/Kg	1	11/24/2014	16463

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 8 of 20
	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	
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2.	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

# Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com  
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 141120033  
**Project Name:** 1411729

## Analytical Results Report

**Sample Number** 141120033-001 **Sampling Date** 11/17/2014 **Date/Time Received** 11/20/2014 12:45 PM  
**Client Sample ID** 1411729-001B / BOX AREA LOCATION #A **Sampling Time** 1:45 PM  
**Matrix** Soil **Sample Location**  
**Comments**

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	1	11/24/2014	CRW	SW846 CH7	
Ignitability	Negative			11/24/2014	JWC	EPA 1030	
pH	7.81	ph Units		11/21/2014	KJS	EPA 9045	
Reactive sulfide	37.1	mg/kg	12.4	11/24/2014	HSW	SW846 CH7	

**Sample Number** 141120033-002 **Sampling Date** 11/17/2014 **Date/Time Received** 11/20/2014 12:45 PM  
**Client Sample ID** 1411729-002B / BOX AREA LOCATION #B **Sampling Time** 12:00 PM  
**Matrix** Soil **Sample Location**  
**Comments**

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	1	11/24/2014	CRW	SW846 CH7	
Ignitability	Negative			11/24/2014	JWC	EPA 1030	
pH	7.52	ph Units		11/21/2014	KJS	EPA 9045	
Reactive sulfide	34.0	mg/kg	12.2	11/24/2014	HSW	SW846 CH7	

**Sample Number** 141120033-003 **Sampling Date** 11/17/2014 **Date/Time Received** 11/20/2014 12:45 PM  
**Client Sample ID** 1411729-003B / BOX AREA LOCATION #C **Sampling Time** 12:25 PM  
**Matrix** Soil **Sample Location**  
**Comments**

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	1	11/24/2014	CRW	SW846 CH7	
Ignitability	Negative			11/24/2014	JWC	EPA 1030	
pH	9.08	ph Units		11/21/2014	KJS	EPA 9045	
Reactive sulfide	19.8	mg/kg	12.4	11/24/2014	HSW	SW846 CH7	

# Anatek Labs, Inc.

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email [spokane@anateklabs.com](mailto:spokane@anateklabs.com)

**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 141120033  
**Project Name:** 1411729

## Analytical Results Report

<b>Sample Number</b>	141120033-004	<b>Sampling Date</b>	11/17/2014	<b>Date/Time Received</b>	11/20/2014 12:45 PM
<b>Client Sample ID</b>	1411729-004B / BOX AREA LOCATION #D			<b>Sampling Time</b>	12:35 PM
<b>Matrix</b>	Soil	<b>Sample Location</b>			
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	1	11/24/2014	CRW	SW846 CH7	
Ignitability	Negative			11/24/2014	JWC	EPA 1030	
pH	8.61	ph Units		11/21/2014	KJS	EPA 9045	
Reactive sulfide	26.7	mg/kg	12.2	11/24/2014	HSW	SW846 CH7	

Authorized Signature

  
John Coddington, Lab Manager

MCL EPA's Maximum Contaminant Level  
ND Not Detected  
PQL Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.  
The results reported relate only to the samples indicated.  
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

# Anatek Labs, Inc.

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 141120033  
**Project Name:** 1411729

## Analytical Results Report Quality Control Data

### Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Reactive sulfide	0.180	mg/kg	0.2	90.0	80-120	11/24/2014	11/24/2014
Cyanide (reactive)	0.531	mg/kg	0.5	106.2	70-130	11/24/2014	11/24/2014

### Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
141120033-001	Reactive sulfide	37.1	56.8	mg/kg	24.7	79.8	70-130	11/24/2014	11/24/2014
141120033-001	Cyanide (reactive)	ND	10.4	mg/kg	12.3	84.6	70-130	11/24/2014	11/24/2014

### Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Cyanide (reactive)	10.1	mg/kg	12.3	82.1	2.9	0-25	11/24/2014	11/24/2014

### Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Cyanide (reactive)	ND	mg/Kg	1	11/24/2014	11/24/2014
Reactive sulfide	ND	mg/kg	10	11/24/2014	11/24/2014

AR Acceptable Range  
ND Not Detected  
PQL Practical Quantitation Limit  
RPD Relative Percentage Difference

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C595  
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1411729

25-Nov-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Box Area

Sample ID	MB-16463		SampType:	MBLK		TestCode:	EPA Method 418.1: TPH				
Client ID:	PBS		Batch ID:	16463		RunNo:	22737				
Prep Date:	11/19/2014		Analysis Date:	11/24/2014		SeqNo:	670894		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Petroleum Hydrocarbons, TR	ND	20									

Sample ID	LCS-16463		SampType: LCS		TestCode: EPA Method 418.1: TPH					
Client ID:	LCSS		Batch ID: 16463		RunNo: 22737					
Prep Date:	11/19/2014		Analysis Date: 11/24/2014		SeqNo: 670895		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	100	20	100.0	0	102	80	120			

Sample ID	LCSD-16463		SampType: LCSD		TestCode: EPA Method 418.1: TPH					
Client ID:	LCSS02		Batch ID: 16463		RunNo: 22737					
Prep Date:	11/19/2014		Analysis Date: 11/24/2014		SeqNo: 670896		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	100	20	100.0	0	100	80	120	1.50	20	

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1411729

25-Nov-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Box Area

Sample ID	MB-16454		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 16454		RunNo: 22625					
Prep Date:	11/19/2014		Analysis Date: 11/19/2014		SeqNo: 667375		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	7.4		10.00		73.6	63.5	128			

Sample ID	LCS-16454		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 16454		RunNo: 22625					
Prep Date:	11/19/2014		Analysis Date: 11/19/2014		SeqNo: 667464		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	87.8	68.6	130			
Surr: DNOP	4.2		5.000		83.4	63.5	128			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1411729

25-Nov-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Box Area

Sample ID	MB-16461		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 16461		RunNo: 22668					
Prep Date:	11/19/2014		Analysis Date: 11/20/2014		SeqNo: 668846		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	890		1000		89.1	80	120			

Sample ID	LCS-16461		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 16461		RunNo: 22668					
Prep Date:	11/19/2014		Analysis Date: 11/20/2014		SeqNo: 668849		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	91.8	65.8	139			
Surr: BFB	1000		1000		99.6	80	120			

Sample ID	1411729-003AMS		SampType: MS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	Box Area Location #		Batch ID: 16461		RunNo: 22668					
Prep Date:	11/19/2014		Analysis Date: 11/20/2014		SeqNo: 668853		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	24.90	3.230	78.7	71.8	132			
Surr: BFB	1000		996.0		104	80	120			

Sample ID	1411729-003AMSD		SampType:	MSD		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	Box Area Location #		Batch ID:	16461		RunNo:	22668				
Prep Date:	11/19/2014		Analysis Date:	11/20/2014		SeqNo:	668854		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	34	5.0	24.90	3.230	123	71.8	132	39.0	20	R	
Surr: BFB	1100		996.0		115	80	120	0	0		

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1411729

25-Nov-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Box Area

Sample ID	MB-16461		SampType: MBLK		TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBS		Batch ID: 16461		RunNo: 22668					
Prep Date:	11/19/2014		Analysis Date: 11/20/2014		SeqNo: 668869		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.97		1.000		97.2	80	120			

Sample ID	LCS-16461		SampType: LCS		TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSS		Batch ID: 16461		RunNo: 22668					
Prep Date:	11/19/2014		Analysis Date: 11/20/2014		SeqNo: 668870		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	104	80	120			
Toluene	1.0	0.050	1.000	0	103	80	120			
Ethylbenzene	1.0	0.050	1.000	0	104	80	120			
Xylenes, Total	3.1	0.10	3.000	0	102	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Sample ID	1411729-002AMS		SampType: MS		TestCode: EPA Method 8021B: Volatiles					
Client ID:	Box Area Location #		Batch ID: 16461		RunNo: 22668					
Prep Date:	11/19/2014		Analysis Date: 11/20/2014		SeqNo: 668873		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.6	0.25	0.9980	0.4538	113	77.4	142			
Toluene	9.9	0.25	0.9980	6.152	376	77	132			S
Ethylbenzene	3.5	0.25	0.9980	1.493	204	77.6	134			S
Xylenes, Total	20	0.50	2.994	10.82	311	77.4	132			S
Surr: 4-Bromofluorobenzene	5.9		4.990		118	80	120			

Sample ID	1411729-002AMSD		SampType: MSD		TestCode: EPA Method 8021B: Volatiles					
Client ID:	Box Area Location #		Batch ID: 16461		RunNo: 22668					
Prep Date:	11/19/2014		Analysis Date: 11/20/2014		SeqNo: 668874		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.6	0.25	0.9980	0.4538	118	77.4	142	3.49	20	
Toluene	6.0	0.25	0.9980	6.152	-12.2	77	132	48.6	20	RS
Ethylbenzene	2.8	0.25	0.9980	1.493	135	77.6	134	21.5	20	RS
Xylenes, Total	15	0.50	2.994	10.82	135	77.4	132	30.3	20	RS
Surr: 4-Bromofluorobenzene	5.7		4.990		115	80	120	0	0	

### Qualifiers:

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E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1411729

25-Nov-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Box Area

Sample ID	mb-16461		SampType: MBLK		TestCode: EPA Method 8260B: TCLP Compounds					
Client ID:	PBS		Batch ID: 16461		RunNo: 22714					
Prep Date:	11/19/2014		Analysis Date: 11/22/2014		SeqNo: 669932		Units: ppm			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
2-Butanone	ND	20								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	10								
Chloroform	ND	0.60								
1,4-Dichlorobenzene	ND	0.75								
1,1-Dichloroethene	ND	0.070								
Tetrachloroethene (PCE)	ND	0.070								
Trichloroethene (TCE)	ND	0.050								
Vinyl chloride	ND	0.020								
Surr: 1,2-Dichloroethane-d4	0.49		0.5000		97.8	70	130			
Surr: 4-Bromofluorobenzene	0.51		0.5000		103	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		99.1	70	130			
Surr: Toluene-d8	0.46		0.5000		92.3	70	130			

Sample ID	lcs-16461		SampType: LCS		TestCode: EPA Method 8260B: TCLP Compounds					
Client ID:	LCSS		Batch ID: 16461		RunNo: 22714					
Prep Date:	11/19/2014		Analysis Date: 11/22/2014		SeqNo: 669933		Units: ppm			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	101	70	130			
Chlorobenzene	0.93	0.10	1.000	0	92.9	70	130			
1,1-Dichloroethene	0.93	0.070	1.000	0	93.4	60.5	160			
Trichloroethene (TCE)	0.84	0.050	1.000	0	83.8	58.8	139			
Surr: 1,2-Dichloroethane-d4	0.51		0.5000		102	70	130			
Surr: 4-Bromofluorobenzene	0.51		0.5000		101	70	130			
Surr: Dibromofluoromethane	0.52		0.5000		104	70	130			
Surr: Toluene-d8	0.47		0.5000		93.7	70	130			

### Qualifiers:

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E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1411729

25-Nov-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Box Area

Sample ID	<b>mb-16505</b>		SampType:	<b>MBLK</b>		TestCode:	<b>Volatiles by 8260B/1311</b>			
Client ID:	<b>PBS</b>		Batch ID:	<b>16505</b>		RunNo:	<b>22714</b>			
Prep Date:	<b>11/20/2014</b>		Analysis Date:	<b>11/21/2014</b>		SeqNo:	<b>669969</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.50								
2-Butanone	ND	200								
Carbon Tetrachloride	ND	0.50								
Chlorobenzene	ND	100								
Chloroform	ND	6.0								
1,4-Dichlorobenzene	ND	7.5								
1,2-Dichloroethane (EDC)	ND	0.50								
1,1-Dichloroethene	ND	0.70								
Hexachlorobutadiene	ND	0.50								
Tetrachloroethene (PCE)	ND	0.70								
Trichloroethene (TCE)	ND	0.50								
Vinyl chloride	ND	0.20								
Surr: 1,2-Dichloroethane-d4	0.20		0.2000		99.2	70	130			
Surr: 4-Bromofluorobenzene	0.26		0.2000		128	70	130			
Surr: Dibromofluoromethane	0.19		0.2000		96.4	70	130			
Surr: Toluene-d8	0.21		0.2000		106	70	130			

Sample ID	<b>lcs-16505</b>		SampType:	<b>LCS</b>		TestCode:	<b>Volatiles by 8260B/1311</b>			
Client ID:	<b>LCSS</b>		Batch ID:	<b>16505</b>		RunNo:	<b>22714</b>			
Prep Date:	<b>11/20/2014</b>		Analysis Date:	<b>11/21/2014</b>		SeqNo:	<b>669970</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.41	0.10	0.4000	0	102	51.1	171			
Chlorobenzene	0.37	0.10	0.4000	0	93.3	36.1	191			
1,1-Dichloroethene	0.36	0.10	0.4000	0	89.2	49.1	162			
Trichloroethene (TCE)	0.35	0.10	0.4000	0	86.4	41.2	166			
Surr: 1,2-Dichloroethane-d4	0.20		0.2000		98.8	70	130			
Surr: 4-Bromofluorobenzene	0.26		0.2000		129	70	130			
Surr: Dibromofluoromethane	0.18		0.2000		91.9	70	130			
Surr: Toluene-d8	0.21		0.2000		103	70	130			

Sample ID	<b>1411729-001ams</b>		SampType:	<b>MS</b>		TestCode:	<b>Volatiles by 8260B/1311</b>			
Client ID:	<b>Box Area Location #</b>		Batch ID:	<b>16505</b>		RunNo:	<b>22714</b>			
Prep Date:	<b>11/20/2014</b>		Analysis Date:	<b>11/21/2014</b>		SeqNo:	<b>669973</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.52	0.10	0.3995	0.1294	97.9	51.1	171			
Chlorobenzene	0.40	0.10	0.3995	0	100	36.1	191			
1,1-Dichloroethene	0.37	0.10	0.3995	0	91.5	49.1	162			
Trichloroethene (TCE)	0.36	0.10	0.3995	0	90.6	41.2	166			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1411729

25-Nov-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Box Area

Sample ID	1411729-001ams	SampType:	MS	TestCode:	Volatiles by 8260B/1311					
Client ID:	Box Area Location #	Batch ID:	16505	RunNo:	22714					
Prep Date:	11/20/2014	Analysis Date:	11/21/2014	SeqNo:	669973	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.20		0.1998		101	70	130			
Surr: 4-Bromofluorobenzene	0.17		0.1998		85.3	70	130			
Surr: Dibromofluoromethane	0.19		0.1998		93.4	70	130			
Surr: Toluene-d8	0.20		0.1998		102	70	130			

Sample ID	1411729-001amsd	SampType:	MSD		TestCode: Volatiles by 8260B/1311					
Client ID:	Box Area Location #	Batch ID:	16505		RunNo: 22714					
Prep Date:	11/20/2014	Analysis Date:	11/22/2014		SeqNo: 669974		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.50	0.10	0.3995	0.1294	91.9	51.1	171	4.75	20	
Chlorobenzene	0.39	0.10	0.3995	0	98.0	36.1	191	2.47	20	
1,1-Dichloroethene	0.33	0.10	0.3995	0	82.4	49.1	162	10.5	20	
Trichloroethene (TCE)	0.32	0.10	0.3995	0	79.9	41.2	166	12.6	20	
Surr: 1,2-Dichloroethane-d4	0.19		0.1998		94.4	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.16		0.1998		81.4	70	130	0	0	
Surr: Dibromofluoromethane	0.18		0.1998		88.7	70	130	0	0	
Surr: Toluene-d8	0.20		0.1998		101	70	130	0	0	

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1411729

25-Nov-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Box Area

Sample ID	mb-16529		SampType:	MBLK		TestCode:	EPA Method 8270C TCLP			
Client ID:	PBS		Batch ID:	16529		RunNo:	22768			
Prep Date:	11/23/2014		Analysis Date:	11/24/2014		SeqNo:	671898		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	ND	200								
3+4-Methylphenol	ND	200								
Phenol	ND	200								
2,4-Dinitrotoluene	ND	0.13								
Hexachlorobenzene	ND	0.13								
Hexachlorobutadiene	ND	0.50								
Hexachloroethane	ND	3.0								
Nitrobenzene	ND	2.0								
Pentachlorophenol	ND	100								
Pyridine	ND	5.0								
2,4,5-Trichlorophenol	ND	400								
2,4,6-Trichlorophenol	ND	2.0								
Cresols, Total	ND	200								
Surr: 2-Fluorophenol	0.17		0.2000		87.2	25	105			
Surr: Phenol-d5	0.18		0.2000		90.3	22.3	70.3			S
Surr: 2,4,6-Tribromophenol	0.19		0.2000		96.7	30.4	134			
Surr: Nitrobenzene-d5	0.092		0.1000		92.1	54.8	128			
Surr: 2-Fluorobiphenyl	0.089		0.1000		88.6	53.3	122			
Surr: 4-Terphenyl-d14	0.093		0.1000		93.1	51.8	133			

Sample ID	lcs-16529		SampType:	LCS		TestCode:	EPA Method 8270C TCLP			
Client ID:	LCSS		Batch ID:	16529		RunNo:	22768			
Prep Date:	11/23/2014		Analysis Date:	11/24/2014		SeqNo:	671901		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	0.073	0.010	0.1000	0	72.8	52.2	95.7			
3+4-Methylphenol	0.19	0.010	0.2000	0	97.0	52.4	142			
2,4-Dinitrotoluene	0.070	0.010	0.1000	0	70.0	43.4	110			
Hexachlorobenzene	0.081	0.010	0.1000	0	80.7	43.6	88.4			
Hexachlorobutadiene	0.069	0.010	0.1000	0	69.2	38.6	88.4			
Hexachloroethane	0.075	0.010	0.1000	0	74.5	45.7	83.6			
Nitrobenzene	0.068	0.010	0.1000	0	67.6	51.9	112			
Pentachlorophenol	0.065	0.010	0.1000	0	65.4	15.2	81.5			
Pyridine	0.072	0.010	0.1000	0	72.0	11.2	95.1			
2,4,5-Trichlorophenol	0.085	0.010	0.1000	0	84.7	46.9	110			
2,4,6-Trichlorophenol	0.082	0.010	0.1000	0	81.8	36.1	111			
Cresols, Total	0.27	0.010	0.3000	0	88.9	30	136			
Surr: 2-Fluorophenol	0.14		0.2000		69.3	25	105			
Surr: Phenol-d5	0.14		0.2000		72.1	22.3	70.3			S

### 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	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1411729

25-Nov-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Box Area

Sample ID	lcs-16529		SampType:	LCS		TestCode:	EPA Method 8270C TCLP			
Client ID:	LCSS		Batch ID:	16529		RunNo:	22768			
Prep Date:	11/23/2014		Analysis Date:	11/24/2014		SeqNo:	671901		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	0.17		0.2000		84.2	30.4	134			
Surr: Nitrobenzene-d5	0.077		0.1000		77.0	54.8	128			
Surr: 2-Fluorobiphenyl	0.072		0.1000		72.2	53.3	122			
Surr: 4-Terphenyl-d14	0.083		0.1000		82.9	51.8	133			

Sample ID	1411729-001Ams		SampType:	MS		TestCode:	EPA Method 8270C TCLP			
Client ID:	Box Area Location #		Batch ID:	16529		RunNo:	22768			
Prep Date:	11/23/2014		Analysis Date:	11/24/2014		SeqNo:	671920		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	0.073	0.010	0.1000	0	72.9	43.1	114			
3+4-Methylphenol	0.19	0.010	0.2000	0	93.5	37.8	128			
2,4-Dinitrotoluene	0.069	0.010	0.1000	0	69.3	36.5	125			
Hexachlorobenzene	0.089	0.010	0.1000	0	89.0	41.4	108			
Hexachlorobutadiene	0.064	0.010	0.1000	0	64.2	30.4	101			
Hexachloroethane	0.069	0.010	0.1000	0	68.7	37.3	115			
Nitrobenzene	0.070	0.010	0.1000	0	69.8	40.2	132			
Pentachlorophenol	0.031	0.010	0.1000	0	31.1	8.72	103			
Pyridine	0.063	0.010	0.1000	0	62.8	9.36	106			
2,4,5-Trichlorophenol	0.080	0.010	0.1000	0	79.8	16.5	123			
2,4,6-Trichlorophenol	0.069	0.010	0.1000	0	69.1	11.3	117			
Cresols, Total	0.26	0.010	0.3000	0	86.7	23.2	151			
Surr: 2-Fluorophenol	0.10		0.2000		52.1	25	105			
Surr: Phenol-d5	0.11		0.2000		54.7	22.3	70.3			
Surr: 2,4,6-Tribromophenol	0.14		0.2000		71.8	30.4	134			
Surr: Nitrobenzene-d5	0.072		0.1000		71.6	54.8	128			
Surr: 2-Fluorobiphenyl	0.068		0.1000		67.5	53.3	122			
Surr: 4-Terphenyl-d14	0.078		0.1000		78.5	51.8	133			

Sample ID	1411729-001Amsd		SampType:	MSD		TestCode:	EPA Method 8270C TCLP			
Client ID:	Box Area Location #		Batch ID:	16529		RunNo:	22768			
Prep Date:	11/23/2014		Analysis Date:	11/24/2014		SeqNo:	671925		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	0.076	0.010	0.1000	0	75.6	43.1	114	3.64	28.4	
3+4-Methylphenol	0.20	0.010	0.2000	0	99.2	37.8	128	5.84	29.4	
2,4-Dinitrotoluene	0.074	0.010	0.1000	0	74.1	36.5	125	6.75	24.7	
Hexachlorobenzene	0.093	0.010	0.1000	0	93.3	41.4	108	4.74	20	
Hexachlorobutadiene	0.067	0.010	0.1000	0	67.2	30.4	101	4.63	29	
Hexachloroethane	0.071	0.010	0.1000	0	70.5	37.3	115	2.59	25.2	

### 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      | ND Not Detected at the Reporting Limit               |
| O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |
| R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
| S Spike Recovery outside accepted recovery limits |  |



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1411729

25-Nov-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Box Area

Sample ID	1411729-001Amsd	SampType: MSD			TestCode: EPA Method 8270C TCLP					
Client ID:	Box Area Location #	Batch ID: 16529			RunNo: 22768					
Prep Date:	11/23/2014	Analysis Date: 11/24/2014			SeqNo: 671925		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrobenzene	0.070	0.010	0.1000	0	69.6	40.2	132	0.258	26.9	
Pentachlorophenol	0.049	0.010	0.1000	0	48.6	8.72	103	43.8	59.2	
Pyridine	0.066	0.010	0.1000	0	66.2	9.36	106	5.21	48	
2,4,5-Trichlorophenol	0.087	0.010	0.1000	0	87.1	16.5	123	8.75	70.8	
2,4,6-Trichlorophenol	0.074	0.010	0.1000	0	74.5	11.3	117	7.49	78	
Cresols, Total	0.27	0.010	0.3000	0	91.3	23.2	151	5.23	30.8	
Surr: 2-Fluorophenol	0.11		0.2000		56.1	25	105	0	0	
Surr: Phenol-d5	0.11		0.2000		57.2	22.3	70.3	0	0	
Surr: 2,4,6-Tribromophenol	0.18		0.2000		88.4	30.4	134	0	0	
Surr: Nitrobenzene-d5	0.074		0.1000		74.3	54.8	128	0	0	
Surr: 2-Fluorobiphenyl	0.072		0.1000		71.6	53.3	122	0	0	
Surr: 4-Terphenyl-d14	0.091		0.1000		91.0	51.8	133	0	0	

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1411729

25-Nov-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Box Area

Sample ID	MB-16533		SampType: MBLK		TestCode: MERCURY, TCLP					
Client ID:	PBW		Batch ID: 16533		RunNo: 22751					
Prep Date:	11/24/2014		Analysis Date: 11/24/2014		SeqNo: 671290		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020								

Sample ID	LCS-16533		SampType: LCS		TestCode: MERCURY, TCLP					
Client ID:	LCSW		Batch ID: 16533		RunNo: 22751					
Prep Date:	11/24/2014		Analysis Date: 11/24/2014		SeqNo: 671291		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020	0.005000	0	110	80	120			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1411729

25-Nov-14

Client: Western Refining Southwest, Gallup

Project: Excavation Underground Box Area

Sample ID	MB-16515		SampType: MBLK		TestCode: EPA Method 6010B: TCLP Metals					
Client ID:	PBW		Batch ID: 16515		RunNo: 22718					
Prep Date:	11/21/2014		Analysis Date: 11/22/2014		SeqNo: 670181		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	5.0								
Barium	ND	100								
Cadmium	ND	1.0								
Chromium	ND	5.0								
Lead	ND	5.0								
Selenium	ND	1.0								
Silver	ND	5.0								

Sample ID	LCS-16515			SampType:	LCS		TestCode:	EPA Method 6010B: TCLP Metals			
Client ID:	LCSW			Batch ID:	16515		RunNo:	22718			
Prep Date:	11/21/2014			Analysis Date:	11/22/2014		SeqNo:	670182		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Arsenic	ND	5.0	0.5000	0	106	80	120				
Barium	ND	100	0.5000	0	98.3	80	120				
Cadmium	ND	1.0	0.5000	0	103	80	120				
Chromium	ND	5.0	0.5000	0	97.5	80	120				
Lead	ND	5.0	0.5000	0	95.1	80	120				
Selenium	ND	1.0	0.5000	0	106	80	120				
Silver	ND	5.0	0.1000	0	104	80	120				

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# Sample Log-In Check List

Client Name: **Western Refining Gallup**

Work Order Number: **1411729**

RcptNo: **1**

Received by/date:

*[Signature]* 11/18/14

Logged By: **Ashley Gallegos**

11/18/2014 4:15:00 PM

*[Signature]*

Completed By: **Ashley Gallegos**

11/18/2014 4:54:09 PM

*[Signature]*

Reviewed By:

*CS* 11/19/14

## Chain of Custody

1. Custody seals intact on sample bottles? Yes ☒ No ☐ Not Present ☐
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

## Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0° C Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels? Yes ☒ No ☐  
(Note discrepancies on chain of custody)
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met? Yes ☒ No ☐  
(If no, notify customer for authorization.)

# of preserved  
bottles checked  
for pH:

(<2 or >12 unless noted)

Adjusted? \_\_\_\_\_

Checked by: \_\_\_\_\_

## Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

## 18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Not Present			



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**Appendix A-6**  
**Hall Environmental Analysis Laboratory, Inc. -**  
**April 24, 2015**  
**Analytical Report No. 1504856**

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Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

April 24, 2015

Thurman B. Larsen  
Western Refining Southwest, Gallup  
Rt. 3 Box 7  
Gallup, NM 87301  
TEL: (505) 722-0258  
FAX (505) 722-0210

RE: Excavation of Underground Tank Area-Confirmation Samples      OrderNo.: 1504856

Dear Thurman B. Larsen:

Hall Environmental Analysis Laboratory received 4 sample(s) on 4/20/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1504856

Date Reported: 4/24/2015

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Box Area Location #A

**Project:** Excavation of Underground Tank Area-C

**Collection Date:** 4/17/2015 11:45:00 AM

**Lab ID:** 1504856-001

**Matrix:** SLUDGE

**Received Date:** 4/20/2015 4:25:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>KJH</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	4/22/2015 6:51:39 PM	18786
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/22/2015 6:51:39 PM	18786
Surr: DNOP	94.0	57.9-140		%REC	1	4/22/2015 6:51:39 PM	18786
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/22/2015 4:03:10 PM	18803
Surr: BFB	93.8	80-120		%REC	1	4/22/2015 4:03:10 PM	18803
<b>EPA METHOD 7471: MERCURY</b>							Analyst: <b>MED</b>
Mercury	ND	0.032		mg/Kg	1	4/24/2015 9:48:55 AM	18856
<b>EPA METHOD 6010B: SOIL METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	5.1		mg/Kg	2	4/22/2015 9:48:19 AM	18813
Barium	280	0.21		mg/Kg	2	4/22/2015 9:48:19 AM	18813
Cadmium	ND	0.21		mg/Kg	2	4/22/2015 9:48:19 AM	18813
Chromium	15	0.62		mg/Kg	2	4/22/2015 9:48:19 AM	18813
Lead	5.2	0.51		mg/Kg	2	4/22/2015 9:48:19 AM	18813
Selenium	ND	5.1		mg/Kg	2	4/22/2015 9:48:19 AM	18813
Silver	ND	0.51		mg/Kg	2	4/22/2015 9:48:19 AM	18813
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: <b>cadg</b>
Benzene	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
Toluene	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
Ethylbenzene	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
Methyl tert-butyl ether (MTBE)	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
1,2,4-Trimethylbenzene	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
1,3,5-Trimethylbenzene	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
1,2-Dichloroethane (EDC)	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
1,2-Dibromoethane (EDB)	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
Naphthalene	ND	0.096		mg/Kg	1	4/23/2015 5:24:23 AM	18803
1-Methylnaphthalene	ND	0.19		mg/Kg	1	4/23/2015 5:24:23 AM	18803
2-Methylnaphthalene	ND	0.19		mg/Kg	1	4/23/2015 5:24:23 AM	18803
Acetone	ND	0.72		mg/Kg	1	4/23/2015 5:24:23 AM	18803
Bromobenzene	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
Bromodichloromethane	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
Bromoform	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
Bromomethane	ND	0.14		mg/Kg	1	4/23/2015 5:24:23 AM	18803
2-Butanone	ND	0.48		mg/Kg	1	4/23/2015 5:24:23 AM	18803
Carbon disulfide	ND	0.48		mg/Kg	1	4/23/2015 5:24:23 AM	18803
Carbon tetrachloride	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
Chlorobenzene	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1504856

Date Reported: 4/24/2015

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: Box Area Location #A

Project: Excavation of Underground Tank Area-C

Collection Date: 4/17/2015 11:45:00 AM

Lab ID: 1504856-001

Matrix: SLUDGE

Received Date: 4/20/2015 4:25:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: cadg
Chloroethane	ND	0.096		mg/Kg	1	4/23/2015 5:24:23 AM	18803
Chloroform	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
Chloromethane	ND	0.14		mg/Kg	1	4/23/2015 5:24:23 AM	18803
2-Chlorotoluene	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
4-Chlorotoluene	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
cis-1,2-DCE	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
cis-1,3-Dichloropropene	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
1,2-Dibromo-3-chloropropane	ND	0.096		mg/Kg	1	4/23/2015 5:24:23 AM	18803
Dibromochloromethane	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
Dibromomethane	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
1,2-Dichlorobenzene	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
1,3-Dichlorobenzene	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
1,4-Dichlorobenzene	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
Dichlorodifluoromethane	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
1,1-Dichloroethane	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
1,1-Dichloroethene	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
1,2-Dichloropropane	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
1,3-Dichloropropane	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
2,2-Dichloropropane	ND	0.096		mg/Kg	1	4/23/2015 5:24:23 AM	18803
1,1-Dichloropropene	ND	0.096		mg/Kg	1	4/23/2015 5:24:23 AM	18803
Hexachlorobutadiene	ND	0.096		mg/Kg	1	4/23/2015 5:24:23 AM	18803
2-Hexanone	ND	0.48		mg/Kg	1	4/23/2015 5:24:23 AM	18803
Isopropylbenzene	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
4-Isopropyltoluene	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
4-Methyl-2-pentanone	ND	0.48		mg/Kg	1	4/23/2015 5:24:23 AM	18803
Methylene chloride	ND	0.14		mg/Kg	1	4/23/2015 5:24:23 AM	18803
n-Butylbenzene	ND	0.14		mg/Kg	1	4/23/2015 5:24:23 AM	18803
n-Propylbenzene	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
sec-Butylbenzene	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
Styrene	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
tert-Butylbenzene	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
1,1,1,2-Tetrachloroethane	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
1,1,2,2-Tetrachloroethane	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
Tetrachloroethene (PCE)	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
trans-1,2-DCE	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
trans-1,3-Dichloropropene	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
1,2,3-Trichlorobenzene	ND	0.096		mg/Kg	1	4/23/2015 5:24:23 AM	18803
1,2,4-Trichlorobenzene	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
1,1,1-Trichloroethane	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 2 of 19
	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	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1504856**

Date Reported: **4/24/2015**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Box Area Location #A

**Project:** Excavation of Underground Tank Area-C

**Collection Date:** 4/17/2015 11:45:00 AM

**Lab ID:** 1504856-001

**Matrix:** SLUDGE

**Received Date:** 4/20/2015 4:25:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: <b>cadg</b>
1,1,2-Trichloroethane	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
Trichloroethene (TCE)	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
Trichlorofluoromethane	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
1,2,3-Trichloropropane	ND	0.096		mg/Kg	1	4/23/2015 5:24:23 AM	18803
Vinyl chloride	ND	0.048		mg/Kg	1	4/23/2015 5:24:23 AM	18803
Xylenes, Total	ND	0.096		mg/Kg	1	4/23/2015 5:24:23 AM	18803
Surr: Dibromofluoromethane	109	70-130		%REC	1	4/23/2015 5:24:23 AM	18803
Surr: 1,2-Dichloroethane-d4	106	70-130		%REC	1	4/23/2015 5:24:23 AM	18803
Surr: Toluene-d8	93.6	70-130		%REC	1	4/23/2015 5:24:23 AM	18803
Surr: 4-Bromofluorobenzene	99.0	70-130		%REC	1	4/23/2015 5:24:23 AM	18803

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1504856**

Date Reported: **4/24/2015**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Box Area Location #B

**Project:** Excavation of Underground Tank Area-C

**Collection Date:** 4/17/2015 12:00:00 PM

**Lab ID:** 1504856-002

**Matrix:** SLUDGE

**Received Date:** 4/20/2015 4:25:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>KJH</b>
Diesel Range Organics (DRO)	36	9.8		mg/Kg	1	4/22/2015 7:56:16 PM	18786
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/22/2015 7:56:16 PM	18786
Surr: DNOP	100	57.9-140		%REC	1	4/22/2015 7:56:16 PM	18786
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/22/2015 11:13:40 PM	18803
Surr: BFB	86.7	80-120		%REC	1	4/22/2015 11:13:40 PM	18803
<b>EPA METHOD 7471: MERCURY</b>							Analyst: <b>MED</b>
Mercury	ND	0.034		mg/Kg	1	4/24/2015 9:50:40 AM	18856
<b>EPA METHOD 6010B: SOIL METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	5.0		mg/Kg	2	4/22/2015 9:49:33 AM	18813
Barium	300	0.20		mg/Kg	2	4/22/2015 9:49:33 AM	18813
Cadmium	ND	0.20		mg/Kg	2	4/22/2015 9:49:33 AM	18813
Chromium	11	0.60		mg/Kg	2	4/22/2015 9:49:33 AM	18813
Lead	5.2	0.50		mg/Kg	2	4/22/2015 9:49:33 AM	18813
Selenium	ND	5.0		mg/Kg	2	4/22/2015 9:49:33 AM	18813
Silver	ND	0.50		mg/Kg	2	4/22/2015 9:49:33 AM	18813
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: <b>cadg</b>
Benzene	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
Toluene	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
Ethylbenzene	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
Methyl tert-butyl ether (MTBE)	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
1,2,4-Trimethylbenzene	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
1,3,5-Trimethylbenzene	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
1,2-Dichloroethane (EDC)	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
1,2-Dibromoethane (EDB)	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
Naphthalene	ND	0.095		mg/Kg	1	4/23/2015 5:53:11 AM	18803
1-Methylnaphthalene	ND	0.19		mg/Kg	1	4/23/2015 5:53:11 AM	18803
2-Methylnaphthalene	ND	0.19		mg/Kg	1	4/23/2015 5:53:11 AM	18803
Acetone	ND	0.71		mg/Kg	1	4/23/2015 5:53:11 AM	18803
Bromobenzene	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
Bromodichloromethane	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
Bromoform	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
Bromomethane	ND	0.14		mg/Kg	1	4/23/2015 5:53:11 AM	18803
2-Butanone	ND	0.48		mg/Kg	1	4/23/2015 5:53:11 AM	18803
Carbon disulfide	ND	0.48		mg/Kg	1	4/23/2015 5:53:11 AM	18803
Carbon tetrachloride	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
Chlorobenzene	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1504856

Date Reported: 4/24/2015

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Box Area Location #B

**Project:** Excavation of Underground Tank Area-C

**Collection Date:** 4/17/2015 12:00:00 PM

**Lab ID:** 1504856-002

**Matrix:** SLUDGE

**Received Date:** 4/20/2015 4:25:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Chloroethane	ND	0.095		mg/Kg	1	4/23/2015 5:53:11 AM	18803
Chloroform	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
Chloromethane	ND	0.14		mg/Kg	1	4/23/2015 5:53:11 AM	18803
2-Chlorotoluene	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
4-Chlorotoluene	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
cis-1,2-DCE	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
cis-1,3-Dichloropropene	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
1,2-Dibromo-3-chloropropane	ND	0.095		mg/Kg	1	4/23/2015 5:53:11 AM	18803
Dibromochloromethane	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
Dibromomethane	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
1,2-Dichlorobenzene	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
1,3-Dichlorobenzene	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
1,4-Dichlorobenzene	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
Dichlorodifluoromethane	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
1,1-Dichloroethane	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
1,1-Dichloroethene	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
1,2-Dichloropropane	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
1,3-Dichloropropane	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
2,2-Dichloropropane	ND	0.095		mg/Kg	1	4/23/2015 5:53:11 AM	18803
1,1-Dichloropropene	ND	0.095		mg/Kg	1	4/23/2015 5:53:11 AM	18803
Hexachlorobutadiene	ND	0.095		mg/Kg	1	4/23/2015 5:53:11 AM	18803
2-Hexanone	ND	0.48		mg/Kg	1	4/23/2015 5:53:11 AM	18803
Isopropylbenzene	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
4-Isopropyltoluene	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
4-Methyl-2-pentanone	ND	0.48		mg/Kg	1	4/23/2015 5:53:11 AM	18803
Methylene chloride	ND	0.14		mg/Kg	1	4/23/2015 5:53:11 AM	18803
n-Butylbenzene	ND	0.14		mg/Kg	1	4/23/2015 5:53:11 AM	18803
n-Propylbenzene	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
sec-Butylbenzene	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
Styrene	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
tert-Butylbenzene	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
1,1,1,2-Tetrachloroethane	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
1,1,2,2-Tetrachloroethane	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
Tetrachloroethene (PCE)	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
trans-1,2-DCE	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
trans-1,3-Dichloropropene	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
1,2,3-Trichlorobenzene	ND	0.095		mg/Kg	1	4/23/2015 5:53:11 AM	18803
1,2,4-Trichlorobenzene	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
1,1,1-Trichloroethane	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1504856**

Date Reported: **4/24/2015**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Box Area Location #B

**Project:** Excavation of Underground Tank Area-C

**Collection Date:** 4/17/2015 12:00:00 PM

**Lab ID:** 1504856-002

**Matrix:** SLUDGE

**Received Date:** 4/20/2015 4:25:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: <b>cadg</b>
1,1,2-Trichloroethane	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
Trichloroethene (TCE)	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
Trichlorofluoromethane	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
1,2,3-Trichloropropane	ND	0.095		mg/Kg	1	4/23/2015 5:53:11 AM	18803
Vinyl chloride	ND	0.048		mg/Kg	1	4/23/2015 5:53:11 AM	18803
Xylenes, Total	ND	0.095		mg/Kg	1	4/23/2015 5:53:11 AM	18803
Surr: Dibromofluoromethane	104	70-130		%REC	1	4/23/2015 5:53:11 AM	18803
Surr: 1,2-Dichloroethane-d4	97.7	70-130		%REC	1	4/23/2015 5:53:11 AM	18803
Surr: Toluene-d8	91.0	70-130		%REC	1	4/23/2015 5:53:11 AM	18803
Surr: 4-Bromofluorobenzene	96.7	70-130		%REC	1	4/23/2015 5:53:11 AM	18803

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1504856

Date Reported: 4/24/2015

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Box Area Location #C

**Project:** Excavation of Underground Tank Area-C

**Collection Date:** 4/17/2015 12:25:00 PM

**Lab ID:** 1504856-003

**Matrix:** SLUDGE

**Received Date:** 4/20/2015 4:25:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>KJH</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/22/2015 8:17:35 PM	18786
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/22/2015 8:17:35 PM	18786
Surr: DNOP	112	57.9-140		%REC	1	4/22/2015 8:17:35 PM	18786
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/22/2015 11:42:18 PM	18803
Surr: BFB	88.7	80-120		%REC	1	4/22/2015 11:42:18 PM	18803
<b>EPA METHOD 7471: MERCURY</b>							Analyst: <b>MED</b>
Mercury	ND	0.032		mg/Kg	1	4/24/2015 9:52:27 AM	18856
<b>EPA METHOD 6010B: SOIL METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	4.9		mg/Kg	2	4/22/2015 9:50:47 AM	18813
Barium	240	0.20		mg/Kg	2	4/22/2015 9:50:47 AM	18813
Cadmium	ND	0.20		mg/Kg	2	4/22/2015 9:50:47 AM	18813
Chromium	13	0.59		mg/Kg	2	4/22/2015 9:50:47 AM	18813
Lead	5.6	0.49		mg/Kg	2	4/22/2015 9:50:47 AM	18813
Selenium	ND	4.9		mg/Kg	2	4/22/2015 9:50:47 AM	18813
Silver	ND	0.49		mg/Kg	2	4/22/2015 9:50:47 AM	18813
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: <b>cadg</b>
Benzene	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
Toluene	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
Ethylbenzene	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
Methyl tert-butyl ether (MTBE)	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
1,2,4-Trimethylbenzene	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
1,3,5-Trimethylbenzene	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
1,2-Dichloroethane (EDC)	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
1,2-Dibromoethane (EDB)	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
Naphthalene	ND	0.099		mg/Kg	1	4/23/2015 6:21:59 AM	18803
1-Methylnaphthalene	ND	0.20		mg/Kg	1	4/23/2015 6:21:59 AM	18803
2-Methylnaphthalene	ND	0.20		mg/Kg	1	4/23/2015 6:21:59 AM	18803
Acetone	ND	0.74		mg/Kg	1	4/23/2015 6:21:59 AM	18803
Bromobenzene	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
Bromodichloromethane	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
Bromoform	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
Bromomethane	ND	0.15		mg/Kg	1	4/23/2015 6:21:59 AM	18803
2-Butanone	ND	0.49		mg/Kg	1	4/23/2015 6:21:59 AM	18803
Carbon disulfide	ND	0.49		mg/Kg	1	4/23/2015 6:21:59 AM	18803
Carbon tetrachloride	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
Chlorobenzene	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 7 of 19
	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	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1504856

Date Reported: 4/24/2015

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Box Area Location #C

**Project:** Excavation of Underground Tank Area-C

**Collection Date:** 4/17/2015 12:25:00 PM

**Lab ID:** 1504856-003

**Matrix:** SLUDGE

**Received Date:** 4/20/2015 4:25:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Chloroethane	ND	0.099		mg/Kg	1	4/23/2015 6:21:59 AM	18803
Chloroform	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
Chloromethane	ND	0.15		mg/Kg	1	4/23/2015 6:21:59 AM	18803
2-Chlorotoluene	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
4-Chlorotoluene	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
cis-1,2-DCE	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
cis-1,3-Dichloropropene	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
1,2-Dibromo-3-chloropropane	ND	0.099		mg/Kg	1	4/23/2015 6:21:59 AM	18803
Dibromochloromethane	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
Dibromomethane	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
1,2-Dichlorobenzene	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
1,3-Dichlorobenzene	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
1,4-Dichlorobenzene	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
Dichlorodifluoromethane	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
1,1-Dichloroethane	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
1,1-Dichloroethene	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
1,2-Dichloropropane	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
1,3-Dichloropropane	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
2,2-Dichloropropane	ND	0.099		mg/Kg	1	4/23/2015 6:21:59 AM	18803
1,1-Dichloropropene	ND	0.099		mg/Kg	1	4/23/2015 6:21:59 AM	18803
Hexachlorobutadiene	ND	0.099		mg/Kg	1	4/23/2015 6:21:59 AM	18803
2-Hexanone	ND	0.49		mg/Kg	1	4/23/2015 6:21:59 AM	18803
Isopropylbenzene	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
4-Isopropyltoluene	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
4-Methyl-2-pentanone	ND	0.49		mg/Kg	1	4/23/2015 6:21:59 AM	18803
Methylene chloride	ND	0.15		mg/Kg	1	4/23/2015 6:21:59 AM	18803
n-Butylbenzene	ND	0.15		mg/Kg	1	4/23/2015 6:21:59 AM	18803
n-Propylbenzene	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
sec-Butylbenzene	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
Styrene	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
tert-Butylbenzene	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
1,1,1,2-Tetrachloroethane	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
1,1,2,2-Tetrachloroethane	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
Tetrachloroethene (PCE)	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
trans-1,2-DCE	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
trans-1,3-Dichloropropene	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
1,2,3-Trichlorobenzene	ND	0.099		mg/Kg	1	4/23/2015 6:21:59 AM	18803
1,2,4-Trichlorobenzene	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
1,1,1-Trichloroethane	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 8 of 19
	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	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1504856**

Date Reported: **4/24/2015**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Box Area Location #C

**Project:** Excavation of Underground Tank Area-C

**Collection Date:** 4/17/2015 12:25:00 PM

**Lab ID:** 1504856-003

**Matrix:** SLUDGE

**Received Date:** 4/20/2015 4:25:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: <b>cadg</b>
1,1,2-Trichloroethane	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
Trichloroethene (TCE)	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
Trichlorofluoromethane	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
1,2,3-Trichloropropane	ND	0.099		mg/Kg	1	4/23/2015 6:21:59 AM	18803
Vinyl chloride	ND	0.049		mg/Kg	1	4/23/2015 6:21:59 AM	18803
Xylenes, Total	ND	0.099		mg/Kg	1	4/23/2015 6:21:59 AM	18803
Surr: Dibromofluoromethane	112	70-130		%REC	1	4/23/2015 6:21:59 AM	18803
Surr: 1,2-Dichloroethane-d4	103	70-130		%REC	1	4/23/2015 6:21:59 AM	18803
Surr: Toluene-d8	91.4	70-130		%REC	1	4/23/2015 6:21:59 AM	18803
Surr: 4-Bromofluorobenzene	97.2	70-130		%REC	1	4/23/2015 6:21:59 AM	18803

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 9 of 19
	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	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1504856

Date Reported: 4/24/2015

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Box Area Location #D

**Project:** Excavation of Underground Tank Area-C

**Collection Date:** 4/17/2015 12:35:00 PM

**Lab ID:** 1504856-004

**Matrix:** SLUDGE

**Received Date:** 4/20/2015 4:25:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>				Analyst: <b>KJH</b>			
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/22/2015 8:39:02 PM	18786
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/22/2015 8:39:02 PM	18786
Surr: DNOP	108	57.9-140		%REC	1	4/22/2015 8:39:02 PM	18786
<b>EPA METHOD 8015D: GASOLINE RANGE</b>				Analyst: <b>NSB</b>			
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/23/2015 12:10:57 AM	18803
Surr: BFB	88.4	80-120		%REC	1	4/23/2015 12:10:57 AM	18803
<b>EPA METHOD 7471: MERCURY</b>				Analyst: <b>MED</b>			
Mercury	ND	0.032		mg/Kg	1	4/24/2015 9:54:13 AM	18856
<b>EPA METHOD 6010B: SOIL METALS</b>				Analyst: <b>ELS</b>			
Arsenic	ND	2.5		mg/Kg	1	4/22/2015 9:30:48 AM	18813
Barium	320	0.20		mg/Kg	2	4/22/2015 9:52:00 AM	18813
Cadmium	ND	0.10		mg/Kg	1	4/22/2015 9:30:48 AM	18813
Chromium	10	0.30		mg/Kg	1	4/22/2015 9:30:48 AM	18813
Lead	4.4	0.25		mg/Kg	1	4/22/2015 9:30:48 AM	18813
Selenium	ND	2.5		mg/Kg	1	4/22/2015 9:30:48 AM	18813
Silver	ND	0.25		mg/Kg	1	4/22/2015 9:30:48 AM	18813
<b>EPA METHOD 8260B: VOLATILES</b>				Analyst: <b>cadg</b>			
Benzene	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
Toluene	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
Ethylbenzene	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
Methyl tert-butyl ether (MTBE)	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
1,2,4-Trimethylbenzene	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
1,3,5-Trimethylbenzene	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
1,2-Dichloroethane (EDC)	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
1,2-Dibromoethane (EDB)	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
Naphthalene	ND	0.094		mg/Kg	1	4/23/2015 6:50:49 AM	18803
1-Methylnaphthalene	ND	0.19		mg/Kg	1	4/23/2015 6:50:49 AM	18803
2-Methylnaphthalene	ND	0.19		mg/Kg	1	4/23/2015 6:50:49 AM	18803
Acetone	ND	0.71		mg/Kg	1	4/23/2015 6:50:49 AM	18803
Bromobenzene	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
Bromodichloromethane	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
Bromoform	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
Bromomethane	ND	0.14		mg/Kg	1	4/23/2015 6:50:49 AM	18803
2-Butanone	ND	0.47		mg/Kg	1	4/23/2015 6:50:49 AM	18803
Carbon disulfide	ND	0.47		mg/Kg	1	4/23/2015 6:50:49 AM	18803
Carbon tetrachloride	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
Chlorobenzene	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1504856

Date Reported: 4/24/2015

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Box Area Location #D

**Project:** Excavation of Underground Tank Area-C

**Collection Date:** 4/17/2015 12:35:00 PM

**Lab ID:** 1504856-004

**Matrix:** SLUDGE

**Received Date:** 4/20/2015 4:25:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Chloroethane	ND	0.094		mg/Kg	1	4/23/2015 6:50:49 AM	18803
Chloroform	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
Chloromethane	ND	0.14		mg/Kg	1	4/23/2015 6:50:49 AM	18803
2-Chlorotoluene	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
4-Chlorotoluene	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
cis-1,2-DCE	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
cis-1,3-Dichloropropene	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
1,2-Dibromo-3-chloropropane	ND	0.094		mg/Kg	1	4/23/2015 6:50:49 AM	18803
Dibromochloromethane	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
Dibromomethane	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
1,2-Dichlorobenzene	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
1,3-Dichlorobenzene	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
1,4-Dichlorobenzene	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
Dichlorodifluoromethane	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
1,1-Dichloroethane	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
1,1-Dichloroethene	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
1,2-Dichloropropane	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
1,3-Dichloropropane	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
2,2-Dichloropropane	ND	0.094		mg/Kg	1	4/23/2015 6:50:49 AM	18803
1,1-Dichloropropene	ND	0.094		mg/Kg	1	4/23/2015 6:50:49 AM	18803
Hexachlorobutadiene	ND	0.094		mg/Kg	1	4/23/2015 6:50:49 AM	18803
2-Hexanone	ND	0.47		mg/Kg	1	4/23/2015 6:50:49 AM	18803
Isopropylbenzene	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
4-Isopropyltoluene	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
4-Methyl-2-pentanone	ND	0.47		mg/Kg	1	4/23/2015 6:50:49 AM	18803
Methylene chloride	ND	0.14		mg/Kg	1	4/23/2015 6:50:49 AM	18803
n-Butylbenzene	ND	0.14		mg/Kg	1	4/23/2015 6:50:49 AM	18803
n-Propylbenzene	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
sec-Butylbenzene	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
Styrene	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
tert-Butylbenzene	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
1,1,1,2-Tetrachloroethane	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
1,1,2,2-Tetrachloroethane	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
Tetrachloroethene (PCE)	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
trans-1,2-DCE	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
trans-1,3-Dichloropropene	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
1,2,3-Trichlorobenzene	ND	0.094		mg/Kg	1	4/23/2015 6:50:49 AM	18803
1,2,4-Trichlorobenzene	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
1,1,1-Trichloroethane	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1504856**

Date Reported: **4/24/2015**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Box Area Location #D

**Project:** Excavation of Underground Tank Area-C

**Collection Date:** 4/17/2015 12:35:00 PM

**Lab ID:** 1504856-004

**Matrix:** SLUDGE

**Received Date:** 4/20/2015 4:25:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: <b>cadg</b>
1,1,2-Trichloroethane	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
Trichloroethene (TCE)	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
Trichlorofluoromethane	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
1,2,3-Trichloropropane	ND	0.094		mg/Kg	1	4/23/2015 6:50:49 AM	18803
Vinyl chloride	ND	0.047		mg/Kg	1	4/23/2015 6:50:49 AM	18803
Xylenes, Total	ND	0.094		mg/Kg	1	4/23/2015 6:50:49 AM	18803
Surr: Dibromofluoromethane	110	70-130		%REC	1	4/23/2015 6:50:49 AM	18803
Surr: 1,2-Dichloroethane-d4	106	70-130		%REC	1	4/23/2015 6:50:49 AM	18803
Surr: Toluene-d8	90.1	70-130		%REC	1	4/23/2015 6:50:49 AM	18803
Surr: 4-Bromofluorobenzene	97.9	70-130		%REC	1	4/23/2015 6:50:49 AM	18803

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 12 of 19
	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	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 150422033  
**Project Name:** 1504856

## Analytical Results Report

**Sample Number** 150422033-001 **Sampling Date** 4/17/2015 **Date/Time Received** 4/22/2015 11:05 AM  
**Client Sample ID** 1504856-001C / BOX AREA LOCATION #A **Sampling Time** 11:45 AM  
**Matrix** Solid **Sample Location**  
**Comments**

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	0.247	4/23/2015	CRW	SW846 CH7	
Ignitability	Negative			4/24/2015	JWC	EPA 1030	
pH	8.80	ph Units		4/23/2015	KJS	EPA 9045	
Reactive sulfide	24.7	mg/kg	24.7	4/23/2015	KJS	SW846 CH7	
%moisture	3.7	Percent		4/22/2015	KJS	%moisture	

**Sample Number** 150422033-002 **Sampling Date** 4/17/2015 **Date/Time Received** 4/22/2015 11:05 AM  
**Client Sample ID** 1504856-002C / BOX AREA LOCATION #B **Sampling Time** 12:00 PM  
**Matrix** Solid **Sample Location**  
**Comments**

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	0.247	4/23/2015	CRW	SW846 CH7	
Ignitability	Negative			4/24/2015	JWC	EPA 1030	
pH	9.54	ph Units		4/23/2015	KJS	EPA 9045	
Reactive sulfide	29.6	mg/kg	24.7	4/23/2015	KJS	SW846 CH7	
%moisture	15	Percent		4/22/2015	KJS	%moisture	

**Sample Number** 150422033-003 **Sampling Date** 4/17/2015 **Date/Time Received** 4/22/2015 11:05 AM  
**Client Sample ID** 1504856-003C / BOX AREA LOCATION #C **Sampling Time** 12:25 PM  
**Matrix** Solid **Sample Location**  
**Comments**

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	0.281	mg/Kg	0.247	4/23/2015	CRW	SW846 CH7	
Ignitability	Negative			4/24/2015	JWC	EPA 1030	
pH	9.56	ph Units		4/23/2015	KJS	EPA 9045	
Reactive sulfide	29.6	mg/kg	24.7	4/23/2015	KJS	SW846 CH7	
%moisture	5.4	Percent		4/22/2015	KJS	%moisture	

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 150422033  
**Project Name:** 1504856

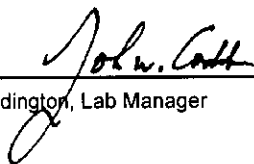
## Analytical Results Report

<b>Sample Number</b>	150422033-004	<b>Sampling Date</b>	4/17/2015	<b>Date/Time Received</b>	4/22/2015 11:05 AM
<b>Client Sample ID</b>	1504856-004C / BOX AREA LOCATION #D			<b>Sampling Time</b>	12:35 PM
<b>Matrix</b>	Solid	<b>Sample Location</b>			
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	0.234	4/23/2015	CRW	SW846 CH7	
Ignitability	Negative			4/24/2015	JWC	EPA 1030	
pH	8.92	ph Units		4/23/2015	KJS	EPA 9045	
Reactive sulfide	28.1	mg/kg	23.4	4/23/2015	KJS	SW846 CH7	
%moisture	18.2	Percent		4/22/2015	KJS	%moisture	

Authorized Signature

  
John Coddington, Lab Manager

MCL EPA's Maximum Contaminant Level  
ND Not Detected  
PQL Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.  
The results reported relate only to the samples indicated.  
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 150422033  
**Project Name:** 1504856

## Analytical Results Report Quality Control Data

### Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Reactive sulfide	0.2	mg/kg	0.2	100.0	70-130	4/23/2015	4/23/2015
Cyanide (reactive)	0.487	mg/kg	0.5	97.4	90-110	4/23/2015	4/23/2015

### Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
150422033-002	Reactive sulfide	29.6	69.2	mg/kg	49.4	80.2	70-130	4/23/2015	4/23/2015
150422033-001	Cyanide (reactive)	ND	11.5	mg/kg	12.35	93.1	80-120	4/23/2015	4/23/2015

### Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Cyanide (reactive)	11.3	mg/kg	12.35	91.5	1.8	0-25	4/23/2015	4/23/2015

### Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Cyanide (reactive)	ND	mg/Kg	1	4/23/2015	4/23/2015
Reactive sulfide	ND	mg/kg	1	4/23/2015	4/23/2015

AR Acceptable Range  
ND Not Detected  
PQL Practical Quantitation Limit  
RPD Relative Percentage Difference

### Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C595  
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1504856

24-Apr-15

**Client:** Western Refining Southwest, Gallup  
**Project:** Excavation of Underground Tank Area-Confirm

Sample ID	LCS-18786		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 18786		RunNo: 25664					
Prep Date:	4/20/2015		Analysis Date: 4/22/2015		SeqNo: 761215		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	95.9	67.8	130			
Surr: DNOP	5.3		5.000		107	57.9	140			

Sample ID	1504856-001AMS		SampType: MS		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	Box Area Location #		Batch ID: 18786		RunNo: 25664					
Prep Date:	4/20/2015		Analysis Date: 4/22/2015		SeqNo: 761217		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	65	9.8	49.07	6.495	119	29.2	176			
Surr: DNOP	5.6		4.907		115	57.9	140			

Sample ID	1504856-001AMSD		SampType: MSD		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	Box Area Location #		Batch ID: 18786		RunNo: 25664					
Prep Date:	4/20/2015		Analysis Date: 4/22/2015		SeqNo: 761218		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	9.9	49.31	6.495	95.1	29.2	176	19.3	23	
Surr: DNOP	4.7		4.931		95.5	57.9	140	0	0	

Sample ID	MB-18786		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 18786		RunNo: 25664					
Prep Date:	4/20/2015		Analysis Date: 4/22/2015		SeqNo: 761222		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.8		10.00		87.6	57.9	140			

Sample ID	MB-18847		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 18847		RunNo: 25692					
Prep Date:	4/23/2015		Analysis Date: 4/23/2015		SeqNo: 762321		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	7.8		10.00		77.8	57.9	140			

### 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      | ND Not Detected at the Reporting Limit               |
| O RSD is greater than RSDlimit                    | P Sample pH Not In Range                             |
| R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
| S Spike Recovery outside accepted recovery limits |  |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1504856

24-Apr-15

**Client:** Western Refining Southwest, Gallup  
**Project:** Excavation of Underground Tank Area-Confirm

Sample ID	MB-18803		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 18803		RunNo: 25665					
Prep Date:	4/21/2015		Analysis Date: 4/22/2015		SeqNo: 761162		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	850		1000		85.0	80	120			

Sample ID	LCS-18803		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 18803		RunNo: 25665					
Prep Date:	4/21/2015		Analysis Date: 4/22/2015		SeqNo: 761163		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	99.6	64	130			
Surr: BFB	940		1000		94.4	80	120			

Sample ID	1504856-001AMS		SampType: MS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	Box Area Location #		Batch ID: 18803		RunNo: 25665					
Prep Date:	4/21/2015		Analysis Date: 4/22/2015		SeqNo: 761165		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	4.8	24.08	2.089	103	47.9	144			
Surr: BFB	940		963.4		97.2	80	120			

Sample ID	1504856-001AMSD		SampType:	MSD		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	Box Area Location #		Batch ID:	18803		RunNo:	25665				
Prep Date:	4/21/2015		Analysis Date:	4/22/2015		SeqNo:	761166		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	28	4.8	24.11	2.089	109	47.9	144	5.36	29.9		
Surr: BFB	930		964.3		96.2	80	120	0	0		

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH Not In Range  
RL Reporting Detection Limit



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1504856

24-Apr-15

**Client:** Western Refining Southwest, Gallup**Project:** Excavation of Underground Tank Area-Confirm

Sample ID	mb-18803	SampType:	MBLK	TestCode:	EPA Method 8260B: Volatiles					
Client ID:	PBS	Batch ID:	18803	RunNo:	25687					
Prep Date:	4/21/2015	Analysis Date:	4/23/2015	SeqNo:	761249	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH Not In Range  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1504856

24-Apr-15

**Client:** Western Refining Southwest, Gallup  
**Project:** Excavation of Underground Tank Area-Confirm

Sample ID	<b>mb-18803</b>		SampType:	<b>MBLK</b>		TestCode:	<b>EPA Method 8260B: Volatiles</b>			
Client ID:	<b>PBS</b>		Batch ID:	<b>18803</b>		RunNo:	<b>25687</b>			
Prep Date:	<b>4/21/2015</b>		Analysis Date:	<b>4/23/2015</b>		SeqNo:	<b>761249</b>		Units: <b>mg/Kg</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.55		0.5000		110	70	130			
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		104	70	130			
Surr: Toluene-d8	0.44		0.5000		87.8	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		96.3	70	130			

Sample ID	<b>lcs-18803</b>		SampType:	<b>LCS</b>		TestCode:	<b>EPA Method 8260B: Volatiles</b>			
Client ID:	<b>LCSS</b>		Batch ID:	<b>18803</b>		RunNo:	<b>25687</b>			
Prep Date:	<b>4/21/2015</b>		Analysis Date:	<b>4/23/2015</b>		SeqNo:	<b>761250</b>		Units: <b>mg/Kg</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	1.000	0	106	70	130			
Toluene	0.87	0.050	1.000	0	87.3	70	130			
Chlorobenzene	0.98	0.050	1.000	0	97.9	70	130			

### 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	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1504856

24-Apr-15

Client: Western Refining Southwest, Gallup

Project: Excavation of Underground Tank Area-Confirm

Sample ID	Ics-18803		SampType: LCS		TestCode: EPA Method 8260B: Volatiles					
Client ID:	LCSS		Batch ID: 18803		RunNo: 25687					
Prep Date:	4/21/2015		Analysis Date: 4/23/2015		SeqNo: 761250		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.3	0.050	1.000	0	126	60.6	134			
Trichloroethene (TCE)	0.88	0.050	1.000	0	88.4	70	130			
Surr: Dibromofluoromethane	0.54		0.5000		107	70	130			
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		104	70	130			
Surr: Toluene-d8	0.44		0.5000		87.6	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		96.8	70	130			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH Not In Range  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1504856

24-Apr-15

**Client:** Western Refining Southwest, Gallup  
**Project:** Excavation of Underground Tank Area-Confirm

Sample ID	MB-18856	SampType:	MBLK	TestCode:	EPA Method 7471: Mercury					
Client ID:	PBS	Batch ID:	18856	RunNo:	25719					
Prep Date:	4/23/2015	Analysis Date:	4/24/2015	SeqNo:	762496	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	LCS-18856	SampType:	LCS	TestCode:	EPA Method 7471: Mercury					
Client ID:	LCSS	Batch ID:	18856	RunNo:	25719					
Prep Date:	4/23/2015	Analysis Date:	4/24/2015	SeqNo:	762497	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.18	0.033	0.1667	0	108	80	120			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH Not In Range  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1504856

24-Apr-15

**Client:** Western Refining Southwest, Gallup  
**Project:** Excavation of Underground Tank Area-Confirm

Sample ID	<b>MB-18813</b>		SampType:	<b>MBLK</b>		TestCode:	<b>EPA Method 6010B: Soil Metals</b>			
Client ID:	<b>PBS</b>		Batch ID:	<b>18813</b>		RunNo:	<b>25662</b>			
Prep Date:	<b>4/21/2015</b>		Analysis Date:	<b>4/22/2015</b>		SeqNo:	<b>760566</b>		Units: <b>mg/Kg</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	2.5								
Barium	ND	0.10								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Lead	ND	0.25								
Selenium	ND	2.5								
Silver	ND	0.25								

Sample ID	<b>LCS-18813</b>		SampType:	<b>LCS</b>		TestCode:	<b>EPA Method 6010B: Soil Metals</b>			
Client ID:	<b>LCSS</b>		Batch ID:	<b>18813</b>		RunNo:	<b>25662</b>			
Prep Date:	<b>4/21/2015</b>		Analysis Date:	<b>4/22/2015</b>		SeqNo:	<b>760567</b>		Units: <b>mg/Kg</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	25	2.5	25.00	0	98.1	80	120			
Barium	25	0.10	25.00	0	98.7	80	120			
Cadmium	24	0.10	25.00	0	96.6	80	120			
Chromium	25	0.30	25.00	0	99.5	80	120			
Lead	25	0.25	25.00	0	99.0	80	120			
Selenium	25	2.5	25.00	0	98.6	80	120			
Silver	5.2	0.25	5.000	0	103	80	120			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH Not In Range  
RL Reporting Detection Limit



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: **Western Refining Gallup**

Work Order Number: **1504856**

RcptNo: 1

Received by/date:

CS

04/20/15

Logged By: **Ashley Gallegos**

4/20/2015 4:25:00 PM

AJ

Completed By: **Ashley Gallegos**

4/21/2015 8:59:58 AM

AJ

Reviewed By:

CS

04/21/15

### Chain of Custody

1. Custody seals intact on sample bottles? Yes ☒ No ☐ Not Present ☐  
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐  
3. How was the sample delivered? Courier

### Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐  
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐  
6. Sample(s) in proper container(s)? Yes ☒ No ☐  
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐  
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐  
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐  
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒  
11. Were any sample containers received broken? Yes ☐ No ☒  
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐ # of preserved bottles checked for pH:   
(<2 or >12 unless noted)  
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐ Adjusted?  
14. Is it clear what analyses were requested? Yes ☒ No ☐  
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐ Checked by:

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.6	Good	Yes			

# Chain-of-Custody Record

Client: Western - Refining

Mailing Address: 92 GIANT CROSSING ROAD

Gallup NM 87301

Phone #: 505 722 3833

email or Fax#: 505 863 0930

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

☐ Other \_\_\_\_\_

☐ EDD (Type) \_\_\_\_\_

Turn-Around Time:

☐ Standard ☒ Rush

Project Name: **Excavation of Underground Tank Area- Confirmation Samples**

Project #:

North of Bullet Tanks

Project Manager: Beck Larsen

Sampler: K. Sanchez (ACT)

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.6°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 (8021B)	BTEX + MTBE (8021B)	TPH 8015B (GRO/DRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH (8310 or 8270SIMS)	RCRA 8 Metals	Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )	8081 Pesticides / 8082 PCB's	8260B (VOA) Totals	RCI	Metals	Air Bubbles (Y or N)	
4/17/2015	11:45	Soil	Box Area Location # A	9 oz - 3	None	15048510 -001			X							X		X	X	
4/17/2015																				
	12:00	Soil	Box Area Location # B	9 oz - 3	None	-002			X							X		X	X	
4/17/2015																				
	12:25	Soil	Box Area Location # C	9 oz - 3	None	-003			X							X		X	X	
4/17/2015																				
	12:35	Soil	Box Area Location # D	9 oz - 3	None	-004			X							X		X	X	

4/17/2015 A Time: 13:00 Relinquished by: *[Signature]* Received by: *[Signature]* Date: 4-20-15 Time: 1300

4-20-15 Date: Time: Relinquished by: *[Signature]* Received by: *[Signature]* Date: 04/20/15 Time: 1625

Remarks: Confirmation Samples

*[Diagram: A rectangular area with points A, B, C, D. A horizontal line connects A and B, labeled 4'. A vertical line connects B and D, labeled 4'. A horizontal line connects C and D, labeled 4'. A vertical line connects A and C, labeled 4'. Arrows indicate the path from A to B to D to C to A.]*

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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## **Appendix B**

### **Photographs**

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Photo 1



JUNCTION BOX



Photo 2

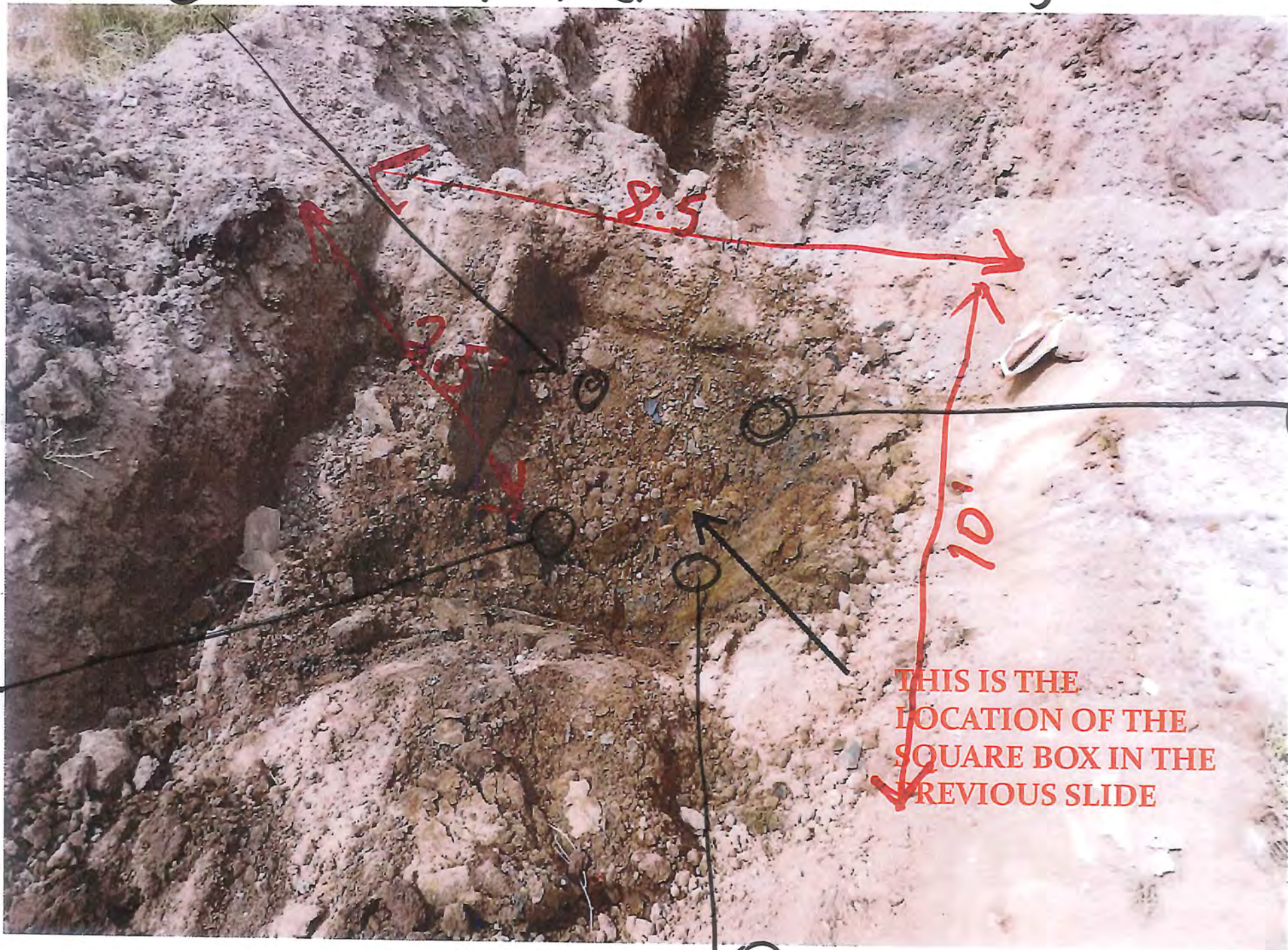


**THIS IS THE  
LOCATION OF THE  
SQUARE BOX IN THE  
PREVIOUS SLIDE**



①

BOX AREA



THIS IS THE  
LOCATION OF THE  
SQUARE BOX IN THE  
PREVIOUS SLIDE



Photo 3





TANK AREA

③

④

E  $\frac{S}{N}$  W





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## **Appendix C**

### **Waste Manifests**

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# NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

<b>NON-HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. NMDC00033211		Manifest Document No. 068714		2. Page 1 of 1	
3. Generator's Name and Mailing Address WESTERN REFINING SOUTHWEST GALLUP REFINING 1-40 exit 39 Route 1 Box 7 Jamestown, NM 87347							
4. Generator's Phone (505) 722 0258							
5. Transporter 1 Company Name Advanced Chemical Transport Inc. (SV)		6. US EPA ID Number CAR000070540		A. State Transporter's ID			
7. Transporter 2 Company Name		8. US EPA ID Number		B. Transporter 1 Phone 408-548-5050			
9. Designated Facility Name and Site Address RED ROCK LANDFILL 101 RED MESA BLUFF DRIVE THOREAU, NM 87323		10. US EPA ID Number SWM051740SP		C. State Transporter's ID			
				D. Transporter 2 Phone			
				E. State Facility's ID			
				F. Facility's Phone			
11. WASTE DESCRIPTION				Containers		13. Total Quantity	
				No. Type		14. Unit Wt./Vol.	
a. Non-RCRA/Non-DOT Regulated Material Solid (TPH SOIL)				1 1 CM		12.06 18	
b.							
c.							
d.							
G. Additional Descriptions for Materials Listed Above Project Number 60275 UST				H. Handling Codes for Wastes Listed Above			
15. Special Handling Instructions and Additional Information 24 hour emergency contact: CHEMTREC 800-424-9300 Bin # A20-024							
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.							
Printed/Typed Name Alvin Dorsey				Signature Alvin Dorsey		Date Month Day Year 12 02 14	
17. Transporter 1 Acknowledgement of Receipt of Materials				Signature		Date	
Printed/Typed Name John Grey				Signature		Month Day Year 12 02 14	
18. Transporter 2 Acknowledgement of Receipt of Materials				Signature		Date	
Printed/Typed Name				Signature		Month Day Year	
19. Discrepancy Indication Space							
20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.							
Printed/Typed Name				Signature		Date Month Day Year	



003475 WESTERN REFINERY  
PO BOX 62558  
PHOENIX AZ 85082-2558

SITE	TICKET	GRID		WEIGHMASTER	
02	058643			MARK	
DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
12/02/14	12/02/14	14:20	15:01		
REFERENCE		ORIGIN			
20820025		MCKINLEY COUNTY			

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
12.06 ✓	TON	P C S	45.00	542.70	0.00	542.70

N35.25.493 W108.06.585 EL7074

Tax	0.00
Scale Fee	0.00


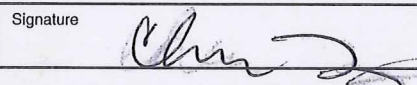
NET AMOUNT
542.70
TENDERED
CHANGE
CHECK NO.

WWW.TORRENDER.COM TO REORDER CONTACT CAROLINA SOFTWARE @ 1010 799.6767 SIGNATURE \_\_\_\_\_



# NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

<b>NON-HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. <b>NMD0000333211</b>		Manifest Document No. <b>068801</b>		2. Page 1 of 1	
3. Generator's Name and Mailing Address <b>WESTERN REFINING SOUTHWEST GALLUP REFINING 1-40 mile 39 Route 3 Box 7 Jamestown, NM 87347</b>							
4. Generator's Phone ( <b>505 722 0258</b> )							
5. Transporter 1 Company Name <b>Advanced Chemical Transport Inc. (SV)</b>		6. US EPA ID Number <b>CAR000070540</b>		A. State Transporter's ID			
				B. Transporter 1 Phone <b>408-548-5050</b>			
7. Transporter 2 Company Name		8. US EPA ID Number		C. State Transporter's ID			
				D. Transporter 2 Phone			
9. Designated Facility Name and Site Address <b>RED ROCK LANDFILL 101 RED MESA BLUFF DRIVE THOREAU, NM 87323</b>		10. US EPA ID Number <b>5WM051740SP</b>		E. State Facility's ID			
				F. Facility's Phone			
11. WASTE DESCRIPTION			Containers		13. Total Quantity	14. Unit Wt./Vol.	
			No.	Type			
a. <b>Non-RCRA/Non-DOT Regulated Material Solid (TPH SOIL)</b>			<b>11</b>	<b>CM</b>	<b>14.40</b>	<b>TON</b>	
b.					<b>18</b>		
c.							
d.							
G. Additional Descriptions for Materials Listed Above  <b>Project Number 60102</b> <b>LYENGH; TPH-RR-UGT WER-</b>				H. Handling Codes for Wastes Listed Above			
15. Special Handling Instructions and Additional Information <b>24 hour emergency contact: CHEMTREC 800-424-9300</b> <b>TANK Excavation</b> <b>BIN#20B-27</b>							
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.							
Printed/Typed Name <b>JANICE TSO</b>				Signature 		Date <b>11/04/14</b>	
17. Transporter 1 Acknowledgement of Receipt of Materials				Signature 		Date <b>11/14/14</b>	
Printed/Typed Name <b>Chris Lopez</b>				Signature		Date	
18. Transporter 2 Acknowledgement of Receipt of Materials				Signature		Date	
Printed/Typed Name				Signature		Date	
19. Discrepancy Indication Space							
20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.							
Printed/Typed Name				Signature		Date	
						Date	



# NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

<b>NON-HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. NMDC00033211		Manifest Document No. 068805		2. Page 1 of 1	
3. Generator's Name and Mailing Address WESTERN REFINING SOUTHWEST GALLUP REFINING 140 East 39 Route 3 Box 7 Jamestown, NM 87347							
4. Generator's Phone (505) 722 0258							
5. Transporter 1 Company Name Advanced Chemical Transport Inc. (SV)		6. US EPA ID Number CAR000070540		A. State Transporter's ID			
7. Transporter 2 Company Name		8. US EPA ID Number		B. Transporter 1 Phone 408-548-5050			
9. Designated Facility Name and Site Address RED ROCK LANDFILL 101 RED MESA BLUFF DRIVE THOREAU, NM 87323		10. US EPA ID Number SWM0517405P		C. State Transporter's ID			
				D. Transporter 2 Phone			
				E. State Facility's ID			
				F. Facility's Phone			
11. WASTE DESCRIPTION				Containers		13. Total Quantity	
				No. Type		14. Unit Wt./Vol.	
a. Non-RCRA/Non-DOT Regulated Material Solid (TPH SOIL)				1 CM 1		14.53 TON	
b.							
c.							
d.							
G. Additional Descriptions for Materials Listed Above Project Number 60103 UERG#; TPH-RR-UGT WER				H. Handling Codes for Wastes Listed Above			
15. Special Handling Instructions and Additional Information 24 hour emergency contact: CHEMTREC 800-424-9300 TANK Excavation BIN# H20 B-001							
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.							
Printed/Typed Name JANICE TSC				Signature [Signature]		Date 11/05/14	
17. Transporter 1 Acknowledgement of Receipt of Materials				Signature [Signature]		Date 11/5/14	
Printed/Typed Name Chris Lopez				Signature [Signature]		Date 11/5/14	
18. Transporter 2 Acknowledgement of Receipt of Materials				Signature		Date	
Printed/Typed Name				Signature		Date	
19. Discrepancy Indication Space							
20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.							
Printed/Typed Name				Signature		Date	
						Month Day Year	





101 Red Mesa Bluffs Drive  
PO Box 1330  
Thoreau, NM 87323

003475 WESTERN REFINERY  
PO BOX 62558  
PHOENIX AZ 85082-2558

SITE	TICKET	GRID	WEIGHMASTER			
02	057648		MARK			
DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF	
11/04/14	11/04/14	14:37	15:22			
REFERENCE		ORIGIN				
20820025		MCKINLEY COUNTY				

Scale 1 Gross Wt. 67160 LB  
Scale 1 Tare Wt. 38360 LB  
Net Weight 28800 LB

Inbound - Charge ticket

QTY	UNIT	DESCRIPTION	RATE	EXTENSION	FEES	TOTAL
14.40	TON P C S		45.00	648.00	0.00	648.00

Operating hours 8AM to 4:30PM Monday thru Friday. This is Tax

certify that this load does not contain any hazardous materials; medical waste or liquids of any type.

Driver was ON/OFF vehicle during weighing.

Comment ACT TRK#T51 D68804

GPS N35.25.493 W108.06.585 EL7074

Scale Fee 0.00

NET/AMOUNT
648.00
TENDERED
CHANGE
CHECK NO.

WW6T1 TO REORDER CONEX F CAROLINA SOFTWARE (910) 799-6767

SIGNATURE

*Chris*

101 Red Mesa Bluffs Drive  
PO Box 1330  
Thoreau, NM 87323

003475 WESTERN REFINERY  
PO BOX 62558  
PHOENIX AZ 85082-2558

SITE	TICKET	GRID	WEIGHMASTER			
02	057678		MARK			
DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF	
11/05/14	11/05/14	13:42	14:39			
REFERENCE		ORIGIN				
20820025		MCKINLEY COUNTY				

Scale 1 Gross Wt. 69000 LB  
Scale 1 Tare Wt. 39940 LB  
Net Weight 29060 LB

Inbound - Charge ticket

QTY	UNIT	DESCRIPTION	RATE	EXTENSION	FEES	TOTAL
14.53	TON P C S		45.00	653.85	0.00	653.85

Operating hours 8AM to 4:30PM Monday thru Friday. This is Tax

certify that this load does not contain any hazardous materials; medical waste or liquids of any type.

Driver was ON/OFF vehicle during weighing.

Comment ACT TRK#T51 D68805

GPS N35.25.493 W108.06.585 EL7074

Scale Fee 0.00

NET/AMOUNT
653.85
TENDERED
CHANGE
CHECK NO.

*Chris*

# NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

<b>NON-HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. NM000033211		Manifest Document No. <b>D68514</b>		2. Page 1 of 1	
3. Generator's Name and Mailing Address WESTERN INDIAN OIL COMPANY 1-40 mile 39 Route 1 Box 7 Jamestown, NM 87347 505 722 0258							
4. Generator's Phone ( )							
5. Transporter 1 Company Name Advanced Chemical Transport Inc. (SV)		6. US EPA ID Number NM000070540		A. State Transporter's ID			
7. Transporter 2 Company Name		8. US EPA ID Number		B. Transporter 1 Phone 800-548-5000			
9. Designated Facility Name and Site Address RED ROCK LANDFILL 101 RED MESA BLUFF DRIVE THOREAU, NM 87323		10. US EPA ID Number NM00517405P		C. State Transporter's ID			
				D. Transporter 2 Phone			
				E. State Facility's ID			
				F. Facility's Phone			
11. WASTE DESCRIPTION				Containers		13. Total Quantity	
				No. Type		14. Unit Wt./Vol.	
a. Non-RCRA/Non-DOT Regulated Material (Solid) (TPH SOIL)				1		CM	
						13.35	
b.						TON	
						13.126	
c.							
d.							
G. Additional Descriptions for Materials Listed Above Project Number 59817 Under ground Tank Excavation B-117 20B-027				H. Handling Codes for Wastes Listed Above			
15. Special Handling Instructions and Additional Information CHEMTREC 800-424-9300							
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.							
Printed/Typed Name <b>JANICE TSO</b>				Signature		Date Month Day Year <b>10/31/14</b>	
17. Transporter 1 Acknowledgement of Receipt of Materials				Signature		Date Month Day Year <b>10/31/14</b>	
Printed/Typed Name <b>Justin Gray</b>				Signature			
18. Transporter 2 Acknowledgement of Receipt of Materials				Signature		Date Month Day Year	
Printed/Typed Name				Signature			
19. Discrepancy Indication Space							
20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.							
Printed/Typed Name				Signature		Date Month Day Year	

2430 16/483 → 242524 = 14.8423

NON-HAZARDOUS WASTE

GENERATOR

TRANSPORTER

FACILITY



# NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

<b>NON-HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. NMD000033211		Manifest Document No. D68510		2. Page 1 of 1	
3. Generator's Name and Mailing Address WESTERN REFINING SOUTHWEST GALLIUP REFINING 1-40 and 39 Route 3 Box 7 Jamestown, NM 87347							
4. Generator's Phone ( ) 505 722 0258							
5. Transporter 1 Company Name Advanced Chemical Transport Inc. (SV)		6. US EPA ID Number CAR000070540		A. State Transporter's ID			
7. Transporter 2 Company Name		8. US EPA ID Number		B. Transporter 1 Phone 408-548-5050			
9. Designated Facility Name and Site Address RED ROCK LANDFILL 101 RED MESA BLUFF DRIVE THOREAU, NM 87323		10. US EPA ID Number SWM051740SP		C. State Transporter's ID			
				D. Transporter 2 Phone			
				E. State Facility's ID			
				F. Facility's Phone			
11. WASTE DESCRIPTION				Containers		13. Total Quantity	
				No. Type		14. Unit Wt./Vol.	
a. Non-RCRA/Non-DOT Regulated Material Solid (TPH SOIL)				1 CM		1.4.60 13.620 TON	
b.							
c.							
d.							
G. Additional Descriptions for Materials Listed Above Project Number 59505 UNDERGROUND TANK EXCAVATION Under ground Tank Excavation				H. Handling Codes for Wastes Listed Above			
15. Special Handling Instructions and Additional Information CHEMTREC 800-424-9300							
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.							
Printed/Typed Name JIMIE TRO				Signature		Date Month Day Year 10 31 14	
17. Transporter 1 Acknowledgement of Receipt of Materials				Signature		Date Month Day Year 10 31 14	
Printed/Typed Name Sue Gray				Signature		Date Month Day Year 10 31 14	
18. Transporter 2 Acknowledgement of Receipt of Materials				Signature		Date Month Day Year	
Printed/Typed Name				Signature		Date Month Day Year	
19. Discrepancy Indication Space							
20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.							
Printed/Typed Name				Signature		Date Month Day Year	

101 Red Mesa Bluffs Drive  
PO Box 1330  
Thoreau, NM 87323

003475 WESTERN REFINERY  
PO BOX 62558  
PHOENIX AZ 85082-2558

SITE	TICKET	GRID		WEIGHMASTER	
02	057521			Bren	
DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
10/31/14	10/31/14	16:55	16:55		
REFERENCE		ORIGIN			
2082025		MCKINLEY COUNTY			

Manual Gross Wt. 68480 LB  
Manual Tare Wt. 41780 LB  
Net Weight 26700 LB

Inbound - Charge ticket

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
✓ 13.35	TON	P C S	45.00	600.75	0.00	600.75

Operating hours 8AM to 4:30PM Monday thru Friday. This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type.

Driver was ON/OFF vehicle during weighing.

Comment ACTT#T89 D68510

GPS N35.25.493 W108.06.585 EL7074

TAX 0.00  
Scale Fee 0.00

NET AMOUNT
600.75
TENDERED
CHANGE
CHECK NO.

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101 Red Mesa Bluffs Drive  
PO Box 1330  
Thoreau, NM 87323

003475 WESTERN REFINERY  
PO BOX 62558  
PHOENIX AZ 85082-2558

SITE	TICKET	GRID		WEIGHMASTER	
02	057518			Bren	
DATE IN	DATE OUT	TIME IN	TIME OUT	VEHICLE	ROLL OFF
✓ 10/31/14	10/31/14	16:49	16:49		
REFERENCE		ORIGIN			
20820025		MCKINLEY COUNTY			

Manual Gross Wt. 72200 LB  
Manual Tare Wt. 43000 LB  
Net Weight 29200 LB

Inbound - Charge ticket

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	FEE	TOTAL
✓ 14.60	TON	P C S	45.00	657.00	0.00	657.00

Operating hours 8AM to 4:30PM Monday thru Friday. This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type.

Driver was ON/OFF vehicle during weighing.

Comment ACTTK#T89 D68514

GPS N35.25.493 W108.06585 EL7074

TAX 0.00  
Scale Fee 0.00

NET AMOUNT
657.00
TENDERED
CHANGE
CHECK NO.

WW6T1 TO REORDER CONTACT CAROLINA SOFTWARE (910) 799-6767 SIGNATURE

## Chavez, Carl J, EMNRD

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Tuesday, February 16, 2016 3:32 PM  
**To:** Larsen, Thurman (Thurman.Larsen@wnr.com)  
**Cc:** VanHorn, Kristen, NMENV; Smith, Cory, EMNRD  
**Subject:** Tank 714 Heavy Oil Release in Hot Oil Tank Farm

Beck:

Good afternoon. OCD has not received the C-141 for the release listed below? What is the status of this release?

Carl on 2/5 @ ~ 6:55 am received verbal notification from Beck Larsen of a >25 bbls release at ~ 4:56 am of heavy oil from Tank 714 within the diked Hot Oil Tank Farm. The cause is suspected to be related to a faulty tank overfill gauge malfunction. The FD is on location and the vacuum truck is on the way.

Thank you.

Carl J. Chavez, CHMM  
Environmental Engineer  
Oil Conservation Division- Environmental Bureau  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505  
Phone: (505) 476-3490  
Main Phone: (505) 476-3440  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: [www.emnrd.state.nm.us/ocd](http://www.emnrd.state.nm.us/ocd)

Why not prevent pollution, minimize waste, reduce operation costs, and move forward with the rest of the Nation? To see how, go to "Publications" and "Pollution Prevention" on the OCD Website.

## Chavez, Carl J, EMNRD

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Tuesday, January 26, 2016 7:40 AM  
**To:** Larsen, Thurman (Thurman.Larsen@wnr.com)  
**Cc:** VanHorn, Kristen, NMENV; Smith, Cory, EMNRD  
**Subject:** FW: C-141 Initial Report for South Carbon Canister Rupture Disk Incident on 010716  
**Attachments:** C141 Initial Carbon Canister Incident 010716.pdf

Beck:

Please sent a map with the release locations relative to surface structures, sample location(s), water/soil analytical data, and photos associated with the above subject release.

Thank you.

Carl J. Chavez, CHMM  
Environmental Engineer  
Oil Conservation Division- Environmental Bureau  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505  
Phone: (505) 476-3490  
Main Phone: (505) 476-3440  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)  
Website: [www.emnrd.state.nm.us/ocd](http://www.emnrd.state.nm.us/ocd)

Why not prevent pollution, minimize waste, reduce operation costs, and move forward with the rest of the Nation? To see how, go to "Publications" and "Pollution Prevention" on the OCD Website.

**From:** VanHorn, Kristen, NMENV  
**Sent:** Friday, January 22, 2016 3:48 PM  
**To:** Cobrain, Dave, NMENV <dave.cobrain@state.nm.us>; Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>; Dhawan, Neelam, NMENV <neelam.dhawan@state.nm.us>  
**Subject:** FW: C-141 Initial Report for South Carbon Canister Rupture Disk Incident on 010716

FYI...

**From:** Beck, Thurman  
**Sent:** Friday, January 22, 2016 3:48 PM  
**To:** VanHorn, Kristen, NMENV; Chavez, Carl J, EMNRD; Dhawan, Neelam, NMENV  
**Subject:** FW: C-141 Initial Report for South Carbon Canister Rupture Disk Incident on 010716

Dear Kristen and Cory,

The following is the initial C-141 Report for the incident that occurred on January 7, 2016.

Regards,

Beck Larsen  
Environmental Engineer



Western Refining Southwest (Gallup Refinery)  
92 Giant Crossing Road - New Mailing Address  
Gallup, NM 87301  
Office: (505) 722-0258  
cell: (505) 862-1749

## Chavez, Carl J, EMNRD

---

**From:** VanHorn, Kristen, NMENV  
**Sent:** Friday, January 22, 2016 3:48 PM  
**To:** Cobrain, Dave, NMENV; Chavez, Carl J, EMNRD; Dhawan, Neelam, NMENV  
**Subject:** FW: C-141 Initial Report for South Carbon Canister Rupture Disk Incident on 010716  
**Attachments:** C141 Initial Carbon Canister Incident 010716.pdf

FYI...

**From:** [REDACTED]  
**Sent:** Friday, January 22, 2016 3:48 PM  
**To:** [REDACTED]  
**Subject:** [REDACTED]

Dear Kristen and Cory,

The following is the initial C-141 Report for the incident that occurred on January 7, 2016.

Regards,

Beck Larsen  
Environmental Engineer  
Western Refining Southwest (Gallup Refinery)  
92 Giant Crossing Road - New Mailing Address  
Gallup, NM 87301  
Office: (505) 722-0258  
cell: (505) 862-1749

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in  
accordance with 19.15.29 NMAC.

**Release Notification and Corrective Action**

**OPERATOR**

☒ Initial Report ☐ Final Report

Name of Company: WESTERN REFINING	Contact: Beck Larsen	
Address: I-40 / EXIT 39, JAMESTOWN, NM 87347	Telephone No. (505) 722-0258	
Facility Name: WESTERN RENINING (GALLUP REFINERY)	Facility Type: Petroleum Refinery	
Surface Owner	Mineral Owner	API No.

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	28	15 N	15 W					MCKINLEY

Latitude 35° 029' 024" Longitude 108° 024' 024"

**NATURE OF RELEASE**

Type of Release: Untreated Wastewater	Volume of Release: 40-46 bbls (1680 - 1710 gal) (untreated wastewater)	Volume Recovered: 32-34 bbl (1342-1428 gal) (untreated wastewater)
Source of Release: Slop Oil Transfer Line from T-107/108 to API	Date and Hour of Occurrence 1/7/2016; 2300 hrs	Date and Hour of Discovery 1/7/2016; 2320 hrs
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? OCD (Brandon Powell, Msg) / NMED HWB (Kristen Van Horn, Msg)	
By Whom? Cheryl Johnson	Date and Hour: 1/8/2016 (1536; 1539)	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully. \* N/A

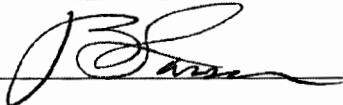
Describe Cause of Problem and Remedial Action Taken. \* At 2300 hours on January 7, 2016, the south carbon canister rupture disk at the Wastewater Treatment Plant over-pressured allowing approximately 40 to 46 bbls of untreated wastewater to be released, filling the earthen dike containment and the excess overflow ran downhill toward Pond (EP-1) but did not reach EP-1. The incident lasted for about 20 minutes. Wastewater Treatment Plant Operators immediately upon discovery changed from the south carbon canister to the north carbon canister. Since the incident occurred at night and the area was covered with snow, assessment of the extent of the contamination was not completed until the next morning.

Describe Area Affected and Cleanup Action Taken. \* On January 8, a vacuum truck began to remove the untreated wastewater from the affected area at the Wastewater Treatment Plant around the carbon canister containment area and the sloping downhill area. A sample was collected of the liquid and sent to our internal onsite laboratory. The results showed that the wastewater had a benzene level that exceeded the 0.5 ppm Regulatory Limit. The vacuum truck removed about 27 bbls from the containment area and an additional 5 to 7 bbls on the downhill slope side west of the carbon canisters. Soil samples were collected and sent to outside laboratory for analysis. Analytical results are still pending. About 2 to 3 inches of soil was removed on the downhill slope west of the carbon canisters.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

**OIL CONSERVATION DIVISION**

Signature:



Printed Name: Beck Larsen:

Approved by Environmental Specialist:

Title: Environmental Engineer

Approval Date:

Expiration Date:

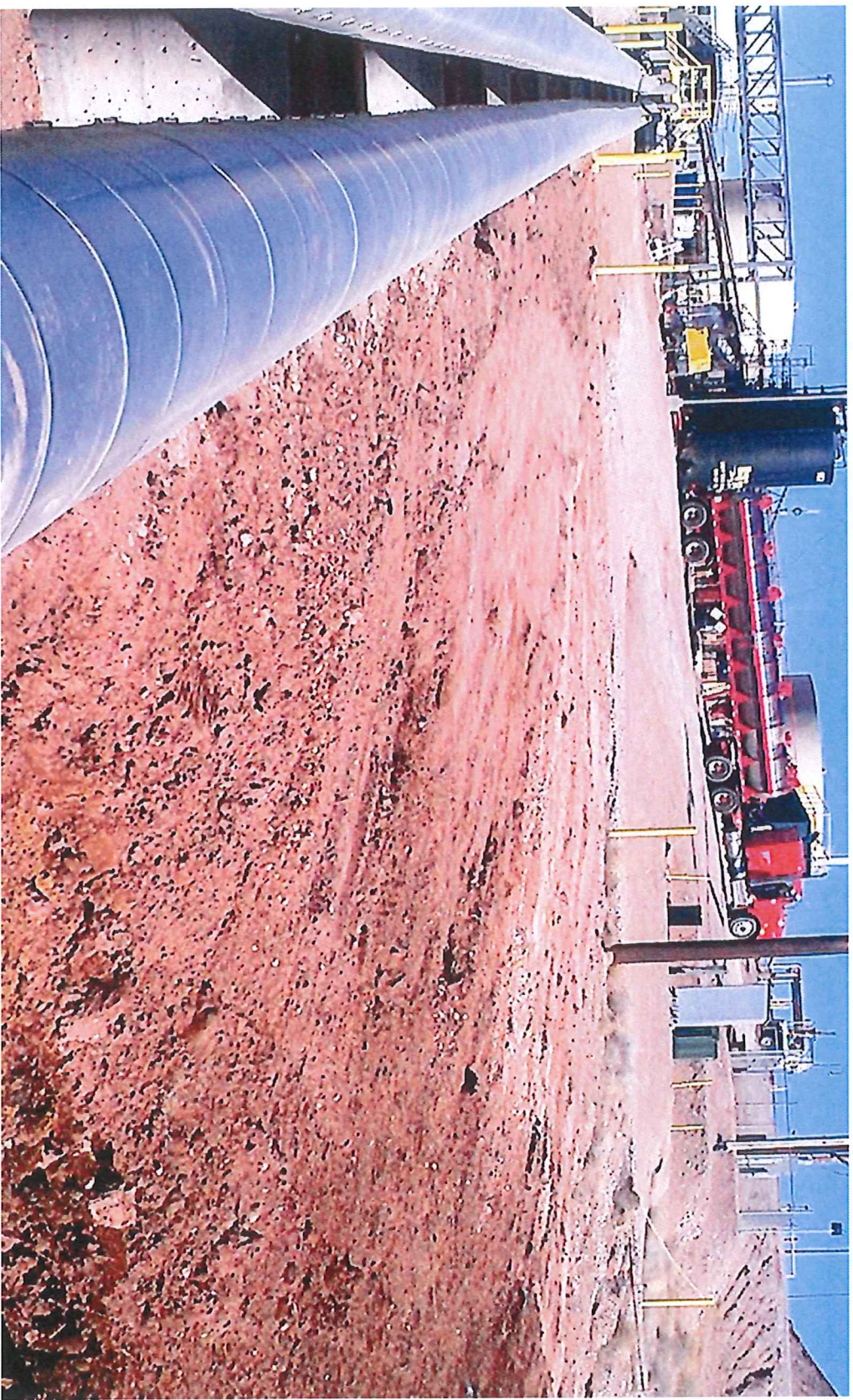
E-mail Address: Thurman.larsen@vnr.com

Conditions of Approval:

Attached ☐

Date: 1/22/16 Phone: (505) 722-0258

\* Attach Additional Sheets If Necessary



5. Clean up looking East – January 14, 2014





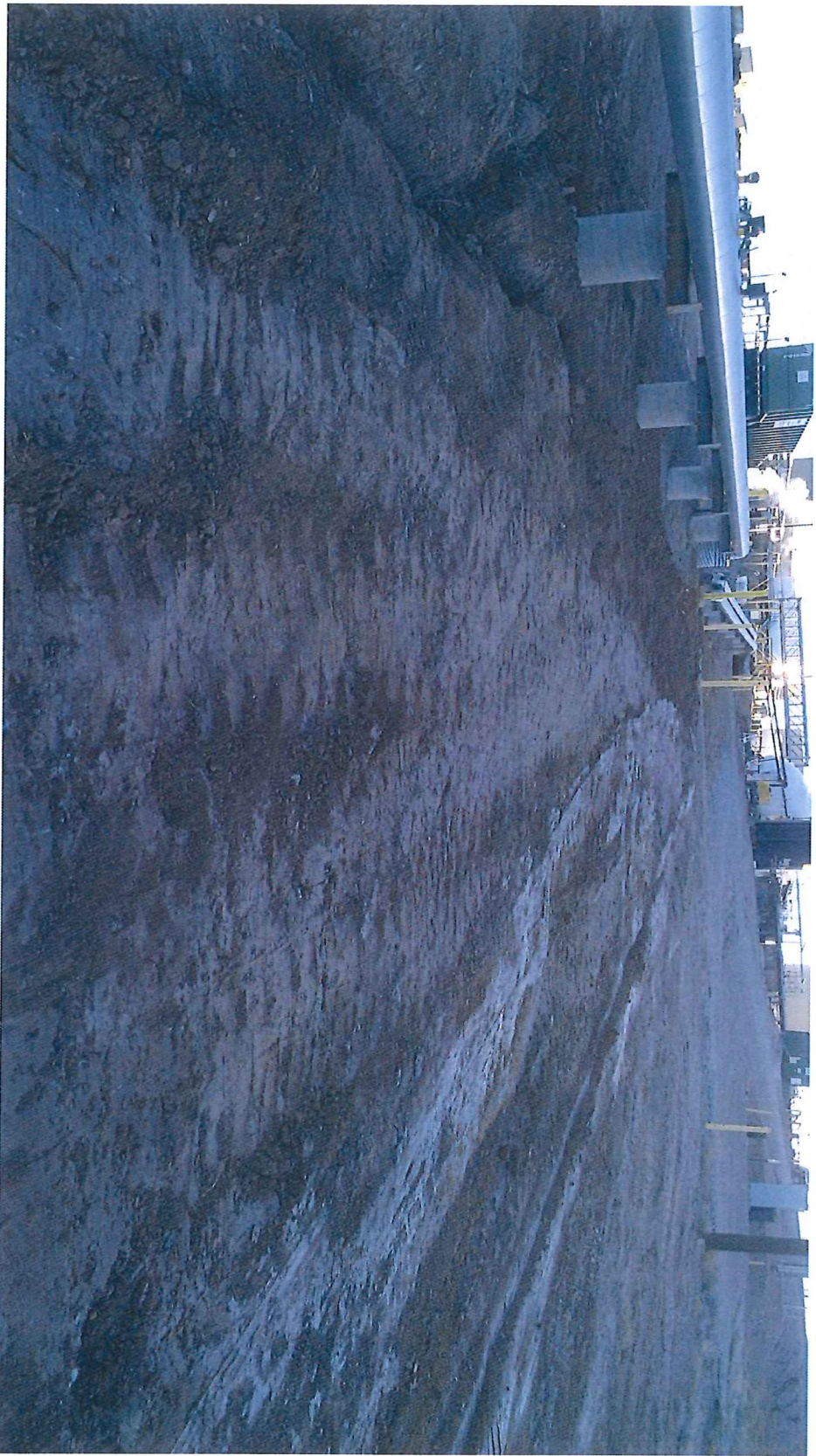
6. Looking North – After clean up, January 16, 2014





7. Looking West – After Clean up. January 15, 2014





8. Looking East – After Cleanup – January 16, 2014





Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

January 24, 2014

Beck Larsen

Western Refining Southwest, Gallup  
92 Giant Crossing Road  
Gallup, NM 87301  
TEL: (505) 722-0258  
FAX (505) 722-0210

RE: Flare Knockout Drum

OrderNo.: 1401757

Dear Beck Larsen:

Hall Environmental Analysis Laboratory received 8 sample(s) on 1/17/2014 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

January 31, 2014

Beck Larsen

Western Refining Southwest, Gallup  
92 Giant Crossing Road  
Gallup, NM 87301  
TEL: (505) 722-0258  
FAX (505) 722-0210

RE: Flare Spill Dirt Pile

OrderNo.: 1401A22

Dear Beck Larsen:

Hall Environmental Analysis Laboratory received 7 sample(s) on 1/24/2014 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: #1

Project: Flare Spill Dirt Pile

Collection Date: 1/21/2014 12:30:00 PM

Lab ID: 1401A22-001

Matrix: SOIL

Received Date: 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	1100	99		mg/Kg	10	1/29/2014 8:32:36 PM	11403
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	1/29/2014 8:32:36 PM	11403
Surr: DNOP	0	66-131	S	%REC	10	1/29/2014 8:32:36 PM	11403
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JMP</b>
Gasoline Range Organics (GRO)	17	10		mg/Kg	2	1/29/2014 1:45:28 PM	11412
Surr: BFB	117	74.5-129		%REC	2	1/29/2014 1:45:28 PM	11412
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JMP</b>
Benzene	ND	0.10		mg/Kg	2	1/29/2014 1:45:28 PM	11412
Toluene	ND	0.10		mg/Kg	2	1/29/2014 1:45:28 PM	11412
Ethylbenzene	ND	0.10		mg/Kg	2	1/29/2014 1:45:28 PM	11412
Xylenes, Total	0.43	0.20		mg/Kg	2	1/29/2014 1:45:28 PM	11412
Surr: 4-Bromofluorobenzene	105	80-120		%REC	2	1/29/2014 1:45:28 PM	11412
<b>EPA METHOD 8310: PAHS</b>							Analyst: <b>SCC</b>
Naphthalene	ND	12		mg/Kg	5	1/29/2014 4:07:27 AM	11419
1-Methylnaphthalene	ND	12		mg/Kg	5	1/29/2014 4:07:27 AM	11419
2-Methylnaphthalene	ND	12		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Acenaphthylene	ND	12		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Acenaphthene	ND	12		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Fluorene	ND	1.5		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Phenanthrene	ND	0.75		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Anthracene	ND	0.75		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Fluoranthene	ND	1.0		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Pyrene	ND	1.2		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Benz(a)anthracene	ND	0.50		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Chrysene	ND	0.50		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Benzo(b)fluoranthene	ND	0.50		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Benzo(k)fluoranthene	ND	0.50		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Benzo(a)pyrene	ND	0.50		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Dibenz(a,h)anthracene	ND	0.50		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Benzo(g,h,i)perylene	ND	0.50		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Indeno(1,2,3-cd)pyrene	ND	0.50		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Surr: Benzo(e)pyrene	0	40-138	S	%REC	5	1/29/2014 4:07:27 AM	11419
<b>MERCURY, TCLP</b>							Analyst: <b>DBD</b>
Mercury	ND	0.020		mg/L	1	1/30/2014 11:05:07 AM	11470
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	5.0		mg/L	1	1/30/2014 6:48:42 AM	11467
Barium	ND	100		mg/L	1	1/30/2014 6:48:42 AM	11467

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #1

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:30:00 PM

**Lab ID:** 1401A22-001

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>ELS</b>
Cadmium	ND	1.0		mg/L	1	1/30/2014 6:48:42 AM	11467
Chromium	ND	5.0		mg/L	1	1/30/2014 6:48:42 AM	11467
Lead	ND	5.0		mg/L	1	1/30/2014 6:48:42 AM	11467
Selenium	ND	1.0		mg/L	1	1/30/2014 6:48:42 AM	11467
Silver	ND	5.0		mg/L	1	1/30/2014 6:48:42 AM	11467
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: <b>cadg</b>
Benzene	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Toluene	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Ethylbenzene	0.050	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
1,2,4-Trimethylbenzene	1.2	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
1,3,5-Trimethylbenzene	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Naphthalene	1.7	1.0		mg/Kg	10	1/30/2014 3:10:25 AM	11412
1-Methylnaphthalene	2.8	2.0		mg/Kg	10	1/30/2014 3:10:25 AM	11412
2-Methylnaphthalene	6.4	2.0		mg/Kg	10	1/30/2014 3:10:25 AM	11412
Acetone	ND	0.75		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Bromobenzene	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
Bromodichloromethane	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Bromoform	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
Bromomethane	ND	0.15		mg/Kg	1	1/29/2014 3:40:30 PM	11412
2-Butanone	ND	0.50		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Carbon disulfide	ND	0.50		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Carbon tetrachloride	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Chlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Chloroethane	ND	0.10		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Chloroform	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Chloromethane	ND	0.15		mg/Kg	1	1/29/2014 3:40:30 PM	11412
2-Chlorotoluene	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
4-Chlorotoluene	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
cis-1,2-DCE	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
1,2-Dibromo-3-chloropropane	ND	1.0		mg/Kg	10	1/30/2014 3:10:25 AM	11412
Dibromochloromethane	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Dibromomethane	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
1,2-Dichlorobenzene	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
1,3-Dichlorobenzene	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
1,4-Dichlorobenzene	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #1

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:30:00 PM

**Lab ID:** 1401A22-001

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
1,1-Dichloroethane	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
1,1-Dichloroethene	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
1,2-Dichloropropane	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
1,3-Dichloropropane	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
2,2-Dichloropropane	ND	0.10		mg/Kg	1	1/29/2014 3:40:30 PM	11412
1,1-Dichloropropene	ND	0.10		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Hexachlorobutadiene	ND	1.0		mg/Kg	10	1/30/2014 3:10:25 AM	11412
2-Hexanone	ND	0.50		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Isopropylbenzene	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
4-Isopropyltoluene	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Methylene chloride	ND	0.15		mg/Kg	1	1/29/2014 3:40:30 PM	11412
n-Butylbenzene	ND	1.5		mg/Kg	10	1/30/2014 3:10:25 AM	11412
n-Propylbenzene	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
sec-Butylbenzene	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
Styrene	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
tert-Butylbenzene	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
1,1,2,2-Tetrachloroethane	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
trans-1,2-DCE	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
1,2,3-Trichlorobenzene	ND	1.0		mg/Kg	10	1/30/2014 3:10:25 AM	11412
1,2,4-Trichlorobenzene	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Trichlorofluoromethane	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
1,2,3-Trichloropropane	ND	1.0		mg/Kg	10	1/30/2014 3:10:25 AM	11412
Vinyl chloride	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Xylenes, Total	0.43	0.10		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Surr: Dibromofluoromethane	108	70-130		%REC	1	1/29/2014 3:40:30 PM	11412
Surr: 1,2-Dichloroethane-d4	98.2	70-130		%REC	1	1/29/2014 3:40:30 PM	11412
Surr: Toluene-d8	90.6	70-130		%REC	1	1/29/2014 3:40:30 PM	11412
Surr: 4-Bromofluorobenzene	80.2	70-130		%REC	10	1/30/2014 3:10:25 AM	11412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #2

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:32:00 PM

**Lab ID:** 1401A22-002

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	1/29/2014 8:54:45 PM	11403
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/29/2014 8:54:45 PM	11403
Surr: DNOP	101	66-131		%REC	1	1/29/2014 8:54:45 PM	11403
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JMP</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/29/2014 3:11:11 PM	11412
Surr: BFB	95.4	74.5-129		%REC	1	1/29/2014 3:11:11 PM	11412
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JMP</b>
Benzene	ND	0.050		mg/Kg	1	1/29/2014 3:11:11 PM	11412
Toluene	ND	0.050		mg/Kg	1	1/29/2014 3:11:11 PM	11412
Ethylbenzene	ND	0.050		mg/Kg	1	1/29/2014 3:11:11 PM	11412
Xylenes, Total	ND	0.10		mg/Kg	1	1/29/2014 3:11:11 PM	11412
Surr: 4-Bromofluorobenzene	105	80-120		%REC	1	1/29/2014 3:11:11 PM	11412
<b>EPA METHOD 8310: PAHS</b>							Analyst: <b>SCC</b>
Naphthalene	ND	2.5		mg/Kg	1	1/29/2014 4:36:38 AM	11419
1-Methylnaphthalene	ND	2.5		mg/Kg	1	1/29/2014 4:36:38 AM	11419
2-Methylnaphthalene	ND	2.5		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Acenaphthylene	ND	2.5		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Acenaphthene	ND	2.5		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Fluorene	ND	0.30		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Phenanthrene	ND	0.15		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Anthracene	ND	0.15		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Fluoranthene	ND	0.20		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Pyrene	ND	0.25		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Benz(a)anthracene	ND	0.10		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Chrysene	ND	0.10		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Benzo(b)fluoranthene	ND	0.10		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Benzo(k)fluoranthene	ND	0.10		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Benzo(a)pyrene	ND	0.10		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Dibenz(a,h)anthracene	ND	0.10		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Benzo(g,h,i)perylene	ND	0.10		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Indeno(1,2,3-cd)pyrene	ND	0.10		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Surr: Benzo(e)pyrene	124	40-138		%REC	1	1/29/2014 4:36:38 AM	11419
<b>MERCURY, TCLP</b>							Analyst: <b>DBD</b>
Mercury	ND	0.020		mg/L	1	1/30/2014 11:06:54 AM	11470
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	5.0		mg/L	1	1/30/2014 6:49:55 AM	11467
Barium	ND	100		mg/L	1	1/30/2014 6:49:55 AM	11467

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #2

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:32:00 PM

**Lab ID:** 1401A22-002

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: ELS
Cadmium	ND	1.0		mg/L	1	1/30/2014 6:49:55 AM	11467
Chromium	ND	5.0		mg/L	1	1/30/2014 6:49:55 AM	11467
Lead	ND	5.0		mg/L	1	1/30/2014 6:49:55 AM	11467
Selenium	ND	1.0		mg/L	1	1/30/2014 6:49:55 AM	11467
Silver	ND	5.0		mg/L	1	1/30/2014 6:49:55 AM	11467
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Benzene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Toluene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Ethylbenzene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,2,4-Trimethylbenzene	0.12	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Naphthalene	0.16	0.10		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1-Methylnaphthalene	0.32	0.20		mg/Kg	1	1/30/2014 12:06:58 PM	11412
2-Methylnaphthalene	0.67	0.20		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Acetone	ND	0.75		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Bromobenzene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Bromodichloromethane	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Bromoform	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Bromomethane	ND	0.15		mg/Kg	1	1/30/2014 12:06:58 PM	11412
2-Butanone	ND	0.50		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Carbon disulfide	ND	0.50		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Carbon tetrachloride	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Chlorobenzene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Chloroethane	ND	0.10		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Chloroform	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Chloromethane	ND	0.15		mg/Kg	1	1/30/2014 12:06:58 PM	11412
2-Chlorotoluene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
4-Chlorotoluene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
cis-1,2-DCE	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Dibromochloromethane	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Dibromomethane	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #2

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:32:00 PM

**Lab ID:** 1401A22-002

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,1-Dichloroethane	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,1-Dichloroethene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,2-Dichloropropane	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,3-Dichloropropane	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
2,2-Dichloropropane	ND	0.10		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,1-Dichloropropene	ND	0.10		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Hexachlorobutadiene	ND	0.10		mg/Kg	1	1/30/2014 12:06:58 PM	11412
2-Hexanone	ND	0.50		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Isopropylbenzene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
4-Isopropyltoluene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Methylene chloride	ND	0.15		mg/Kg	1	1/30/2014 12:06:58 PM	11412
n-Butylbenzene	ND	0.15		mg/Kg	1	1/30/2014 12:06:58 PM	11412
n-Propylbenzene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
sec-Butylbenzene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Styrene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
tert-Butylbenzene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
trans-1,2-DCE	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Trichlorofluoromethane	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Vinyl chloride	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Xylenes, Total	ND	0.10		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Surr: Dibromofluoromethane	113	70-130		%REC	1	1/30/2014 12:06:58 PM	11412
Surr: 1,2-Dichloroethane-d4	100	70-130		%REC	1	1/30/2014 12:06:58 PM	11412
Surr: Toluene-d8	95.7	70-130		%REC	1	1/30/2014 12:06:58 PM	11412
Surr: 4-Bromofluorobenzene	85.0	70-130		%REC	1	1/30/2014 12:06:58 PM	11412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #3

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:35:00 PM

**Lab ID:** 1401A22-003

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	1/31/2014 10:12:50 AM	11403
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/31/2014 10:12:50 AM	11403
Surr: DNOP	104	66-131		%REC	1	1/31/2014 10:12:50 AM	11403
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JMP</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/28/2014 6:39:38 PM	11412
Surr: BFB	90.2	74.5-129		%REC	1	1/28/2014 6:39:38 PM	11412
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JMP</b>
Benzene	ND	0.050		mg/Kg	1	1/28/2014 6:39:38 PM	11412
Toluene	ND	0.050		mg/Kg	1	1/28/2014 6:39:38 PM	11412
Ethylbenzene	ND	0.050		mg/Kg	1	1/28/2014 6:39:38 PM	11412
Xylenes, Total	ND	0.10		mg/Kg	1	1/28/2014 6:39:38 PM	11412
Surr: 4-Bromofluorobenzene	101	80-120		%REC	1	1/28/2014 6:39:38 PM	11412
<b>EPA METHOD 8310: PAHS</b>							Analyst: <b>SCC</b>
Naphthalene	ND	1.2		mg/Kg	5	1/29/2014 5:05:57 AM	11419
1-Methylnaphthalene	ND	1.2		mg/Kg	5	1/29/2014 5:05:57 AM	11419
2-Methylnaphthalene	ND	1.2		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Acenaphthylene	ND	1.2		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Acenaphthene	ND	1.2		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Fluorene	ND	0.15		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Phenanthrene	ND	0.075		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Anthracene	ND	0.075		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Fluoranthene	ND	0.10		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Pyrene	ND	0.12		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Benz(a)anthracene	ND	0.050		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Chrysene	ND	0.050		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Benzo(b)fluoranthene	ND	0.050		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Benzo(k)fluoranthene	ND	0.050		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Benzo(a)pyrene	ND	0.050		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Dibenz(a,h)anthracene	ND	0.050		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Benzo(g,h,i)perylene	ND	0.050		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Indeno(1,2,3-cd)pyrene	ND	0.050		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Surr: Benzo(e)pyrene	90.8	40-138		%REC	5	1/29/2014 5:05:57 AM	11419
<b>MERCURY, TCLP</b>							Analyst: <b>DBD</b>
Mercury	ND	0.020		mg/L	1	1/30/2014 11:08:39 AM	11470
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	5.0		mg/L	1	1/30/2014 6:54:59 AM	11467
Barium	ND	100		mg/L	1	1/30/2014 6:54:59 AM	11467

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #3

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:35:00 PM

**Lab ID:** 1401A22-003

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: ELS
Cadmium	ND	1.0		mg/L	1	1/30/2014 6:54:59 AM	11467
Chromium	ND	5.0		mg/L	1	1/30/2014 6:54:59 AM	11467
Lead	ND	5.0		mg/L	1	1/30/2014 6:54:59 AM	11467
Selenium	ND	1.0		mg/L	1	1/30/2014 6:54:59 AM	11467
Silver	ND	5.0		mg/L	1	1/30/2014 6:54:59 AM	11467
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Benzene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Toluene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Ethylbenzene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Naphthalene	ND	0.10		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1-Methylnaphthalene	ND	0.20		mg/Kg	1	1/29/2014 4:37:52 PM	11412
2-Methylnaphthalene	ND	0.20		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Acetone	ND	0.75		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Bromobenzene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Bromodichloromethane	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Bromoform	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Bromomethane	ND	0.15		mg/Kg	1	1/29/2014 4:37:52 PM	11412
2-Butanone	ND	0.50		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Carbon disulfide	ND	0.50		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Carbon tetrachloride	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Chlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Chloroethane	ND	0.10		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Chloroform	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Chloromethane	ND	0.15		mg/Kg	1	1/29/2014 4:37:52 PM	11412
2-Chlorotoluene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
4-Chlorotoluene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
cis-1,2-DCE	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Dibromochloromethane	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Dibromomethane	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #3

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:35:00 PM

**Lab ID:** 1401A22-003

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,1-Dichloroethane	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,1-Dichloroethene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,2-Dichloropropane	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,3-Dichloropropane	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
2,2-Dichloropropane	ND	0.10		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,1-Dichloropropene	ND	0.10		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Hexachlorobutadiene	ND	0.10		mg/Kg	1	1/29/2014 4:37:52 PM	11412
2-Hexanone	ND	0.50		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Isopropylbenzene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
4-Isopropyltoluene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Methylene chloride	ND	0.15		mg/Kg	1	1/29/2014 4:37:52 PM	11412
n-Butylbenzene	ND	0.15		mg/Kg	1	1/29/2014 4:37:52 PM	11412
n-Propylbenzene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
sec-Butylbenzene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Styrene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
tert-Butylbenzene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
trans-1,2-DCE	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Trichlorofluoromethane	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Vinyl chloride	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Xylenes, Total	ND	0.10		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Surr: Dibromofluoromethane	108	70-130		%REC	1	1/29/2014 4:37:52 PM	11412
Surr: 1,2-Dichloroethane-d4	96.4	70-130		%REC	1	1/29/2014 4:37:52 PM	11412
Surr: Toluene-d8	98.6	70-130		%REC	1	1/29/2014 4:37:52 PM	11412
Surr: 4-Bromofluorobenzene	96.0	70-130		%REC	1	1/29/2014 4:37:52 PM	11412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #4

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:36:00 PM

**Lab ID:** 1401A22-004

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	1/29/2014 9:38:47 PM	11403
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/29/2014 9:38:47 PM	11403
Surr: DNOP	103	66-131		%REC	1	1/29/2014 9:38:47 PM	11403
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JMP</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/28/2014 7:08:08 PM	11412
Surr: BFB	91.5	74.5-129		%REC	1	1/28/2014 7:08:08 PM	11412
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JMP</b>
Benzene	ND	0.050		mg/Kg	1	1/28/2014 7:08:08 PM	11412
Toluene	ND	0.050		mg/Kg	1	1/28/2014 7:08:08 PM	11412
Ethylbenzene	ND	0.050		mg/Kg	1	1/28/2014 7:08:08 PM	11412
Xylenes, Total	ND	0.10		mg/Kg	1	1/28/2014 7:08:08 PM	11412
Surr: 4-Bromofluorobenzene	103	80-120		%REC	1	1/28/2014 7:08:08 PM	11412
<b>EPA METHOD 8310: PAHS</b>							Analyst: <b>SCC</b>
Naphthalene	ND	0.25		mg/Kg	1	1/29/2014 5:35:12 AM	11419
1-Methylnaphthalene	ND	0.25		mg/Kg	1	1/29/2014 5:35:12 AM	11419
2-Methylnaphthalene	ND	0.25		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Acenaphthylene	ND	0.25		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Acenaphthene	ND	0.25		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Fluorene	ND	0.030		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Phenanthrene	ND	0.015		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Anthracene	ND	0.015		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Fluoranthene	ND	0.020		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Pyrene	ND	0.025		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Benz(a)anthracene	ND	0.010		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Chrysene	ND	0.010		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Benzo(b)fluoranthene	ND	0.010		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Benzo(k)fluoranthene	ND	0.010		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Benzo(a)pyrene	ND	0.010		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Dibenz(a,h)anthracene	ND	0.010		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Benzo(g,h,i)perylene	ND	0.010		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Indeno(1,2,3-cd)pyrene	ND	0.010		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Surr: Benzo(e)pyrene	99.3	40-138		%REC	1	1/29/2014 5:35:12 AM	11419
<b>MERCURY, TCLP</b>							Analyst: <b>DBD</b>
Mercury	ND	0.020		mg/L	1	1/30/2014 11:10:26 AM	11470
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	5.0		mg/L	1	1/30/2014 6:56:20 AM	11467
Barium	ND	100		mg/L	1	1/30/2014 6:56:20 AM	11467

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2 for VOA and TOC only.
RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #4

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:36:00 PM

**Lab ID:** 1401A22-004

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>ELS</b>
Cadmium	ND	1.0		mg/L	1	1/30/2014 6:56:20 AM	11467
Chromium	ND	5.0		mg/L	1	1/30/2014 6:56:20 AM	11467
Lead	ND	5.0		mg/L	1	1/30/2014 6:56:20 AM	11467
Selenium	ND	1.0		mg/L	1	1/30/2014 6:56:20 AM	11467
Silver	ND	5.0		mg/L	1	1/30/2014 6:56:20 AM	11467
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: <b>cadg</b>
Benzene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Toluene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Ethylbenzene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Naphthalene	ND	0.10		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1-Methylnaphthalene	ND	0.20		mg/Kg	1	1/29/2014 5:06:37 PM	11412
2-Methylnaphthalene	ND	0.20		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Acetone	ND	0.75		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Bromobenzene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Bromodichloromethane	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Bromoform	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Bromomethane	ND	0.15		mg/Kg	1	1/29/2014 5:06:37 PM	11412
2-Butanone	ND	0.50		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Carbon disulfide	ND	0.50		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Carbon tetrachloride	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Chlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Chloroethane	ND	0.10		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Chloroform	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Chloromethane	ND	0.15		mg/Kg	1	1/29/2014 5:06:37 PM	11412
2-Chlorotoluene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
4-Chlorotoluene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
cis-1,2-DCE	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Dibromochloromethane	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Dibromomethane	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #4

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:36:00 PM

**Lab ID:** 1401A22-004

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,1-Dichloroethane	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,1-Dichloroethene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,2-Dichloropropane	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,3-Dichloropropane	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
2,2-Dichloropropane	ND	0.10		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,1-Dichloropropene	ND	0.10		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Hexachlorobutadiene	ND	0.10		mg/Kg	1	1/29/2014 5:06:37 PM	11412
2-Hexanone	ND	0.50		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Isopropylbenzene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
4-Isopropyltoluene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Methylene chloride	ND	0.15		mg/Kg	1	1/29/2014 5:06:37 PM	11412
n-Butylbenzene	ND	0.15		mg/Kg	1	1/29/2014 5:06:37 PM	11412
n-Propylbenzene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
sec-Butylbenzene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Styrene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
tert-Butylbenzene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
trans-1,2-DCE	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Trichlorofluoromethane	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Vinyl chloride	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Xylenes, Total	ND	0.10		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Surr: Dibromofluoromethane	117	70-130		%REC	1	1/29/2014 5:06:37 PM	11412
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	1	1/29/2014 5:06:37 PM	11412
Surr: Toluene-d8	91.6	70-130		%REC	1	1/29/2014 5:06:37 PM	11412
Surr: 4-Bromofluorobenzene	94.4	70-130		%REC	1	1/29/2014 5:06:37 PM	11412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #5

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:37:00 PM

**Lab ID:** 1401A22-005

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	1/29/2014 10:00:40 PM	11403
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/29/2014 10:00:40 PM	11403
Surr: DNOP	102	66-131		%REC	1	1/29/2014 10:00:40 PM	11403
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JMP</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/28/2014 7:36:43 PM	11412
Surr: BFB	91.2	74.5-129		%REC	1	1/28/2014 7:36:43 PM	11412
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JMP</b>
Benzene	ND	0.050		mg/Kg	1	1/28/2014 7:36:43 PM	11412
Toluene	ND	0.050		mg/Kg	1	1/28/2014 7:36:43 PM	11412
Ethylbenzene	ND	0.050		mg/Kg	1	1/28/2014 7:36:43 PM	11412
Xylenes, Total	ND	0.10		mg/Kg	1	1/28/2014 7:36:43 PM	11412
Surr: 4-Bromofluorobenzene	103	80-120		%REC	1	1/28/2014 7:36:43 PM	11412
<b>EPA METHOD 8310: PAHS</b>							Analyst: <b>SCC</b>
Naphthalene	ND	0.25		mg/Kg	1	1/29/2014 6:04:34 AM	11419
1-Methylnaphthalene	ND	0.25		mg/Kg	1	1/29/2014 6:04:34 AM	11419
2-Methylnaphthalene	ND	0.25		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Acenaphthylene	ND	0.25		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Acenaphthene	ND	0.25		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Fluorene	ND	0.030		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Phenanthrene	ND	0.015		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Anthracene	ND	0.015		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Fluoranthene	ND	0.020		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Pyrene	ND	0.025		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Benz(a)anthracene	ND	0.010		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Chrysene	ND	0.010		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Benzo(b)fluoranthene	ND	0.010		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Benzo(k)fluoranthene	ND	0.010		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Benzo(a)pyrene	ND	0.010		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Dibenz(a,h)anthracene	ND	0.010		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Benzo(g,h,i)perylene	ND	0.010		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Indeno(1,2,3-cd)pyrene	ND	0.010		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Surr: Benzo(e)pyrene	93.8	40-138		%REC	1	1/29/2014 6:04:34 AM	11419
<b>MERCURY, TCLP</b>							Analyst: <b>DBD</b>
Mercury	ND	0.020		mg/L	1	1/30/2014 11:12:14 AM	11470
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	5.0		mg/L	1	1/30/2014 6:57:34 AM	11467
Barium	ND	100		mg/L	1	1/30/2014 6:57:34 AM	11467

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2 for VOA and TOC only.
RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #5

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:37:00 PM

**Lab ID:** 1401A22-005

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: ELS
Cadmium	ND	1.0		mg/L	1	1/30/2014 6:57:34 AM	11467
Chromium	ND	5.0		mg/L	1	1/30/2014 6:57:34 AM	11467
Lead	ND	5.0		mg/L	1	1/30/2014 6:57:34 AM	11467
Selenium	ND	1.0		mg/L	1	1/30/2014 6:57:34 AM	11467
Silver	ND	5.0		mg/L	1	1/30/2014 6:57:34 AM	11467
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Benzene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Toluene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Ethylbenzene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Naphthalene	ND	0.10		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1-Methylnaphthalene	ND	0.20		mg/Kg	1	1/29/2014 5:35:27 PM	11412
2-Methylnaphthalene	ND	0.20		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Acetone	ND	0.75		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Bromobenzene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Bromodichloromethane	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Bromoform	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Bromomethane	ND	0.15		mg/Kg	1	1/29/2014 5:35:27 PM	11412
2-Butanone	ND	0.50		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Carbon disulfide	ND	0.50		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Carbon tetrachloride	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Chlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Chloroethane	ND	0.10		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Chloroform	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Chloromethane	ND	0.15		mg/Kg	1	1/29/2014 5:35:27 PM	11412
2-Chlorotoluene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
4-Chlorotoluene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
cis-1,2-DCE	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Dibromochloromethane	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Dibromomethane	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #5

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:37:00 PM

**Lab ID:** 1401A22-005

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,1-Dichloroethane	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,1-Dichloroethene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,2-Dichloropropane	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,3-Dichloropropane	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
2,2-Dichloropropane	ND	0.10		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,1-Dichloropropene	ND	0.10		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Hexachlorobutadiene	ND	0.10		mg/Kg	1	1/29/2014 5:35:27 PM	11412
2-Hexanone	ND	0.50		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Isopropylbenzene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
4-Isopropyltoluene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Methylene chloride	ND	0.15		mg/Kg	1	1/29/2014 5:35:27 PM	11412
n-Butylbenzene	ND	0.15		mg/Kg	1	1/29/2014 5:35:27 PM	11412
n-Propylbenzene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
sec-Butylbenzene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Styrene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
tert-Butylbenzene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
trans-1,2-DCE	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Trichlorofluoromethane	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Vinyl chloride	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Xylenes, Total	ND	0.10		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Surr: Dibromofluoromethane	107	70-130		%REC	1	1/29/2014 5:35:27 PM	11412
Surr: 1,2-Dichloroethane-d4	100	70-130		%REC	1	1/29/2014 5:35:27 PM	11412
Surr: Toluene-d8	94.7	70-130		%REC	1	1/29/2014 5:35:27 PM	11412
Surr: 4-Bromofluorobenzene	97.0	70-130		%REC	1	1/29/2014 5:35:27 PM	11412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #6

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:40:00 PM

**Lab ID:** 1401A22-006

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	160	10		mg/Kg	1	1/30/2014 3:09:19 PM	11403
Motor Oil Range Organics (MRO)	280	50		mg/Kg	1	1/30/2014 3:09:19 PM	11403
Surr: DNOP	112	66-131		%REC	1	1/30/2014 3:09:19 PM	11403
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: JMP
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/28/2014 9:59:26 PM	11412
Surr: BFB	93.3	74.5-129		%REC	1	1/28/2014 9:59:26 PM	11412
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: JMP
Benzene	ND	0.050		mg/Kg	1	1/28/2014 9:59:26 PM	11412
Toluene	ND	0.050		mg/Kg	1	1/28/2014 9:59:26 PM	11412
Ethylbenzene	ND	0.050		mg/Kg	1	1/28/2014 9:59:26 PM	11412
Xylenes, Total	ND	0.10		mg/Kg	1	1/28/2014 9:59:26 PM	11412
Surr: 4-Bromofluorobenzene	102	80-120		%REC	1	1/28/2014 9:59:26 PM	11412
<b>EPA METHOD 8310: PAHS</b>							Analyst: SCC
Naphthalene	ND	12		mg/Kg	5	1/29/2014 6:33:47 AM	11419
1-Methylnaphthalene	ND	12		mg/Kg	5	1/29/2014 6:33:47 AM	11419
2-Methylnaphthalene	ND	12		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Acenaphthylene	ND	12		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Acenaphthene	ND	12		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Fluorene	ND	1.5		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Phenanthrene	ND	0.75		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Anthracene	ND	0.75		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Fluoranthene	ND	1.0		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Pyrene	ND	1.2		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Benz(a)anthracene	ND	0.50		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Chrysene	1.5	0.50		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Benzo(b)fluoranthene	0.77	0.50		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Benzo(k)fluoranthene	ND	0.50		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Benzo(a)pyrene	ND	0.50		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Dibenz(a,h)anthracene	ND	0.50		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Benzo(g,h,i)perylene	1.9	0.50		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Indeno(1,2,3-cd)pyrene	2.2	0.50		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Surr: Benzo(e)pyrene	0	40-138	S	%REC	5	1/29/2014 6:33:47 AM	11419
<b>MERCURY, TCLP</b>							Analyst: DBD
Mercury	ND	0.020		mg/L	1	1/30/2014 11:14:03 AM	11470
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: ELS
Arsenic	ND	5.0		mg/L	1	1/30/2014 6:58:51 AM	11467
Barium	ND	100		mg/L	1	1/30/2014 6:58:51 AM	11467

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2 for VOA and TOC only.
RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #6

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:40:00 PM

**Lab ID:** 1401A22-006

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: ELS
Cadmium	ND	1.0		mg/L	1	1/30/2014 6:58:51 AM	11467
Chromium	ND	5.0		mg/L	1	1/30/2014 6:58:51 AM	11467
Lead	ND	5.0		mg/L	1	1/30/2014 6:58:51 AM	11467
Selenium	ND	1.0		mg/L	1	1/30/2014 6:58:51 AM	11467
Silver	ND	5.0		mg/L	1	1/30/2014 6:58:51 AM	11467
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Benzene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Toluene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Ethylbenzene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Naphthalene	ND	0.10		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1-Methylnaphthalene	ND	0.20		mg/Kg	1	1/29/2014 6:04:16 PM	11412
2-Methylnaphthalene	ND	0.20		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Acetone	ND	0.75		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Bromobenzene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Bromodichloromethane	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Bromoform	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Bromomethane	ND	0.15		mg/Kg	1	1/29/2014 6:04:16 PM	11412
2-Butanone	ND	0.50		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Carbon disulfide	ND	0.50		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Carbon tetrachloride	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Chlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Chloroethane	ND	0.10		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Chloroform	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Chloromethane	ND	0.15		mg/Kg	1	1/29/2014 6:04:16 PM	11412
2-Chlorotoluene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
4-Chlorotoluene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
cis-1,2-DCE	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Dibromochloromethane	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Dibromomethane	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2 for VOA and TOC only.
RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #6

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:40:00 PM

**Lab ID:** 1401A22-006

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,1-Dichloroethane	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,1-Dichloroethene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,2-Dichloropropane	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,3-Dichloropropane	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
2,2-Dichloropropane	ND	0.10		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,1-Dichloropropene	ND	0.10		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Hexachlorobutadiene	ND	0.10		mg/Kg	1	1/29/2014 6:04:16 PM	11412
2-Hexanone	ND	0.50		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Isopropylbenzene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
4-Isopropyltoluene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Methylene chloride	ND	0.15		mg/Kg	1	1/29/2014 6:04:16 PM	11412
n-Butylbenzene	ND	0.15		mg/Kg	1	1/29/2014 6:04:16 PM	11412
n-Propylbenzene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
sec-Butylbenzene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Styrene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
tert-Butylbenzene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
trans-1,2-DCE	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Trichlorofluoromethane	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Vinyl chloride	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Xylenes, Total	ND	0.10		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Surr: Dibromofluoromethane	104	70-130		%REC	1	1/29/2014 6:04:16 PM	11412
Surr: 1,2-Dichloroethane-d4	92.2	70-130		%REC	1	1/29/2014 6:04:16 PM	11412
Surr: Toluene-d8	95.5	70-130		%REC	1	1/29/2014 6:04:16 PM	11412
Surr: 4-Bromofluorobenzene	99.8	70-130		%REC	1	1/29/2014 6:04:16 PM	11412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #7

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:43:00 PM

**Lab ID:** 1401A22-007

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	310	10		mg/Kg	1	1/30/2014 3:40:21 PM	11403
Motor Oil Range Organics (MRO)	130	50		mg/Kg	1	1/30/2014 3:40:21 PM	11403
Surr: DNOP	112	66-131		%REC	1	1/30/2014 3:40:21 PM	11403
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: JMP
Gasoline Range Organics (GRO)	60	10		mg/Kg	2	1/29/2014 3:39:43 PM	11412
Surr: BFB	202	74.5-129	S	%REC	2	1/29/2014 3:39:43 PM	11412
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: JMP
Benzene	ND	0.10		mg/Kg	2	1/29/2014 3:39:43 PM	11412
Toluene	ND	0.10		mg/Kg	2	1/29/2014 3:39:43 PM	11412
Ethylbenzene	ND	0.10		mg/Kg	2	1/29/2014 3:39:43 PM	11412
Xylenes, Total	1.9	0.20		mg/Kg	2	1/29/2014 3:39:43 PM	11412
Surr: 4-Bromofluorobenzene	114	80-120		%REC	2	1/29/2014 3:39:43 PM	11412
<b>EPA METHOD 8310: PAHS</b>							Analyst: SCC
Naphthalene	ND	13		mg/Kg	5	1/29/2014 7:03:08 AM	11419
1-Methylnaphthalene	ND	13		mg/Kg	5	1/29/2014 7:03:08 AM	11419
2-Methylnaphthalene	18	13		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Acenaphthylene	ND	13		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Acenaphthene	ND	13		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Fluorene	ND	1.5		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Phenanthrene	ND	0.75		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Anthracene	ND	0.75		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Fluoranthene	ND	1.0		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Pyrene	ND	1.3		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Benz(a)anthracene	ND	0.50		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Chrysene	0.53	0.50		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Benzo(b)fluoranthene	ND	0.50		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Benzo(k)fluoranthene	ND	0.50		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Benzo(a)pyrene	ND	0.50		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Dibenz(a,h)anthracene	ND	0.50		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Benzo(g,h,i)perylene	ND	0.50		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Indeno(1,2,3-cd)pyrene	ND	0.50		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Surr: Benzo(e)pyrene	0	40-138	S	%REC	5	1/29/2014 7:03:08 AM	11419
<b>MERCURY, TCLP</b>							Analyst: DBD
Mercury	ND	0.020		mg/L	1	1/30/2014 11:19:30 AM	11470
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: ELS
Arsenic	ND	5.0		mg/L	1	1/30/2014 7:00:05 AM	11467
Barium	ND	100		mg/L	1	1/30/2014 7:00:05 AM	11467

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #7

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:43:00 PM

**Lab ID:** 1401A22-007

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: ELS
Cadmium	ND	1.0		mg/L	1	1/30/2014 7:00:05 AM	11467
Chromium	ND	5.0		mg/L	1	1/30/2014 7:00:05 AM	11467
Lead	ND	5.0		mg/L	1	1/30/2014 7:00:05 AM	11467
Selenium	ND	1.0		mg/L	1	1/30/2014 7:00:05 AM	11467
Silver	ND	5.0		mg/L	1	1/30/2014 7:00:05 AM	11467
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Benzene	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Toluene	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Ethylbenzene	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
1,2,4-Trimethylbenzene	2.6	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
1,3,5-Trimethylbenzene	0.80	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Naphthalene	1.4	1.0		mg/Kg	10	1/30/2014 12:35:40 PM	11412
1-Methylnaphthalene	2.6	2.0		mg/Kg	10	1/30/2014 12:35:40 PM	11412
2-Methylnaphthalene	5.1	2.0		mg/Kg	10	1/30/2014 12:35:40 PM	11412
Acetone	ND	0.75		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Bromobenzene	ND	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
Bromodichloromethane	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Bromoform	ND	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
Bromomethane	ND	0.15		mg/Kg	1	1/29/2014 6:33:09 PM	11412
2-Butanone	ND	0.50		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Carbon disulfide	ND	0.50		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Carbon tetrachloride	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Chlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Chloroethane	ND	0.10		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Chloroform	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Chloromethane	ND	0.15		mg/Kg	1	1/29/2014 6:33:09 PM	11412
2-Chlorotoluene	ND	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
4-Chlorotoluene	ND	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
cis-1,2-DCE	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
1,2-Dibromo-3-chloropropane	ND	1.0		mg/Kg	10	1/30/2014 12:35:40 PM	11412
Dibromochloromethane	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Dibromomethane	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
1,2-Dichlorobenzene	ND	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
1,3-Dichlorobenzene	ND	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
1,4-Dichlorobenzene	ND	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #7

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:43:00 PM

**Lab ID:** 1401A22-007

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
1,1-Dichloroethane	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
1,1-Dichloroethene	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
1,2-Dichloropropane	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
1,3-Dichloropropane	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
2,2-Dichloropropane	ND	0.10		mg/Kg	1	1/29/2014 6:33:09 PM	11412
1,1-Dichloropropene	ND	0.10		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Hexachlorobutadiene	ND	1.0		mg/Kg	10	1/30/2014 12:35:40 PM	11412
2-Hexanone	ND	0.50		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Isopropylbenzene	ND	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
4-Isopropyltoluene	ND	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Methylene chloride	ND	0.15		mg/Kg	1	1/29/2014 6:33:09 PM	11412
n-Butylbenzene	ND	1.5		mg/Kg	10	1/30/2014 12:35:40 PM	11412
n-Propylbenzene	ND	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
sec-Butylbenzene	ND	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
Styrene	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
tert-Butylbenzene	ND	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
1,1,2,2-Tetrachloroethane	ND	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
trans-1,2-DCE	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
1,2,3-Trichlorobenzene	ND	1.0		mg/Kg	10	1/30/2014 12:35:40 PM	11412
1,2,4-Trichlorobenzene	ND	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Trichlorofluoromethane	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
1,2,3-Trichloropropane	ND	1.0		mg/Kg	10	1/30/2014 12:35:40 PM	11412
Vinyl chloride	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Xylenes, Total	1.9	0.10		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Surr: Dibromofluoromethane	114	70-130		%REC	1	1/29/2014 6:33:09 PM	11412
Surr: 1,2-Dichloroethane-d4	103	70-130		%REC	1	1/29/2014 6:33:09 PM	11412
Surr: Toluene-d8	97.5	70-130		%REC	1	1/29/2014 6:33:09 PM	11412
Surr: 4-Bromofluorobenzene	80.6	70-130		%REC	10	1/30/2014 12:35:40 PM	11412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



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Tax I.D. 62-0814289

Est. 1970

# REPORT OF ANALYSIS

January 31, 2014

Anne Thorne  
Hall Environmental Analysis Laborat  
4901 Hawkins NE  
Albuquerque, NM 87109

Date Received : January 28, 2014  
Description :

Sample ID : 1401A22-001B 1

Collected By :  
Collection Date : 01/21/14 12:30

ESC Sample # : L680130-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	Non-Corrosive			9045D	01/29/14	1
Ignitability	See Footnote		Deg. F	D93/1010A	01/30/14	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/kg	9012B	01/30/14	1
Reactive Sulf. (SW846 7.3.4.1)	BDL	25.	mg/kg	9034/9030B	01/30/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 01/31/14 09:39 Printed: 01/31/14 09:40  
L680130-01 (IGNITABILITY) - Did Not Ignite @ 170 F



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# REPORT OF ANALYSIS

January 31, 2014

Anne Thorne  
Hall Environmental Analysis Laborat  
4901 Hawkins NE  
Albuquerque, NM 87109

Date Received : January 28, 2014  
Description :

Sample ID : 1401A22-002B 2

Collected By :  
Collection Date : 01/21/14 12:32

ESC Sample # : L680130-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	Non-Corrosive			9045D	01/29/14	1
Ignitability	See Footnote		Deg. F	D93/1010A	01/30/14	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/kg	9012B	01/30/14	1
Reactive Sulf.(SW846 7.3.4.1)	BDL	25.	mg/kg	9034/9030B	01/30/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

January 31, 2014

Anne Thorne  
Hall Environmental Analysis Laborat  
4901 Hawkins NE  
Albuquerque, NM 87109

Date Received : January 28, 2014  
Description :  
Sample ID : 1401A22-003B 3  
Collected By :  
Collection Date : 01/21/14 12:35

ESC Sample # : L680130-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	Non-Corrosive			9045D	01/29/14	1
Ignitability	See Footnote		Deg. F	D93/1010A	01/30/14	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/kg	9012B	01/30/14	1
Reactive Sulf.(SW846 7.3.4.1)	BDL	25.	mg/kg	9034/9030B	01/30/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 01/31/14 09:39 Printed: 01/31/14 09:40  
L680130-03 (IGNITABILITY) - Did Not Ignite @ 170 F



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# REPORT OF ANALYSIS

Anne Thorne  
Hall Environmental Analysis Laborat  
4901 Hawkins NE  
Albuquerque, NM 87109

January 31, 2014

Date Received : January 28, 2014  
Description :

Sample ID : 1401A22-004B

Collected By :  
Collection Date : 01/21/14 12:36

ESC Sample # : L680130-04

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	Non-Corrosive			9045D	01/29/14	1
Ignitability	See Footnote		Deg. F	D93/1010A	01/30/14	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/kg	9012B	01/30/14	1
Reactive Sulf.(SW846 7.3.4.1)	BDL	25.	mg/kg	9034/9030B	01/30/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 01/31/14 09:39 Printed: 01/31/14 09:40

L680130-04 (IGNITABILITY) - Did Not Ignite @ 170 F



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# REPORT OF ANALYSIS

January 31, 2014

Anne Thorne  
Hall Environmental Analysis Laborat  
4901 Hawkins NE  
Albuquerque, NM 87109

Date Received : January 28, 2014  
Description :  
Sample ID : 1401A22-005B 5  
Collected By :  
Collection Date : 01/21/14 12:37

ESC Sample # : L680130-05

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	Non-Corrosive			9045D	01/29/14	1
Ignitability	See Footnote		Deg. F	D93/1010A	01/30/14	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/kg	9012B	01/30/14	1
Reactive Sulf.(SW846 7.3.4.1)	BDL	25.	mg/kg	9034/9030B	01/30/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 01/31/14 09:39 Printed: 01/31/14 09:40  
L680130-05 (IGNITABILITY) - Did Not Ignite @ 170 F





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# REPORT OF ANALYSIS

January 31, 2014

Anne Thorne  
Hall Environmental Analysis Laborat  
4901 Hawkins NE  
Albuquerque, NM 87109

Date Received : January 28, 2014  
Description :

Sample ID : 1401A22-006B 6

Collected By :  
Collection Date : 01/21/14 12:40

ESC Sample # : L680130-06

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	Non-Corrosive			9045D	01/29/14	1
Ignitability	See Footnote		Deg. F	D93/1010A	01/30/14	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/kg	9012B	01/30/14	1
Reactive Sulf. (SW846 7.3.4.1)	BDL	25.	mg/kg	9034/9030B	01/30/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 01/31/14 09:39 Printed: 01/31/14 09:40  
L680130-06 (IGNITABILITY) - Did Not Ignite @ 170 F



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Tax I.D. 62-0814289

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# REPORT OF ANALYSIS

January 31, 2014

Anne Thorne  
Hall Environmental Analysis Laborat  
4901 Hawkins NE  
Albuquerque, NM 87109

Date Received : January 28, 2014  
Description :  
Sample ID : 1401A22-007B 7  
Collected By :  
Collection Date : 01/21/14 12:43

ESC Sample # : L680130-07

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	Non-Corrosive			9045D	01/29/14	1
Ignitability	See Footnote		Deg. F	D93/1010A	01/30/14	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/kg	9012B	01/30/14	1
Reactive Sulf. (SW846 7.3.4.1)	BDL	25.	mg/kg	9034/9030B	01/30/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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Reported: 01/31/14 09:39 Printed: 01/31/14 09:40  
L680130-07 (IGNITABILITY) - Did Not Ignite @ 170 F



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Est. 1970

Hall Environmental Analysis Laboratory  
Anne Thorne  
4901 Hawkins NE

Quality Assurance Report  
Level II

Albuquerque, NM 87109

L680130

January 31, 2014

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Reactive Sulf. (SW846 7.3.4.1)	< 25	mg/kg			WG703685	01/30/14 15:00
Reactive CN (SW846 7.3.3.2)	< .125	mg/kg			WG703688	01/30/14 20:35

Analyte	Units	Result	Duplicate		RPD	Limit	Ref Samp	Batch
			Duplicate	% Rec				
Corrosivity		0.0	0.0	0.0	0.0	10	L680117-01	WG703730
Corrosivity		0.0	0.0	0.0	0.0	10	L680130-07	WG703730
Ignitability	Deg. F	0.00	0.00	0.00	0.00	10	L680117-01	WG703902
Ignitability	Deg. F	0.00	0.00	0.00	0.00	10	L680130-07	WG703902
Reactive Sulf. (SW846 7.3.4.1)	mg/kg	0.0	0.0	0.0	0.0	20	L680007-01	WG703685
Reactive Sulf. (SW846 7.3.4.1)	mg/kg	0.0	0.0	0.0	0.0	20	L680142-09	WG703685
Reactive CN (SW846 7.3.3.2)	mg/kg	0.0	0.0	0.0	0.0	20	L680007-01	WG703688
Reactive CN (SW846 7.3.3.2)	mg/kg	0.0	0.0	0.0	0.0	20	L680142-09	WG703688

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Corrosivity		5.93	5.90	99.5	98.3-101.7	WG703730
Ignitability	Deg. F	82	83.0	101.	93-107	WG703902
Reactive Sulf. (SW846 7.3.4.1)	mg/kg	100	110.	110.	70-130	WG703685

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	% Rec				
Corrosivity		5.90	5.90	99.0	98.3-101.7	0.0	10	WG703730
Ignitability	Deg. F	83.0	83.0	101.	93-107	0.00	20	WG703902
Reactive Sulf. (SW846 7.3.4.1)	mg/kg	100.	110.	100.	70-130	9.52	20	WG703685

Batch number / Run number / Sample number cross reference

WG703730: R2880753: L680130-01 02 03 04 05 06 07  
WG703902: R2880972: L680130-01 02 03 04 05 06 07  
WG703685: R2881002: L680130-01 02 03 04 05 06 07  
WG703688: R2881107: L680130-01 02 03 04 05 06 07

\* \* Calculations are performed prior to rounding of reported values.

\* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401A22

31-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Spill Dirt Pile

Sample ID	MB-11403	SampType:	MBLK		TestCode:	EPA Method 8015D: Diesel Range Organics				
Client ID:	PBS	Batch ID:	11403		RunNo:	16359				
Prep Date:	1/27/2014	Analysis Date:	1/29/2014		SeqNo:	472322		Units:	mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		103	66	131			

Sample ID	LCS-11403		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 11403		RunNo: 16359					
Prep Date:	1/27/2014		Analysis Date: 1/29/2014		SeqNo: 472323		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	103	60.8	145			
Surr: DNOP	5.3		5.000		105	66	131			

Sample ID	MB-11441		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 11441		RunNo: 16383					
Prep Date:	1/28/2014		Analysis Date: 1/30/2014		SeqNo: 473349		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.5		10.00		84.9	66	131			

Sample ID	LCS-11441		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 11441		RunNo: 16383					
Prep Date:	1/28/2014		Analysis Date: 1/30/2014		SeqNo: 473351		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	3.9		5.000		78.6	66	131			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401A22

31-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Spill Dirt Pile

Sample ID	MB-11412		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 11412		RunNo: 16351					
Prep Date:	1/27/2014		Analysis Date: 1/28/2014		SeqNo: 471380		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	880		1000		88.3	74.5	129			

Sample ID	LCS-11412		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 11412		RunNo: 16351					
Prep Date:	1/27/2014		Analysis Date: 1/28/2014		SeqNo: 471381		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	107	74.5	126			
Surr: BFB	940		1000		94.2	74.5	129			

Sample ID	MB-11450		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 11450		RunNo: 16363					
Prep Date:	1/28/2014		Analysis Date: 1/29/2014		SeqNo: 472127		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	900		1000		90.5	74.5	129			

Sample ID	LCS-11450		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 11450		RunNo: 16363					
Prep Date:	1/28/2014		Analysis Date: 1/29/2014		SeqNo: 472128		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	960		1000		96.0	74.5	129			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401A22

31-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Spill Dirt Pile

Sample ID	<b>MB-11412</b>		SampType:	<b>MBLK</b>		TestCode:	<b>EPA Method 8021B: Volatiles</b>			
Client ID:	<b>PBS</b>		Batch ID:	<b>11412</b>		RunNo:	<b>16351</b>			
Prep Date:	<b>1/27/2014</b>		Analysis Date:	<b>1/28/2014</b>		SeqNo:	<b>471415</b>		Units: <b>mg/Kg</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		100	80	120			

Sample ID	<b>LCS-11412</b>		SampType:	<b>LCS</b>		TestCode:	<b>EPA Method 8021B: Volatiles</b>			
Client ID:	<b>LCSS</b>		Batch ID:	<b>11412</b>		RunNo:	<b>16351</b>			
Prep Date:	<b>1/27/2014</b>		Analysis Date:	<b>1/28/2014</b>		SeqNo:	<b>471416</b>		Units: <b>mg/Kg</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	1.000	0	106	80	120			
Toluene	1.1	0.050	1.000	0	108	80	120			
Ethylbenzene	1.1	0.050	1.000	0	108	80	120			
Xylenes, Total	3.2	0.10	3.000	0	108	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		105	80	120			

Sample ID	<b>MB-11450</b>		SampType:	<b>MBLK</b>		TestCode:	<b>EPA Method 8021B: Volatiles</b>			
Client ID:	<b>PBS</b>		Batch ID:	<b>11450</b>		RunNo:	<b>16363</b>			
Prep Date:	<b>1/28/2014</b>		Analysis Date:	<b>1/29/2014</b>		SeqNo:	<b>472159</b>		Units: <b>%REC</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

Sample ID	<b>LCS-11450</b>		SampType:	<b>LCS</b>		TestCode:	<b>EPA Method 8021B: Volatiles</b>			
Client ID:	<b>LCSS</b>		Batch ID:	<b>11450</b>		RunNo:	<b>16363</b>			
Prep Date:	<b>1/28/2014</b>		Analysis Date:	<b>1/29/2014</b>		SeqNo:	<b>472160</b>		Units: <b>%REC</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		107	80	120			

Sample ID	<b>1401A22-001AMS</b>		SampType:	<b>MS</b>		TestCode:	<b>EPA Method 8021B: Volatiles</b>			
Client ID:	<b>#1</b>		Batch ID:	<b>11412</b>		RunNo:	<b>16363</b>			
Prep Date:	<b>1/27/2014</b>		Analysis Date:	<b>1/29/2014</b>		SeqNo:	<b>472162</b>		Units: <b>mg/Kg</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.10	0.9970	0	93.6	67.4	135			
Toluene	1.0	0.10	0.9970	0.02666	98.4	72.6	135			
Ethylbenzene	1.0	0.10	0.9970	0.05631	97.8	69.4	143			
Xylenes, Total	3.4	0.20	2.991	0.4270	98.9	70.8	144			

### 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      | ND Not Detected at the Reporting Limit               |
| O RSD is greater than RSDlimit                    | P Sample pH greater than 2 for VOA and TOC only.     |
| R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
| S Spike Recovery outside accepted recovery limits |  |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401A22

31-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Spill Dirt Pile

Sample ID	1401A22-001AMS	SampType:	MS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	#1	Batch ID:	11412	RunNo:	16363					
Prep Date:	1/27/2014	Analysis Date:	1/29/2014	SeqNo:	472162	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	2.2		1.994		109	80	120			

Sample ID	1401A22-001AMSD	SampType:	MSD	TestCode: EPA Method 8021B: Volatiles						
Client ID:	#1	Batch ID:	11412	RunNo: 16363						
Prep Date:	1/27/2014	Analysis Date:	1/29/2014	SeqNo: 472163		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.10	0.9980	0	105	67.4	135	11.4	20	
Toluene	1.1	0.10	0.9980	0.02666	106	72.6	135	7.04	20	
Ethylbenzene	1.1	0.10	0.9980	0.05631	107	69.4	143	8.81	20	
Xylenes, Total	3.6	0.20	2.994	0.4270	106	70.8	144	6.50	20	
Surr: 4-Bromofluorobenzene	2.1		1.996		106	80	120	0	0	

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401A22

31-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Spill Dirt Pile

Sample ID	<b>mb-11450</b>		SampType:	<b>MBLK</b>		TestCode:	<b>EPA Method 8260B: Volatiles</b>			
Client ID:	<b>PBS</b>		Batch ID:	<b>11450</b>		RunNo:	<b>16373</b>			
Prep Date:	<b>1/28/2014</b>		Analysis Date:	<b>1/29/2014</b>		SeqNo:	<b>472210</b>		Units: <b>%REC</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.54		0.5000		107	70	130			
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		91.2	70	130			
Surr: Toluene-d8	0.42		0.5000		84.8	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		93.4	70	130			

Sample ID	<b>lcs-11450</b>		SampType:	<b>LCS</b>		TestCode:	<b>EPA Method 8260B: Volatiles</b>			
Client ID:	<b>LCSS</b>		Batch ID:	<b>11450</b>		RunNo:	<b>16373</b>			
Prep Date:	<b>1/28/2014</b>		Analysis Date:	<b>1/29/2014</b>		SeqNo:	<b>472212</b>		Units: <b>%REC</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.57		0.5000		113	70	130			
Surr: 1,2-Dichloroethane-d4	0.55		0.5000		111	70	130			
Surr: Toluene-d8	0.54		0.5000		108	70	130			
Surr: 4-Bromofluorobenzene	0.45		0.5000		90.8	70	130			

### Qualifiers:

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E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401A22

31-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Spill Dirt Pile

Sample ID	<b>MB-11419</b>		SampType:	<b>MBLK</b>		TestCode:	<b>EPA Method 8310: PAHs</b>			
Client ID:	<b>PBS</b>		Batch ID:	<b>11419</b>		RunNo:	<b>16327</b>			
Prep Date:	<b>1/27/2014</b>		Analysis Date:	<b>1/29/2014</b>		SeqNo:	<b>471395</b>		Units: <b>mg/Kg</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	0.25								
1-Methylnaphthalene	ND	0.25								
2-Methylnaphthalene	ND	0.25								
Acenaphthylene	ND	0.25								
Acenaphthene	ND	0.25								
Fluorene	ND	0.030								
Phenanthrene	ND	0.015								
Anthracene	ND	0.015								
Fluoranthene	ND	0.020								
Pyrene	ND	0.025								
Benz(a)anthracene	ND	0.010								
Chrysene	ND	0.010								
Benzo(b)fluoranthene	ND	0.010								
Benzo(k)fluoranthene	ND	0.010								
Benzo(a)pyrene	ND	0.010								
Dibenz(a,h)anthracene	ND	0.010								
Benzo(g,h,i)perylene	ND	0.010								
Indeno(1,2,3-cd)pyrene	ND	0.010								
Surr: Benzo(e)pyrene	0.40		0.5000		80.0	40	138			

Sample ID	<b>LCS-11419</b>		SampType:	<b>LCS</b>		TestCode:	<b>EPA Method 8310: PAHs</b>			
Client ID:	<b>LCSS</b>		Batch ID:	<b>11419</b>		RunNo:	<b>16327</b>			
Prep Date:	<b>1/27/2014</b>		Analysis Date:	<b>1/29/2014</b>		SeqNo:	<b>471396</b>		Units: <b>mg/Kg</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	1.1	0.25	2.000	0	54.6	43.1	105			
1-Methylnaphthalene	0.98	0.25	2.000	0	48.8	39	98.6			
2-Methylnaphthalene	0.91	0.25	2.000	0	45.4	33.5	99.5			
Acenaphthylene	1.3	0.25	2.000	0	62.6	46.8	109			
Acenaphthene	0.99	0.25	2.000	0	49.6	37.8	101			
Fluorene	0.11	0.030	0.2000	0	53.2	41.8	98.6			
Phenanthrene	0.059	0.015	0.1006	0	58.2	42.3	118			
Anthracene	0.060	0.015	0.1006	0	60.1	43.7	107			
Fluoranthene	0.14	0.020	0.2006	0	68.0	44.9	114			
Pyrene	0.14	0.025	0.2000	0	69.6	37	109			
Benz(a)anthracene	0.013	0.010	0.02000	0	62.5	42.2	121			
Chrysene	0.059	0.010	0.1006	0	58.9	43.4	104			
Benzo(b)fluoranthene	0.016	0.010	0.02500	0	63.0	46.3	128			
Benzo(k)fluoranthene	ND	0.010	0.01250	0	64.0	44.8	128			

### 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	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401A22

31-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Spill Dirt Pile

Sample ID	LCS-11419			SampType:	LCS			TestCode:	EPA Method 8310: PAHs		
Client ID:	LCSS			Batch ID:	11419			RunNo:	16327		
Prep Date:	1/27/2014			Analysis Date:	1/29/2014			SeqNo:	471396		
								Units:	mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzo(a)pyrene	ND	0.010	0.01250	0	62.0	38.3	117				
Dibenz(a,h)anthracene	0.016	0.010	0.02500	0	63.0	45.2	114				
Benzo(g,h,i)perylene	0.014	0.010	0.02500	0	58.0	39.5	121				
Indeno(1,2,3-cd)pyrene	0.034	0.010	0.05002	0	69.0	51.7	114				
Surr: Benzo(e)pyrene	0.38		0.5000		76.4	40	138				

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401A22

31-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Spill Dirt Pile

Sample ID	MB-11470		SampType: MBLK		TestCode: MERCURY, TCLP					
Client ID:	PBW		Batch ID: 11470		RunNo: 16400					
Prep Date:	1/29/2014		Analysis Date: 1/30/2014		SeqNo: 473022		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercurv	ND	0.020								

Sample ID	LCS-11470			SampType:	LCS		TestCode:	MERCURY, TCLP			
Client ID:	LCSW			Batch ID:	11470		RunNo:	16400			
Prep Date:	1/29/2014			Analysis Date:	1/30/2014		SeqNo:	473023		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.020	0.005000	0	97.4	80	120				

Sample ID	1401A22-006AMS			SampType:	MS		TestCode:	MERCURY, TCLP			
Client ID:	#6			Batch ID:	11470		RunNo:	16400			
Prep Date:	1/29/2014			Analysis Date:	1/30/2014		SeqNo:	473035		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.020	0.005000	0	99.2	75	125				

Sample ID	1401A22-006AMSD			SampType:	MSD		TestCode:	MERCURY, TCLP			
Client ID:	#6			Batch ID:	11470		RunNo:	16400			
Prep Date:	1/29/2014			Analysis Date:	1/30/2014		SeqNo:	473036		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.020	0.005000	0	97.7	75	125	0	20		

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401A22

31-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Spill Dirt Pile

Sample ID	MB-11467		SampType: MBLK		TestCode: EPA Method 6010B: TCLP Metals					
Client ID:	PBW		Batch ID: 11467		RunNo: 16378					
Prep Date:	1/29/2014		Analysis Date: 1/30/2014		SeqNo: 472331		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	5.0								
Barium	ND	100								
Cadmium	ND	1.0								
Chromium	ND	5.0								
Lead	ND	5.0								
Selenium	ND	1.0								
Silver	ND	5.0								

Sample ID	LCS-11467			SampType:	LCS		TestCode:	EPA Method 6010B: TCLP Metals			
Client ID:	LCSW			Batch ID:	11467		RunNo:	16378			
Prep Date:	1/29/2014			Analysis Date:	1/30/2014		SeqNo:	472332		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Arsenic	ND	5.0	0.5000	0	92.2	80	120				
Barium	ND	100	0.5000	0	86.0	80	120				
Cadmium	ND	1.0	0.5000	0	89.4	80	120				
Chromium	ND	5.0	0.5000	0	87.2	80	120				
Lead	ND	5.0	0.5000	0	84.6	80	120				
Selenium	ND	1.0	0.5000	0	87.0	80	120				
Silver	ND	5.0	0.1000	0	94.1	80	120				

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87105  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1401A22

RcptNo: 1

Received by/date:

AT 01/24/14

Logged By:

Michelle Garcia

1/24/2014 4:15:00 PM

Michelle Garcia

Completed By:

Michelle Garcia

1/27/2014 4:58:47 PM

Michelle Garcia

Reviewed By:

mg/LM 01/27/14

### Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Client

### Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH: \_\_\_\_\_  
( $<2$  or  $>12$  unless noted)  
Adjusted? \_\_\_\_\_  
Checked by: \_\_\_\_\_

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:		Date:	
By Whom:		Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Not Present			

# Chain-of-Custody Record

Client: Western - Refining

Gallup Refinery

Mailing Address: 92 GIANT CROSSING ROAD

Gallup NM 87301

Phone #: 505 722 3833

email or Fax#: 505 863 0930

QA/QC Package:

☐ Standard

☐ Other

☐ EDD (Type)

☐ Level 4 (Full Validation)

Sampler: CTI

On Ice ☒ Yes ☐ No

Sample Temperature: 10

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
1-21-14	12:30	Soil	#1	2x8oz	ice	1401A22
	12:32	Soil	#2	2x8oz		001
	12:35		#3	2x8oz		002
	12:36		#4	2x8oz		003
	12:37		#5	2x8oz		004
	12:40		#6	2x8oz		005
	12:43		#7	2x8oz		006
						007

Date: 1-24-14

Time: 16:15

Date:

Time:

Relinquished by:

Lucas Maerten

Relinquished by:

Received by:

Chloe Kell 1/24/14

Received by:

Date

Time

Turn-Around Time:

☐ Standard ☒ Rush

Project Name:

Flare Spill Dirt pile

Project #:

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

## Analysis Request

BTEX + MTBE + TMBs (8021B)	<input checked="" type="checkbox"/>
BTEX + MTBE + TPH (Gas only)	<input checked="" type="checkbox"/>
TPH 8015B (GRO / DRO / MRO)	<input checked="" type="checkbox"/>
TPH (Method 418.1)	<input checked="" type="checkbox"/>
EDB (Method 504.1)	<input checked="" type="checkbox"/>
PAH (8310 or 8270SIMS)	<input checked="" type="checkbox"/>
RCRA 8 Metals	<input checked="" type="checkbox"/>
Anions (F)	<input checked="" type="checkbox"/>
8081 Pesticides / 8082 PCB's	<input checked="" type="checkbox"/>
8260B (VOA) TCLP	<input checked="" type="checkbox"/>
8270 (Semi-VOA) TCLP	<input checked="" type="checkbox"/>
TCLP Metals RCRA 8	<input checked="" type="checkbox"/>
BTU	<input checked="" type="checkbox"/>
Air Bubbles (Y or N)	<input checked="" type="checkbox"/>

per BL do not analyze TCLP 8260 only 8260 on 1/27/14

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this





Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

January 31, 2014

Beck Larsen

Western Refining Southwest, Gallup  
92 Giant Crossing Road  
Gallup, NM 87301  
TEL: (505) 722-0258  
FAX (505) 722-0210

RE: Flare Spill Dirt Pile

OrderNo.: 1401A22

Dear Beck Larsen:

Hall Environmental Analysis Laboratory received 7 sample(s) on 1/24/2014 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: #1

Project: Flare Spill Dirt Pile

Collection Date: 1/21/2014 12:30:00 PM

Lab ID: 1401A22-001

Matrix: SOIL

Received Date: 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	1100	99		mg/Kg	10	1/29/2014 8:32:36 PM	11403
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	1/29/2014 8:32:36 PM	11403
Surr: DNOP	0	66-131	S	%REC	10	1/29/2014 8:32:36 PM	11403
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JMP</b>
Gasoline Range Organics (GRO)	17	10		mg/Kg	2	1/29/2014 1:45:28 PM	11412
Surr: BFB	117	74.5-129		%REC	2	1/29/2014 1:45:28 PM	11412
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JMP</b>
Benzene	ND	0.10		mg/Kg	2	1/29/2014 1:45:28 PM	11412
Toluene	ND	0.10		mg/Kg	2	1/29/2014 1:45:28 PM	11412
Ethylbenzene	ND	0.10		mg/Kg	2	1/29/2014 1:45:28 PM	11412
Xylenes, Total	0.43	0.20		mg/Kg	2	1/29/2014 1:45:28 PM	11412
Surr: 4-Bromofluorobenzene	105	80-120		%REC	2	1/29/2014 1:45:28 PM	11412
<b>EPA METHOD 8310: PAHS</b>							Analyst: <b>SCC</b>
Naphthalene	ND	12		mg/Kg	5	1/29/2014 4:07:27 AM	11419
1-Methylnaphthalene	ND	12		mg/Kg	5	1/29/2014 4:07:27 AM	11419
2-Methylnaphthalene	ND	12		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Acenaphthylene	ND	12		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Acenaphthene	ND	12		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Fluorene	ND	1.5		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Phenanthrene	ND	0.75		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Anthracene	ND	0.75		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Fluoranthene	ND	1.0		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Pyrene	ND	1.2		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Benz(a)anthracene	ND	0.50		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Chrysene	ND	0.50		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Benzo(b)fluoranthene	ND	0.50		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Benzo(k)fluoranthene	ND	0.50		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Benzo(a)pyrene	ND	0.50		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Dibenz(a,h)anthracene	ND	0.50		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Benzo(g,h,i)perylene	ND	0.50		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Indeno(1,2,3-cd)pyrene	ND	0.50		mg/Kg	5	1/29/2014 4:07:27 AM	11419
Surr: Benzo(e)pyrene	0	40-138	S	%REC	5	1/29/2014 4:07:27 AM	11419
<b>MERCURY, TCLP</b>							Analyst: <b>DBD</b>
Mercury	ND	0.020		mg/L	1	1/30/2014 11:05:07 AM	11470
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	5.0		mg/L	1	1/30/2014 6:48:42 AM	11467
Barium	ND	100		mg/L	1	1/30/2014 6:48:42 AM	11467

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #1

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:30:00 PM

**Lab ID:** 1401A22-001

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: ELS
Cadmium	ND	1.0		mg/L	1	1/30/2014 6:48:42 AM	11467
Chromium	ND	5.0		mg/L	1	1/30/2014 6:48:42 AM	11467
Lead	ND	5.0		mg/L	1	1/30/2014 6:48:42 AM	11467
Selenium	ND	1.0		mg/L	1	1/30/2014 6:48:42 AM	11467
Silver	ND	5.0		mg/L	1	1/30/2014 6:48:42 AM	11467
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Benzene	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Toluene	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Ethylbenzene	0.050	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
1,2,4-Trimethylbenzene	1.2	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
1,3,5-Trimethylbenzene	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Naphthalene	1.7	1.0		mg/Kg	10	1/30/2014 3:10:25 AM	11412
1-Methylnaphthalene	2.8	2.0		mg/Kg	10	1/30/2014 3:10:25 AM	11412
2-Methylnaphthalene	6.4	2.0		mg/Kg	10	1/30/2014 3:10:25 AM	11412
Acetone	ND	0.75		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Bromobenzene	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
Bromodichloromethane	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Bromoform	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
Bromomethane	ND	0.15		mg/Kg	1	1/29/2014 3:40:30 PM	11412
2-Butanone	ND	0.50		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Carbon disulfide	ND	0.50		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Carbon tetrachloride	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Chlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Chloroethane	ND	0.10		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Chloroform	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Chloromethane	ND	0.15		mg/Kg	1	1/29/2014 3:40:30 PM	11412
2-Chlorotoluene	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
4-Chlorotoluene	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
cis-1,2-DCE	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
1,2-Dibromo-3-chloropropane	ND	1.0		mg/Kg	10	1/30/2014 3:10:25 AM	11412
Dibromochloromethane	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Dibromomethane	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
1,2-Dichlorobenzene	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
1,3-Dichlorobenzene	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
1,4-Dichlorobenzene	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #1

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:30:00 PM

**Lab ID:** 1401A22-001

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
1,1-Dichloroethane	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
1,1-Dichloroethene	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
1,2-Dichloropropane	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
1,3-Dichloropropane	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
2,2-Dichloropropane	ND	0.10		mg/Kg	1	1/29/2014 3:40:30 PM	11412
1,1-Dichloropropene	ND	0.10		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Hexachlorobutadiene	ND	1.0		mg/Kg	10	1/30/2014 3:10:25 AM	11412
2-Hexanone	ND	0.50		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Isopropylbenzene	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
4-Isopropyltoluene	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Methylene chloride	ND	0.15		mg/Kg	1	1/29/2014 3:40:30 PM	11412
n-Butylbenzene	ND	1.5		mg/Kg	10	1/30/2014 3:10:25 AM	11412
n-Propylbenzene	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
sec-Butylbenzene	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
Styrene	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
tert-Butylbenzene	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
1,1,2,2-Tetrachloroethane	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
trans-1,2-DCE	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
1,2,3-Trichlorobenzene	ND	1.0		mg/Kg	10	1/30/2014 3:10:25 AM	11412
1,2,4-Trichlorobenzene	ND	0.50		mg/Kg	10	1/30/2014 3:10:25 AM	11412
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Trichlorofluoromethane	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
1,2,3-Trichloropropane	ND	1.0		mg/Kg	10	1/30/2014 3:10:25 AM	11412
Vinyl chloride	ND	0.050		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Xylenes, Total	0.43	0.10		mg/Kg	1	1/29/2014 3:40:30 PM	11412
Surr: Dibromofluoromethane	108	70-130		%REC	1	1/29/2014 3:40:30 PM	11412
Surr: 1,2-Dichloroethane-d4	98.2	70-130		%REC	1	1/29/2014 3:40:30 PM	11412
Surr: Toluene-d8	90.6	70-130		%REC	1	1/29/2014 3:40:30 PM	11412
Surr: 4-Bromofluorobenzene	80.2	70-130		%REC	10	1/30/2014 3:10:25 AM	11412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #2

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:32:00 PM

**Lab ID:** 1401A22-002

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	1/29/2014 8:54:45 PM	11403
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/29/2014 8:54:45 PM	11403
Surr: DNOP	101	66-131		%REC	1	1/29/2014 8:54:45 PM	11403
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JMP</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/29/2014 3:11:11 PM	11412
Surr: BFB	95.4	74.5-129		%REC	1	1/29/2014 3:11:11 PM	11412
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JMP</b>
Benzene	ND	0.050		mg/Kg	1	1/29/2014 3:11:11 PM	11412
Toluene	ND	0.050		mg/Kg	1	1/29/2014 3:11:11 PM	11412
Ethylbenzene	ND	0.050		mg/Kg	1	1/29/2014 3:11:11 PM	11412
Xylenes, Total	ND	0.10		mg/Kg	1	1/29/2014 3:11:11 PM	11412
Surr: 4-Bromofluorobenzene	105	80-120		%REC	1	1/29/2014 3:11:11 PM	11412
<b>EPA METHOD 8310: PAHS</b>							Analyst: <b>SCC</b>
Naphthalene	ND	2.5		mg/Kg	1	1/29/2014 4:36:38 AM	11419
1-Methylnaphthalene	ND	2.5		mg/Kg	1	1/29/2014 4:36:38 AM	11419
2-Methylnaphthalene	ND	2.5		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Acenaphthylene	ND	2.5		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Acenaphthene	ND	2.5		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Fluorene	ND	0.30		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Phenanthrene	ND	0.15		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Anthracene	ND	0.15		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Fluoranthene	ND	0.20		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Pyrene	ND	0.25		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Benz(a)anthracene	ND	0.10		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Chrysene	ND	0.10		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Benzo(b)fluoranthene	ND	0.10		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Benzo(k)fluoranthene	ND	0.10		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Benzo(a)pyrene	ND	0.10		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Dibenz(a,h)anthracene	ND	0.10		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Benzo(g,h,i)perylene	ND	0.10		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Indeno(1,2,3-cd)pyrene	ND	0.10		mg/Kg	1	1/29/2014 4:36:38 AM	11419
Surr: Benzo(e)pyrene	124	40-138		%REC	1	1/29/2014 4:36:38 AM	11419
<b>MERCURY, TCLP</b>							Analyst: <b>DBD</b>
Mercury	ND	0.020		mg/L	1	1/30/2014 11:06:54 AM	11470
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	5.0		mg/L	1	1/30/2014 6:49:55 AM	11467
Barium	ND	100		mg/L	1	1/30/2014 6:49:55 AM	11467

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #2

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:32:00 PM

**Lab ID:** 1401A22-002

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: ELS
Cadmium	ND	1.0		mg/L	1	1/30/2014 6:49:55 AM	11467
Chromium	ND	5.0		mg/L	1	1/30/2014 6:49:55 AM	11467
Lead	ND	5.0		mg/L	1	1/30/2014 6:49:55 AM	11467
Selenium	ND	1.0		mg/L	1	1/30/2014 6:49:55 AM	11467
Silver	ND	5.0		mg/L	1	1/30/2014 6:49:55 AM	11467
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Benzene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Toluene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Ethylbenzene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,2,4-Trimethylbenzene	0.12	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Naphthalene	0.16	0.10		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1-Methylnaphthalene	0.32	0.20		mg/Kg	1	1/30/2014 12:06:58 PM	11412
2-Methylnaphthalene	0.67	0.20		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Acetone	ND	0.75		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Bromobenzene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Bromodichloromethane	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Bromoform	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Bromomethane	ND	0.15		mg/Kg	1	1/30/2014 12:06:58 PM	11412
2-Butanone	ND	0.50		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Carbon disulfide	ND	0.50		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Carbon tetrachloride	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Chlorobenzene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Chloroethane	ND	0.10		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Chloroform	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Chloromethane	ND	0.15		mg/Kg	1	1/30/2014 12:06:58 PM	11412
2-Chlorotoluene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
4-Chlorotoluene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
cis-1,2-DCE	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Dibromochloromethane	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Dibromomethane	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #2

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:32:00 PM

**Lab ID:** 1401A22-002

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,1-Dichloroethane	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,1-Dichloroethene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,2-Dichloropropane	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,3-Dichloropropane	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
2,2-Dichloropropane	ND	0.10		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,1-Dichloropropene	ND	0.10		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Hexachlorobutadiene	ND	0.10		mg/Kg	1	1/30/2014 12:06:58 PM	11412
2-Hexanone	ND	0.50		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Isopropylbenzene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
4-Isopropyltoluene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Methylene chloride	ND	0.15		mg/Kg	1	1/30/2014 12:06:58 PM	11412
n-Butylbenzene	ND	0.15		mg/Kg	1	1/30/2014 12:06:58 PM	11412
n-Propylbenzene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
sec-Butylbenzene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Styrene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
tert-Butylbenzene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
trans-1,2-DCE	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Trichlorofluoromethane	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Vinyl chloride	ND	0.050		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Xylenes, Total	ND	0.10		mg/Kg	1	1/30/2014 12:06:58 PM	11412
Surr: Dibromofluoromethane	113	70-130		%REC	1	1/30/2014 12:06:58 PM	11412
Surr: 1,2-Dichloroethane-d4	100	70-130		%REC	1	1/30/2014 12:06:58 PM	11412
Surr: Toluene-d8	95.7	70-130		%REC	1	1/30/2014 12:06:58 PM	11412
Surr: 4-Bromofluorobenzene	85.0	70-130		%REC	1	1/30/2014 12:06:58 PM	11412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #3

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:35:00 PM

**Lab ID:** 1401A22-003

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	1/31/2014 10:12:50 AM	11403
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/31/2014 10:12:50 AM	11403
Surr: DNOP	104	66-131		%REC	1	1/31/2014 10:12:50 AM	11403
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JMP</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/28/2014 6:39:38 PM	11412
Surr: BFB	90.2	74.5-129		%REC	1	1/28/2014 6:39:38 PM	11412
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JMP</b>
Benzene	ND	0.050		mg/Kg	1	1/28/2014 6:39:38 PM	11412
Toluene	ND	0.050		mg/Kg	1	1/28/2014 6:39:38 PM	11412
Ethylbenzene	ND	0.050		mg/Kg	1	1/28/2014 6:39:38 PM	11412
Xylenes, Total	ND	0.10		mg/Kg	1	1/28/2014 6:39:38 PM	11412
Surr: 4-Bromofluorobenzene	101	80-120		%REC	1	1/28/2014 6:39:38 PM	11412
<b>EPA METHOD 8310: PAHS</b>							Analyst: <b>SCC</b>
Naphthalene	ND	1.2		mg/Kg	5	1/29/2014 5:05:57 AM	11419
1-Methylnaphthalene	ND	1.2		mg/Kg	5	1/29/2014 5:05:57 AM	11419
2-Methylnaphthalene	ND	1.2		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Acenaphthylene	ND	1.2		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Acenaphthene	ND	1.2		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Fluorene	ND	0.15		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Phenanthrene	ND	0.075		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Anthracene	ND	0.075		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Fluoranthene	ND	0.10		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Pyrene	ND	0.12		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Benz(a)anthracene	ND	0.050		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Chrysene	ND	0.050		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Benzo(b)fluoranthene	ND	0.050		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Benzo(k)fluoranthene	ND	0.050		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Benzo(a)pyrene	ND	0.050		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Dibenz(a,h)anthracene	ND	0.050		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Benzo(g,h,i)perylene	ND	0.050		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Indeno(1,2,3-cd)pyrene	ND	0.050		mg/Kg	5	1/29/2014 5:05:57 AM	11419
Surr: Benzo(e)pyrene	90.8	40-138		%REC	5	1/29/2014 5:05:57 AM	11419
<b>MERCURY, TCLP</b>							Analyst: <b>DBD</b>
Mercury	ND	0.020		mg/L	1	1/30/2014 11:08:39 AM	11470
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	5.0		mg/L	1	1/30/2014 6:54:59 AM	11467
Barium	ND	100		mg/L	1	1/30/2014 6:54:59 AM	11467

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #3

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:35:00 PM

**Lab ID:** 1401A22-003

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>ELS</b>
Cadmium	ND	1.0		mg/L	1	1/30/2014 6:54:59 AM	11467
Chromium	ND	5.0		mg/L	1	1/30/2014 6:54:59 AM	11467
Lead	ND	5.0		mg/L	1	1/30/2014 6:54:59 AM	11467
Selenium	ND	1.0		mg/L	1	1/30/2014 6:54:59 AM	11467
Silver	ND	5.0		mg/L	1	1/30/2014 6:54:59 AM	11467
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: <b>cadg</b>
Benzene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Toluene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Ethylbenzene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Naphthalene	ND	0.10		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1-Methylnaphthalene	ND	0.20		mg/Kg	1	1/29/2014 4:37:52 PM	11412
2-Methylnaphthalene	ND	0.20		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Acetone	ND	0.75		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Bromobenzene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Bromodichloromethane	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Bromoform	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Bromomethane	ND	0.15		mg/Kg	1	1/29/2014 4:37:52 PM	11412
2-Butanone	ND	0.50		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Carbon disulfide	ND	0.50		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Carbon tetrachloride	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Chlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Chloroethane	ND	0.10		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Chloroform	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Chloromethane	ND	0.15		mg/Kg	1	1/29/2014 4:37:52 PM	11412
2-Chlorotoluene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
4-Chlorotoluene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
cis-1,2-DCE	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Dibromochloromethane	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Dibromomethane	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #3

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:35:00 PM

**Lab ID:** 1401A22-003

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,1-Dichloroethane	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,1-Dichloroethene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,2-Dichloropropane	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,3-Dichloropropane	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
2,2-Dichloropropane	ND	0.10		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,1-Dichloropropene	ND	0.10		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Hexachlorobutadiene	ND	0.10		mg/Kg	1	1/29/2014 4:37:52 PM	11412
2-Hexanone	ND	0.50		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Isopropylbenzene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
4-Isopropyltoluene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Methylene chloride	ND	0.15		mg/Kg	1	1/29/2014 4:37:52 PM	11412
n-Butylbenzene	ND	0.15		mg/Kg	1	1/29/2014 4:37:52 PM	11412
n-Propylbenzene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
sec-Butylbenzene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Styrene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
tert-Butylbenzene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
trans-1,2-DCE	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Trichlorofluoromethane	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Vinyl chloride	ND	0.050		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Xylenes, Total	ND	0.10		mg/Kg	1	1/29/2014 4:37:52 PM	11412
Surr: Dibromofluoromethane	108	70-130		%REC	1	1/29/2014 4:37:52 PM	11412
Surr: 1,2-Dichloroethane-d4	96.4	70-130		%REC	1	1/29/2014 4:37:52 PM	11412
Surr: Toluene-d8	98.6	70-130		%REC	1	1/29/2014 4:37:52 PM	11412
Surr: 4-Bromofluorobenzene	96.0	70-130		%REC	1	1/29/2014 4:37:52 PM	11412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #4

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:36:00 PM

**Lab ID:** 1401A22-004

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	1/29/2014 9:38:47 PM	11403
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/29/2014 9:38:47 PM	11403
Surr: DNOP	103	66-131		%REC	1	1/29/2014 9:38:47 PM	11403
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JMP</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/28/2014 7:08:08 PM	11412
Surr: BFB	91.5	74.5-129		%REC	1	1/28/2014 7:08:08 PM	11412
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JMP</b>
Benzene	ND	0.050		mg/Kg	1	1/28/2014 7:08:08 PM	11412
Toluene	ND	0.050		mg/Kg	1	1/28/2014 7:08:08 PM	11412
Ethylbenzene	ND	0.050		mg/Kg	1	1/28/2014 7:08:08 PM	11412
Xylenes, Total	ND	0.10		mg/Kg	1	1/28/2014 7:08:08 PM	11412
Surr: 4-Bromofluorobenzene	103	80-120		%REC	1	1/28/2014 7:08:08 PM	11412
<b>EPA METHOD 8310: PAHS</b>							Analyst: <b>SCC</b>
Naphthalene	ND	0.25		mg/Kg	1	1/29/2014 5:35:12 AM	11419
1-Methylnaphthalene	ND	0.25		mg/Kg	1	1/29/2014 5:35:12 AM	11419
2-Methylnaphthalene	ND	0.25		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Acenaphthylene	ND	0.25		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Acenaphthene	ND	0.25		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Fluorene	ND	0.030		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Phenanthrene	ND	0.015		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Anthracene	ND	0.015		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Fluoranthene	ND	0.020		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Pyrene	ND	0.025		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Benz(a)anthracene	ND	0.010		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Chrysene	ND	0.010		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Benzo(b)fluoranthene	ND	0.010		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Benzo(k)fluoranthene	ND	0.010		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Benzo(a)pyrene	ND	0.010		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Dibenz(a,h)anthracene	ND	0.010		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Benzo(g,h,i)perylene	ND	0.010		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Indeno(1,2,3-cd)pyrene	ND	0.010		mg/Kg	1	1/29/2014 5:35:12 AM	11419
Surr: Benzo(e)pyrene	99.3	40-138		%REC	1	1/29/2014 5:35:12 AM	11419
<b>MERCURY, TCLP</b>							Analyst: <b>DBD</b>
Mercury	ND	0.020		mg/L	1	1/30/2014 11:10:26 AM	11470
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	5.0		mg/L	1	1/30/2014 6:56:20 AM	11467
Barium	ND	100		mg/L	1	1/30/2014 6:56:20 AM	11467

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2 for VOA and TOC only.
RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #4

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:36:00 PM

**Lab ID:** 1401A22-004

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: ELS
Cadmium	ND	1.0		mg/L	1	1/30/2014 6:56:20 AM	11467
Chromium	ND	5.0		mg/L	1	1/30/2014 6:56:20 AM	11467
Lead	ND	5.0		mg/L	1	1/30/2014 6:56:20 AM	11467
Selenium	ND	1.0		mg/L	1	1/30/2014 6:56:20 AM	11467
Silver	ND	5.0		mg/L	1	1/30/2014 6:56:20 AM	11467
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Benzene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Toluene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Ethylbenzene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Naphthalene	ND	0.10		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1-Methylnaphthalene	ND	0.20		mg/Kg	1	1/29/2014 5:06:37 PM	11412
2-Methylnaphthalene	ND	0.20		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Acetone	ND	0.75		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Bromobenzene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Bromodichloromethane	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Bromoform	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Bromomethane	ND	0.15		mg/Kg	1	1/29/2014 5:06:37 PM	11412
2-Butanone	ND	0.50		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Carbon disulfide	ND	0.50		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Carbon tetrachloride	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Chlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Chloroethane	ND	0.10		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Chloroform	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Chloromethane	ND	0.15		mg/Kg	1	1/29/2014 5:06:37 PM	11412
2-Chlorotoluene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
4-Chlorotoluene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
cis-1,2-DCE	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Dibromochloromethane	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Dibromomethane	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* 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	ND Not Detected at the Reporting Limit
	O RSD is greater than RSDlimit	P Sample pH greater than 2 for VOA and TOC only.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #4

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:36:00 PM

**Lab ID:** 1401A22-004

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,1-Dichloroethane	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,1-Dichloroethene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,2-Dichloropropane	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,3-Dichloropropane	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
2,2-Dichloropropane	ND	0.10		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,1-Dichloropropene	ND	0.10		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Hexachlorobutadiene	ND	0.10		mg/Kg	1	1/29/2014 5:06:37 PM	11412
2-Hexanone	ND	0.50		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Isopropylbenzene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
4-Isopropyltoluene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Methylene chloride	ND	0.15		mg/Kg	1	1/29/2014 5:06:37 PM	11412
n-Butylbenzene	ND	0.15		mg/Kg	1	1/29/2014 5:06:37 PM	11412
n-Propylbenzene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
sec-Butylbenzene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Styrene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
tert-Butylbenzene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
trans-1,2-DCE	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Trichlorofluoromethane	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Vinyl chloride	ND	0.050		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Xylenes, Total	ND	0.10		mg/Kg	1	1/29/2014 5:06:37 PM	11412
Surr: Dibromofluoromethane	117	70-130		%REC	1	1/29/2014 5:06:37 PM	11412
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	1	1/29/2014 5:06:37 PM	11412
Surr: Toluene-d8	91.6	70-130		%REC	1	1/29/2014 5:06:37 PM	11412
Surr: 4-Bromofluorobenzene	94.4	70-130		%REC	1	1/29/2014 5:06:37 PM	11412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #5

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:37:00 PM

**Lab ID:** 1401A22-005

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	1/29/2014 10:00:40 PM	11403
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/29/2014 10:00:40 PM	11403
Surr: DNOP	102	66-131		%REC	1	1/29/2014 10:00:40 PM	11403
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>JMP</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/28/2014 7:36:43 PM	11412
Surr: BFB	91.2	74.5-129		%REC	1	1/28/2014 7:36:43 PM	11412
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>JMP</b>
Benzene	ND	0.050		mg/Kg	1	1/28/2014 7:36:43 PM	11412
Toluene	ND	0.050		mg/Kg	1	1/28/2014 7:36:43 PM	11412
Ethylbenzene	ND	0.050		mg/Kg	1	1/28/2014 7:36:43 PM	11412
Xylenes, Total	ND	0.10		mg/Kg	1	1/28/2014 7:36:43 PM	11412
Surr: 4-Bromofluorobenzene	103	80-120		%REC	1	1/28/2014 7:36:43 PM	11412
<b>EPA METHOD 8310: PAHS</b>							Analyst: <b>SCC</b>
Naphthalene	ND	0.25		mg/Kg	1	1/29/2014 6:04:34 AM	11419
1-Methylnaphthalene	ND	0.25		mg/Kg	1	1/29/2014 6:04:34 AM	11419
2-Methylnaphthalene	ND	0.25		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Acenaphthylene	ND	0.25		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Acenaphthene	ND	0.25		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Fluorene	ND	0.030		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Phenanthrene	ND	0.015		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Anthracene	ND	0.015		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Fluoranthene	ND	0.020		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Pyrene	ND	0.025		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Benz(a)anthracene	ND	0.010		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Chrysene	ND	0.010		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Benzo(b)fluoranthene	ND	0.010		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Benzo(k)fluoranthene	ND	0.010		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Benzo(a)pyrene	ND	0.010		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Dibenz(a,h)anthracene	ND	0.010		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Benzo(g,h,i)perylene	ND	0.010		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Indeno(1,2,3-cd)pyrene	ND	0.010		mg/Kg	1	1/29/2014 6:04:34 AM	11419
Surr: Benzo(e)pyrene	93.8	40-138		%REC	1	1/29/2014 6:04:34 AM	11419
<b>MERCURY, TCLP</b>							Analyst: <b>DBD</b>
Mercury	ND	0.020		mg/L	1	1/30/2014 11:12:14 AM	11470
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	5.0		mg/L	1	1/30/2014 6:57:34 AM	11467
Barium	ND	100		mg/L	1	1/30/2014 6:57:34 AM	11467

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2 for VOA and TOC only.
RL	Reporting Detection Limit



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #5

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:37:00 PM

**Lab ID:** 1401A22-005

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: ELS
Cadmium	ND	1.0		mg/L	1	1/30/2014 6:57:34 AM	11467
Chromium	ND	5.0		mg/L	1	1/30/2014 6:57:34 AM	11467
Lead	ND	5.0		mg/L	1	1/30/2014 6:57:34 AM	11467
Selenium	ND	1.0		mg/L	1	1/30/2014 6:57:34 AM	11467
Silver	ND	5.0		mg/L	1	1/30/2014 6:57:34 AM	11467
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Benzene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Toluene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Ethylbenzene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Naphthalene	ND	0.10		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1-Methylnaphthalene	ND	0.20		mg/Kg	1	1/29/2014 5:35:27 PM	11412
2-Methylnaphthalene	ND	0.20		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Acetone	ND	0.75		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Bromobenzene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Bromodichloromethane	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Bromoform	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Bromomethane	ND	0.15		mg/Kg	1	1/29/2014 5:35:27 PM	11412
2-Butanone	ND	0.50		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Carbon disulfide	ND	0.50		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Carbon tetrachloride	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Chlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Chloroethane	ND	0.10		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Chloroform	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Chloromethane	ND	0.15		mg/Kg	1	1/29/2014 5:35:27 PM	11412
2-Chlorotoluene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
4-Chlorotoluene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
cis-1,2-DCE	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Dibromochloromethane	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Dibromomethane	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2 for VOA and TOC only.
RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #5

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:37:00 PM

**Lab ID:** 1401A22-005

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,1-Dichloroethane	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,1-Dichloroethene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,2-Dichloropropane	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,3-Dichloropropane	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
2,2-Dichloropropane	ND	0.10		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,1-Dichloropropene	ND	0.10		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Hexachlorobutadiene	ND	0.10		mg/Kg	1	1/29/2014 5:35:27 PM	11412
2-Hexanone	ND	0.50		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Isopropylbenzene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
4-Isopropyltoluene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Methylene chloride	ND	0.15		mg/Kg	1	1/29/2014 5:35:27 PM	11412
n-Butylbenzene	ND	0.15		mg/Kg	1	1/29/2014 5:35:27 PM	11412
n-Propylbenzene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
sec-Butylbenzene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Styrene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
tert-Butylbenzene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
trans-1,2-DCE	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Trichlorofluoromethane	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Vinyl chloride	ND	0.050		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Xylenes, Total	ND	0.10		mg/Kg	1	1/29/2014 5:35:27 PM	11412
Surr: Dibromofluoromethane	107	70-130		%REC	1	1/29/2014 5:35:27 PM	11412
Surr: 1,2-Dichloroethane-d4	100	70-130		%REC	1	1/29/2014 5:35:27 PM	11412
Surr: Toluene-d8	94.7	70-130		%REC	1	1/29/2014 5:35:27 PM	11412
Surr: 4-Bromofluorobenzene	97.0	70-130		%REC	1	1/29/2014 5:35:27 PM	11412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* 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	ND Not Detected at the Reporting Limit
	O RSD is greater than RSDlimit	P Sample pH greater than 2 for VOA and TOC only.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #6

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:40:00 PM

**Lab ID:** 1401A22-006

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	160	10		mg/Kg	1	1/30/2014 3:09:19 PM	11403
Motor Oil Range Organics (MRO)	280	50		mg/Kg	1	1/30/2014 3:09:19 PM	11403
Surr: DNOP	112	66-131		%REC	1	1/30/2014 3:09:19 PM	11403
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: JMP
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/28/2014 9:59:26 PM	11412
Surr: BFB	93.3	74.5-129		%REC	1	1/28/2014 9:59:26 PM	11412
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: JMP
Benzene	ND	0.050		mg/Kg	1	1/28/2014 9:59:26 PM	11412
Toluene	ND	0.050		mg/Kg	1	1/28/2014 9:59:26 PM	11412
Ethylbenzene	ND	0.050		mg/Kg	1	1/28/2014 9:59:26 PM	11412
Xylenes, Total	ND	0.10		mg/Kg	1	1/28/2014 9:59:26 PM	11412
Surr: 4-Bromofluorobenzene	102	80-120		%REC	1	1/28/2014 9:59:26 PM	11412
<b>EPA METHOD 8310: PAHS</b>							Analyst: SCC
Naphthalene	ND	12		mg/Kg	5	1/29/2014 6:33:47 AM	11419
1-Methylnaphthalene	ND	12		mg/Kg	5	1/29/2014 6:33:47 AM	11419
2-Methylnaphthalene	ND	12		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Acenaphthylene	ND	12		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Acenaphthene	ND	12		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Fluorene	ND	1.5		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Phenanthrene	ND	0.75		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Anthracene	ND	0.75		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Fluoranthene	ND	1.0		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Pyrene	ND	1.2		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Benz(a)anthracene	ND	0.50		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Chrysene	1.5	0.50		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Benzo(b)fluoranthene	0.77	0.50		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Benzo(k)fluoranthene	ND	0.50		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Benzo(a)pyrene	ND	0.50		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Dibenz(a,h)anthracene	ND	0.50		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Benzo(g,h,i)perylene	1.9	0.50		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Indeno(1,2,3-cd)pyrene	2.2	0.50		mg/Kg	5	1/29/2014 6:33:47 AM	11419
Surr: Benzo(e)pyrene	0	40-138	S	%REC	5	1/29/2014 6:33:47 AM	11419
<b>MERCURY, TCLP</b>							Analyst: DBD
Mercury	ND	0.020		mg/L	1	1/30/2014 11:14:03 AM	11470
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: ELS
Arsenic	ND	5.0		mg/L	1	1/30/2014 6:58:51 AM	11467
Barium	ND	100		mg/L	1	1/30/2014 6:58:51 AM	11467

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2 for VOA and TOC only.
RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #6

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:40:00 PM

**Lab ID:** 1401A22-006

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: ELS
Cadmium	ND	1.0		mg/L	1	1/30/2014 6:58:51 AM	11467
Chromium	ND	5.0		mg/L	1	1/30/2014 6:58:51 AM	11467
Lead	ND	5.0		mg/L	1	1/30/2014 6:58:51 AM	11467
Selenium	ND	1.0		mg/L	1	1/30/2014 6:58:51 AM	11467
Silver	ND	5.0		mg/L	1	1/30/2014 6:58:51 AM	11467
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Benzene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Toluene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Ethylbenzene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Naphthalene	ND	0.10		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1-Methylnaphthalene	ND	0.20		mg/Kg	1	1/29/2014 6:04:16 PM	11412
2-Methylnaphthalene	ND	0.20		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Acetone	ND	0.75		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Bromobenzene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Bromodichloromethane	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Bromoform	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Bromomethane	ND	0.15		mg/Kg	1	1/29/2014 6:04:16 PM	11412
2-Butanone	ND	0.50		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Carbon disulfide	ND	0.50		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Carbon tetrachloride	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Chlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Chloroethane	ND	0.10		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Chloroform	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Chloromethane	ND	0.15		mg/Kg	1	1/29/2014 6:04:16 PM	11412
2-Chlorotoluene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
4-Chlorotoluene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
cis-1,2-DCE	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Dibromochloromethane	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Dibromomethane	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2 for VOA and TOC only.
RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #6

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:40:00 PM

**Lab ID:** 1401A22-006

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,1-Dichloroethane	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,1-Dichloroethene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,2-Dichloropropane	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,3-Dichloropropane	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
2,2-Dichloropropane	ND	0.10		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,1-Dichloropropene	ND	0.10		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Hexachlorobutadiene	ND	0.10		mg/Kg	1	1/29/2014 6:04:16 PM	11412
2-Hexanone	ND	0.50		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Isopropylbenzene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
4-Isopropyltoluene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Methylene chloride	ND	0.15		mg/Kg	1	1/29/2014 6:04:16 PM	11412
n-Butylbenzene	ND	0.15		mg/Kg	1	1/29/2014 6:04:16 PM	11412
n-Propylbenzene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
sec-Butylbenzene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Styrene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
tert-Butylbenzene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
trans-1,2-DCE	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Trichlorofluoromethane	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Vinyl chloride	ND	0.050		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Xylenes, Total	ND	0.10		mg/Kg	1	1/29/2014 6:04:16 PM	11412
Surr: Dibromofluoromethane	104	70-130		%REC	1	1/29/2014 6:04:16 PM	11412
Surr: 1,2-Dichloroethane-d4	92.2	70-130		%REC	1	1/29/2014 6:04:16 PM	11412
Surr: Toluene-d8	95.5	70-130		%REC	1	1/29/2014 6:04:16 PM	11412
Surr: 4-Bromofluorobenzene	99.8	70-130		%REC	1	1/29/2014 6:04:16 PM	11412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #7

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:43:00 PM

**Lab ID:** 1401A22-007

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	310	10		mg/Kg	1	1/30/2014 3:40:21 PM	11403
Motor Oil Range Organics (MRO)	130	50		mg/Kg	1	1/30/2014 3:40:21 PM	11403
Surr: DNOP	112	66-131		%REC	1	1/30/2014 3:40:21 PM	11403
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: JMP
Gasoline Range Organics (GRO)	60	10		mg/Kg	2	1/29/2014 3:39:43 PM	11412
Surr: BFB	202	74.5-129	S	%REC	2	1/29/2014 3:39:43 PM	11412
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: JMP
Benzene	ND	0.10		mg/Kg	2	1/29/2014 3:39:43 PM	11412
Toluene	ND	0.10		mg/Kg	2	1/29/2014 3:39:43 PM	11412
Ethylbenzene	ND	0.10		mg/Kg	2	1/29/2014 3:39:43 PM	11412
Xylenes, Total	1.9	0.20		mg/Kg	2	1/29/2014 3:39:43 PM	11412
Surr: 4-Bromofluorobenzene	114	80-120		%REC	2	1/29/2014 3:39:43 PM	11412
<b>EPA METHOD 8310: PAHS</b>							Analyst: SCC
Naphthalene	ND	13		mg/Kg	5	1/29/2014 7:03:08 AM	11419
1-Methylnaphthalene	ND	13		mg/Kg	5	1/29/2014 7:03:08 AM	11419
2-Methylnaphthalene	18	13		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Acenaphthylene	ND	13		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Acenaphthene	ND	13		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Fluorene	ND	1.5		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Phenanthrene	ND	0.75		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Anthracene	ND	0.75		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Fluoranthene	ND	1.0		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Pyrene	ND	1.3		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Benz(a)anthracene	ND	0.50		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Chrysene	0.53	0.50		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Benzo(b)fluoranthene	ND	0.50		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Benzo(k)fluoranthene	ND	0.50		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Benzo(a)pyrene	ND	0.50		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Dibenz(a,h)anthracene	ND	0.50		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Benzo(g,h,i)perylene	ND	0.50		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Indeno(1,2,3-cd)pyrene	ND	0.50		mg/Kg	5	1/29/2014 7:03:08 AM	11419
Surr: Benzo(e)pyrene	0	40-138	S	%REC	5	1/29/2014 7:03:08 AM	11419
<b>MERCURY, TCLP</b>							Analyst: DBD
Mercury	ND	0.020		mg/L	1	1/30/2014 11:19:30 AM	11470
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: ELS
Arsenic	ND	5.0		mg/L	1	1/30/2014 7:00:05 AM	11467
Barium	ND	100		mg/L	1	1/30/2014 7:00:05 AM	11467

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2 for VOA and TOC only.
RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #7

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:43:00 PM

**Lab ID:** 1401A22-007

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: ELS
Cadmium	ND	1.0		mg/L	1	1/30/2014 7:00:05 AM	11467
Chromium	ND	5.0		mg/L	1	1/30/2014 7:00:05 AM	11467
Lead	ND	5.0		mg/L	1	1/30/2014 7:00:05 AM	11467
Selenium	ND	1.0		mg/L	1	1/30/2014 7:00:05 AM	11467
Silver	ND	5.0		mg/L	1	1/30/2014 7:00:05 AM	11467
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Benzene	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Toluene	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Ethylbenzene	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
1,2,4-Trimethylbenzene	2.6	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
1,3,5-Trimethylbenzene	0.80	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Naphthalene	1.4	1.0		mg/Kg	10	1/30/2014 12:35:40 PM	11412
1-Methylnaphthalene	2.6	2.0		mg/Kg	10	1/30/2014 12:35:40 PM	11412
2-Methylnaphthalene	5.1	2.0		mg/Kg	10	1/30/2014 12:35:40 PM	11412
Acetone	ND	0.75		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Bromobenzene	ND	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
Bromodichloromethane	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Bromoform	ND	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
Bromomethane	ND	0.15		mg/Kg	1	1/29/2014 6:33:09 PM	11412
2-Butanone	ND	0.50		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Carbon disulfide	ND	0.50		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Carbon tetrachloride	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Chlorobenzene	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Chloroethane	ND	0.10		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Chloroform	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Chloromethane	ND	0.15		mg/Kg	1	1/29/2014 6:33:09 PM	11412
2-Chlorotoluene	ND	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
4-Chlorotoluene	ND	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
cis-1,2-DCE	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
1,2-Dibromo-3-chloropropane	ND	1.0		mg/Kg	10	1/30/2014 12:35:40 PM	11412
Dibromochloromethane	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Dibromomethane	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
1,2-Dichlorobenzene	ND	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
1,3-Dichlorobenzene	ND	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
1,4-Dichlorobenzene	ND	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1401A22

Date Reported: 1/31/2014

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #7

**Project:** Flare Spill Dirt Pile

**Collection Date:** 1/21/2014 12:43:00 PM

**Lab ID:** 1401A22-007

**Matrix:** SOIL

**Received Date:** 1/24/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
1,1-Dichloroethane	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
1,1-Dichloroethene	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
1,2-Dichloropropane	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
1,3-Dichloropropane	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
2,2-Dichloropropane	ND	0.10		mg/Kg	1	1/29/2014 6:33:09 PM	11412
1,1-Dichloropropene	ND	0.10		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Hexachlorobutadiene	ND	1.0		mg/Kg	10	1/30/2014 12:35:40 PM	11412
2-Hexanone	ND	0.50		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Isopropylbenzene	ND	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
4-Isopropyltoluene	ND	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Methylene chloride	ND	0.15		mg/Kg	1	1/29/2014 6:33:09 PM	11412
n-Butylbenzene	ND	1.5		mg/Kg	10	1/30/2014 12:35:40 PM	11412
n-Propylbenzene	ND	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
sec-Butylbenzene	ND	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
Styrene	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
tert-Butylbenzene	ND	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
1,1,2,2-Tetrachloroethane	ND	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
trans-1,2-DCE	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
1,2,3-Trichlorobenzene	ND	1.0		mg/Kg	10	1/30/2014 12:35:40 PM	11412
1,2,4-Trichlorobenzene	ND	0.50		mg/Kg	10	1/30/2014 12:35:40 PM	11412
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Trichlorofluoromethane	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
1,2,3-Trichloropropane	ND	1.0		mg/Kg	10	1/30/2014 12:35:40 PM	11412
Vinyl chloride	ND	0.050		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Xylenes, Total	1.9	0.10		mg/Kg	1	1/29/2014 6:33:09 PM	11412
Surr: Dibromofluoromethane	114	70-130		%REC	1	1/29/2014 6:33:09 PM	11412
Surr: 1,2-Dichloroethane-d4	103	70-130		%REC	1	1/29/2014 6:33:09 PM	11412
Surr: Toluene-d8	97.5	70-130		%REC	1	1/29/2014 6:33:09 PM	11412
Surr: 4-Bromofluorobenzene	80.6	70-130		%REC	10	1/30/2014 12:35:40 PM	11412

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		





12065 Lebanon Rd.  
Mt. Juliet, TN 37122  
(615) 758-5858  
1-800-767-5859  
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

# REPORT OF ANALYSIS

January 31, 2014

Anne Thorne  
Hall Environmental Analysis Laborat  
4901 Hawkins NE  
Albuquerque, NM 87109

Date Received : January 28, 2014  
Description :

Sample ID : 1401A22-001B 1

Collected By :  
Collection Date : 01/21/14 12:30

ESC Sample # : L680130-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	Non-Corrosive			9045D	01/29/14	1
Ignitability	See Footnote		Deg. F	D93/1010A	01/30/14	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/kg	9012B	01/30/14	1
Reactive Sulf. (SW846 7.3.4.1)	BDL	25.	mg/kg	9034/9030B	01/30/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 01/31/14 09:39 Printed: 01/31/14 09:40  
L680130-01 (IGNITABILITY) - Did Not Ignite @ 170 F



12065 Lebanon Rd.  
Mt. Juliet, TN 37122  
(615) 758-5858  
1-800-767-5859  
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

# REPORT OF ANALYSIS

January 31, 2014

Anne Thorne  
Hall Environmental Analysis Laborat  
4901 Hawkins NE  
Albuquerque, NM 87109

Date Received : January 28, 2014  
Description :

Sample ID : 1401A22-002B 2

Collected By :  
Collection Date : 01/21/14 12:32

ESC Sample # : L680130-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	Non-Corrosive			9045D	01/29/14	1
Ignitability	See Footnote		Deg. F	D93/1010A	01/30/14	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/kg	9012B	01/30/14	1
Reactive Sulf.(SW846 7.3.4.1)	BDL	25.	mg/kg	9034/9030B	01/30/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 01/31/14 09:39 Printed: 01/31/14 09:40  
L680130-02 (IGNITABILITY) - Did Not Ignite @ 170 F



12065 Lebanon Rd.  
Mt. Juliet, TN 37122  
(615) 758-5858  
1-800-767-5859  
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

# REPORT OF ANALYSIS

January 31, 2014

Anne Thorne  
Hall Environmental Analysis Laborat  
4901 Hawkins NE  
Albuquerque, NM 87109

Date Received : January 28, 2014  
Description :  
Sample ID : 1401A22-003B 3  
Collected By :  
Collection Date : 01/21/14 12:35

ESC Sample # : L680130-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	Non-Corrosive			9045D	01/29/14	1
Ignitability	See Footnote		Deg. F	D93/1010A	01/30/14	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/kg	9012B	01/30/14	1
Reactive Sulf. (SW846 7.3.4.1)	BDL	25.	mg/kg	9034/9030B	01/30/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 01/31/14 09:39 Printed: 01/31/14 09:40  
L680130-03 (IGNITABILITY) - Did Not Ignite @ 170 F



12065 Lebanon Rd.  
Mt. Juliet, TN 37122  
(615) 758-5858  
1-800-767-5859  
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

# REPORT OF ANALYSIS

Anne Thorne  
Hall Environmental Analysis Laborat  
4901 Hawkins NE  
Albuquerque, NM 87109

January 31, 2014

Date Received : January 28, 2014  
Description :

Sample ID : 1401A22-004B

Collected By :  
Collection Date : 01/21/14 12:36

ESC Sample # : L680130-04

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	Non-Corrosive			9045D	01/29/14	1
Ignitability	See Footnote		Deg. F	D93/1010A	01/30/14	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/kg	9012B	01/30/14	1
Reactive Sulf.(SW846 7.3.4.1)	BDL	25.	mg/kg	9034/9030B	01/30/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 01/31/14 09:39 Printed: 01/31/14 09:40  
L680130-04 (IGNITABILITY) - Did Not Ignite @ 170 F



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# REPORT OF ANALYSIS

January 31, 2014

Anne Thorne  
Hall Environmental Analysis Laborat  
4901 Hawkins NE  
Albuquerque, NM 87109

Date Received : January 28, 2014  
Description :  
Sample ID : 1401A22-005B 5  
Collected By :  
Collection Date : 01/21/14 12:37

ESC Sample # : L680130-05

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	Non-Corrosive			9045D	01/29/14	1
Ignitability	See Footnote		Deg. F	D93/1010A	01/30/14	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/kg	9012B	01/30/14	1
Reactive Sulf.(SW846 7.3.4.1)	BDL	25.	mg/kg	9034/9030B	01/30/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 01/31/14 09:39 Printed: 01/31/14 09:40  
L680130-05 (IGNITABILITY) - Did Not Ignite @ 170 F



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1-800-767-5859  
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

# REPORT OF ANALYSIS

January 31, 2014

Anne Thorne  
Hall Environmental Analysis Laborat  
4901 Hawkins NE  
Albuquerque, NM 87109

Date Received : January 28, 2014  
Description :

Sample ID : 1401A22-006B 6

Collected By :  
Collection Date : 01/21/14 12:40

ESC Sample # : L680130-06

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	Non-Corrosive			9045D	01/29/14	1
Ignitability	See Footnote		Deg. F	D93/1010A	01/30/14	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/kg	9012B	01/30/14	1
Reactive Sulf. (SW846 7.3.4.1)	BDL	25.	mg/kg	9034/9030B	01/30/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 01/31/14 09:39 Printed: 01/31/14 09:40  
L680130-06 (IGNITABILITY) - Did Not Ignite @ 170 F



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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

# REPORT OF ANALYSIS

January 31, 2014

Anne Thorne  
Hall Environmental Analysis Laborat  
4901 Hawkins NE  
Albuquerque, NM 87109

Date Received : January 28, 2014  
Description :  
Sample ID : 1401A22-007B 7  
Collected By :  
Collection Date : 01/21/14 12:43

ESC Sample # : L680130-07

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	Non-Corrosive			9045D	01/29/14	1
Ignitability	See Footnote		Deg. F	D93/1010A	01/30/14	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/kg	9012B	01/30/14	1
Reactive Sulf. (SW846 7.3.4.1)	BDL	25.	mg/kg	9034/9030B	01/30/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 01/31/14 09:39 Printed: 01/31/14 09:40  
L680130-07 (IGNITABILITY) - Did Not Ignite @ 170 F



YOUR LAB OF CHOICE

Hall Environmental Analysis Laboratory  
Anne Thorne  
4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report  
Level II

L680130

12065 Lebanon Rd.  
Mt. Juliet, TN 37122  
(615) 758-5858  
1-800-767-5859  
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

January 31, 2014

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Reactive Sulf. (SW846 7.3.4.1)	< 25	mg/kg			WG703685	01/30/14 15:00
Reactive CN (SW846 7.3.3.2)	< .125	mg/kg			WG703688	01/30/14 20:35

Analyte	Units	Result	Duplicate		RPD	Limit	Ref Samp	Batch
			Duplicate	% Rec				
Corrosivity		0.0	0.0	0.0	0.0	10	L680117-01	WG703730
Corrosivity		0.0	0.0	0.0	0.0	10	L680130-07	WG703730
Ignitability	Deg. F	0.00	0.00	0.00	0.00	10	L680117-01	WG703902
Ignitability	Deg. F	0.00	0.00	0.00	0.00	10	L680130-07	WG703902
Reactive Sulf. (SW846 7.3.4.1)	mg/kg	0.0	0.0	0.0	0.0	20	L680007-01	WG703685
Reactive Sulf. (SW846 7.3.4.1)	mg/kg	0.0	0.0	0.0	0.0	20	L680142-09	WG703685
Reactive CN (SW846 7.3.3.2)	mg/kg	0.0	0.0	0.0	0.0	20	L680007-01	WG703688
Reactive CN (SW846 7.3.3.2)	mg/kg	0.0	0.0	0.0	0.0	20	L680142-09	WG703688

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Corrosivity		5.93	5.90	99.5	98.3-101.7	WG703730
Ignitability	Deg. F	82	83.0	101.	93-107	WG703902
Reactive Sulf. (SW846 7.3.4.1)	mg/kg	100	110.	110.	70-130	WG703685

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	% Rec				
Corrosivity		5.90	5.90	99.0	98.3-101.7	0.0	10	WG703730
Ignitability	Deg. F	83.0	83.0	101.	93-107	0.00	20	WG703902
Reactive Sulf. (SW846 7.3.4.1)	mg/kg	100.	110.	100.	70-130	9.52	20	WG703685

Batch number / Run number / Sample number cross reference

WG703730: R2880753: L680130-01 02 03 04 05 06 07  
WG703902: R2880972: L680130-01 02 03 04 05 06 07  
WG703685: R2881002: L680130-01 02 03 04 05 06 07  
WG703688: R2881107: L680130-01 02 03 04 05 06 07

\* \* Calculations are performed prior to rounding of reported values.

\* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401A22

31-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Spill Dirt Pile

Sample ID	MB-11403		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 11403		RunNo: 16359					
Prep Date:	1/27/2014		Analysis Date: 1/29/2014		SeqNo: 472322		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		103	66	131			

Sample ID	LCS-11403		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 11403		RunNo: 16359					
Prep Date:	1/27/2014		Analysis Date: 1/29/2014		SeqNo: 472323		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	103	60.8	145			
Surr: DNOP	5.3		5.000		105	66	131			

Sample ID	MB-11441		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 11441		RunNo: 16383					
Prep Date:	1/28/2014		Analysis Date: 1/30/2014		SeqNo: 473349		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.5		10.00		84.9	66	131			

Sample ID	LCS-11441		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 11441		RunNo: 16383					
Prep Date:	1/28/2014		Analysis Date: 1/30/2014		SeqNo: 473351		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	3.9		5.000		78.6	66	131			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401A22

31-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Spill Dirt Pile

Sample ID	MB-11412		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 11412		RunNo: 16351					
Prep Date:	1/27/2014		Analysis Date: 1/28/2014		SeqNo: 471380		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	880		1000		88.3	74.5	129			

Sample ID	LCS-11412		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 11412		RunNo: 16351					
Prep Date:	1/27/2014		Analysis Date: 1/28/2014		SeqNo: 471381		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	107	74.5	126			
Surr: BFB	940		1000		94.2	74.5	129			

Sample ID	MB-11450		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 11450		RunNo: 16363					
Prep Date:	1/28/2014		Analysis Date: 1/29/2014		SeqNo: 472127		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	900		1000		90.5	74.5	129			

Sample ID	LCS-11450		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 11450		RunNo: 16363					
Prep Date:	1/28/2014		Analysis Date: 1/29/2014		SeqNo: 472128		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	960		1000		96.0	74.5	129			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401A22

31-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Spill Dirt Pile

Sample ID	<b>MB-11412</b>		SampType:	<b>MBLK</b>		TestCode:	<b>EPA Method 8021B: Volatiles</b>			
Client ID:	<b>PBS</b>		Batch ID:	<b>11412</b>		RunNo:	<b>16351</b>			
Prep Date:	<b>1/27/2014</b>		Analysis Date:	<b>1/28/2014</b>		SeqNo:	<b>471415</b>		Units: <b>mg/Kg</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		100	80	120			

Sample ID	<b>LCS-11412</b>		SampType:	<b>LCS</b>		TestCode:	<b>EPA Method 8021B: Volatiles</b>			
Client ID:	<b>LCSS</b>		Batch ID:	<b>11412</b>		RunNo:	<b>16351</b>			
Prep Date:	<b>1/27/2014</b>		Analysis Date:	<b>1/28/2014</b>		SeqNo:	<b>471416</b>		Units: <b>mg/Kg</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	1.000	0	106	80	120			
Toluene	1.1	0.050	1.000	0	108	80	120			
Ethylbenzene	1.1	0.050	1.000	0	108	80	120			
Xylenes, Total	3.2	0.10	3.000	0	108	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		105	80	120			

Sample ID	<b>MB-11450</b>		SampType:	<b>MBLK</b>		TestCode:	<b>EPA Method 8021B: Volatiles</b>			
Client ID:	<b>PBS</b>		Batch ID:	<b>11450</b>		RunNo:	<b>16363</b>			
Prep Date:	<b>1/28/2014</b>		Analysis Date:	<b>1/29/2014</b>		SeqNo:	<b>472159</b>		Units: <b>%REC</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

Sample ID	<b>LCS-11450</b>		SampType:	<b>LCS</b>		TestCode:	<b>EPA Method 8021B: Volatiles</b>			
Client ID:	<b>LCSS</b>		Batch ID:	<b>11450</b>		RunNo:	<b>16363</b>			
Prep Date:	<b>1/28/2014</b>		Analysis Date:	<b>1/29/2014</b>		SeqNo:	<b>472160</b>		Units: <b>%REC</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		107	80	120			

Sample ID	<b>1401A22-001AMS</b>		SampType:	<b>MS</b>		TestCode:	<b>EPA Method 8021B: Volatiles</b>			
Client ID:	<b>#1</b>		Batch ID:	<b>11412</b>		RunNo:	<b>16363</b>			
Prep Date:	<b>1/27/2014</b>		Analysis Date:	<b>1/29/2014</b>		SeqNo:	<b>472162</b>		Units: <b>mg/Kg</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.10	0.9970	0	93.6	67.4	135			
Toluene	1.0	0.10	0.9970	0.02666	98.4	72.6	135			
Ethylbenzene	1.0	0.10	0.9970	0.05631	97.8	69.4	143			
Xylenes, Total	3.4	0.20	2.991	0.4270	98.9	70.8	144			

### 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      | ND Not Detected at the Reporting Limit               |
| O RSD is greater than RSDlimit                    | P Sample pH greater than 2 for VOA and TOC only.     |
| R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
| S Spike Recovery outside accepted recovery limits |  |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401A22

31-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Spill Dirt Pile

Sample ID	1401A22-001AMS	SampType:	MS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	#1	Batch ID:	11412	RunNo:	16363					
Prep Date:	1/27/2014	Analysis Date:	1/29/2014	SeqNo:	472162	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	2.2		1.994		109	80	120			

Sample ID	1401A22-001AMSD	SampType:	MSD	TestCode: EPA Method 8021B: Volatiles						
Client ID:	#1	Batch ID:	11412	RunNo: 16363						
Prep Date:	1/27/2014	Analysis Date:	1/29/2014	SeqNo: 472163		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.10	0.9980	0	105	67.4	135	11.4	20	
Toluene	1.1	0.10	0.9980	0.02666	106	72.6	135	7.04	20	
Ethylbenzene	1.1	0.10	0.9980	0.05631	107	69.4	143	8.81	20	
Xylenes, Total	3.6	0.20	2.994	0.4270	106	70.8	144	6.50	20	
Surr: 4-Bromofluorobenzene	2.1		1.996		106	80	120	0	0	

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401A22

31-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Spill Dirt Pile

Sample ID	<b>mb-11450</b>		SampType:	<b>MBLK</b>		TestCode:	<b>EPA Method 8260B: Volatiles</b>			
Client ID:	<b>PBS</b>		Batch ID:	<b>11450</b>		RunNo:	<b>16373</b>			
Prep Date:	<b>1/28/2014</b>		Analysis Date:	<b>1/29/2014</b>		SeqNo:	<b>472210</b>		Units: <b>%REC</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.54		0.5000		107	70	130			
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		91.2	70	130			
Surr: Toluene-d8	0.42		0.5000		84.8	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		93.4	70	130			

Sample ID	<b>lcs-11450</b>		SampType:	<b>LCS</b>		TestCode:	<b>EPA Method 8260B: Volatiles</b>			
Client ID:	<b>LCSS</b>		Batch ID:	<b>11450</b>		RunNo:	<b>16373</b>			
Prep Date:	<b>1/28/2014</b>		Analysis Date:	<b>1/29/2014</b>		SeqNo:	<b>472212</b>		Units: <b>%REC</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.57		0.5000		113	70	130			
Surr: 1,2-Dichloroethane-d4	0.55		0.5000		111	70	130			
Surr: Toluene-d8	0.54		0.5000		108	70	130			
Surr: 4-Bromofluorobenzene	0.45		0.5000		90.8	70	130			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401A22

31-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Spill Dirt Pile

Sample ID	<b>MB-11419</b>		SampType:	<b>MBLK</b>		TestCode:	<b>EPA Method 8310: PAHs</b>			
Client ID:	<b>PBS</b>		Batch ID:	<b>11419</b>		RunNo:	<b>16327</b>			
Prep Date:	<b>1/27/2014</b>		Analysis Date:	<b>1/29/2014</b>		SeqNo:	<b>471395</b>		Units: <b>mg/Kg</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	0.25								
1-Methylnaphthalene	ND	0.25								
2-Methylnaphthalene	ND	0.25								
Acenaphthylene	ND	0.25								
Acenaphthene	ND	0.25								
Fluorene	ND	0.030								
Phenanthrene	ND	0.015								
Anthracene	ND	0.015								
Fluoranthene	ND	0.020								
Pyrene	ND	0.025								
Benz(a)anthracene	ND	0.010								
Chrysene	ND	0.010								
Benzo(b)fluoranthene	ND	0.010								
Benzo(k)fluoranthene	ND	0.010								
Benzo(a)pyrene	ND	0.010								
Dibenz(a,h)anthracene	ND	0.010								
Benzo(g,h,i)perylene	ND	0.010								
Indeno(1,2,3-cd)pyrene	ND	0.010								
Surr: Benzo(e)pyrene	0.40		0.5000		80.0	40	138			

Sample ID	<b>LCS-11419</b>		SampType:	<b>LCS</b>		TestCode:	<b>EPA Method 8310: PAHs</b>			
Client ID:	<b>LCSS</b>		Batch ID:	<b>11419</b>		RunNo:	<b>16327</b>			
Prep Date:	<b>1/27/2014</b>		Analysis Date:	<b>1/29/2014</b>		SeqNo:	<b>471396</b>		Units: <b>mg/Kg</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	1.1	0.25	2.000	0	54.6	43.1	105			
1-Methylnaphthalene	0.98	0.25	2.000	0	48.8	39	98.6			
2-Methylnaphthalene	0.91	0.25	2.000	0	45.4	33.5	99.5			
Acenaphthylene	1.3	0.25	2.000	0	62.6	46.8	109			
Acenaphthene	0.99	0.25	2.000	0	49.6	37.8	101			
Fluorene	0.11	0.030	0.2000	0	53.2	41.8	98.6			
Phenanthrene	0.059	0.015	0.1006	0	58.2	42.3	118			
Anthracene	0.060	0.015	0.1006	0	60.1	43.7	107			
Fluoranthene	0.14	0.020	0.2006	0	68.0	44.9	114			
Pyrene	0.14	0.025	0.2000	0	69.6	37	109			
Benz(a)anthracene	0.013	0.010	0.02000	0	62.5	42.2	121			
Chrysene	0.059	0.010	0.1006	0	58.9	43.4	104			
Benzo(b)fluoranthene	0.016	0.010	0.02500	0	63.0	46.3	128			
Benzo(k)fluoranthene	ND	0.010	0.01250	0	64.0	44.8	128			

### 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      | ND Not Detected at the Reporting Limit               |
| O RSD is greater than RSDlimit                    | P Sample pH greater than 2 for VOA and TOC only.     |
| R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
| S Spike Recovery outside accepted recovery limits |  |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401A22

31-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Spill Dirt Pile

Sample ID	LCS-11419		SampType: LCS		TestCode: EPA Method 8310: PAHs					
Client ID:	LCSS		Batch ID: 11419		RunNo: 16327					
Prep Date:	1/27/2014		Analysis Date: 1/29/2014		SeqNo: 471396		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzo(a)pyrene	ND	0.010	0.01250	0	62.0	38.3	117			
Dibenz(a,h)anthracene	0.016	0.010	0.02500	0	63.0	45.2	114			
Benzo(g,h,i)perylene	0.014	0.010	0.02500	0	58.0	39.5	121			
Indeno(1,2,3-cd)pyrene	0.034	0.010	0.05002	0	69.0	51.7	114			
Surr: Benzo(e)pyrene	0.38		0.5000		76.4	40	138			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401A22

31-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Spill Dirt Pile

Sample ID	MB-11470		SampType: MBLK		TestCode: MERCURY, TCLP					
Client ID:	PBW		Batch ID: 11470		RunNo: 16400					
Prep Date:	1/29/2014		Analysis Date: 1/30/2014		SeqNo: 473022		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercurv	ND	0.020								

Sample ID	LCS-11470			SampType:	LCS		TestCode:	MERCURY, TCLP			
Client ID:	LCSW			Batch ID:	11470		RunNo:	16400			
Prep Date:	1/29/2014			Analysis Date:	1/30/2014		SeqNo:	473023		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.020	0.005000	0	97.4	80	120				

Sample ID	1401A22-006AMS			SampType:	MS		TestCode:	MERCURY, TCLP			
Client ID:	#6			Batch ID:	11470		RunNo:	16400			
Prep Date:	1/29/2014			Analysis Date:	1/30/2014		SeqNo:	473035		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.020	0.005000	0	99.2	75	125				

Sample ID	1401A22-006AMSD			SampType:	MSD		TestCode:	MERCURY, TCLP			
Client ID:	#6			Batch ID:	11470		RunNo:	16400			
Prep Date:	1/29/2014			Analysis Date:	1/30/2014		SeqNo:	473036		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.020	0.005000	0	97.7	75	125	0	20		

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401A22

31-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Spill Dirt Pile

Sample ID	MB-11467		SampType: MBLK		TestCode: EPA Method 6010B: TCLP Metals					
Client ID:	PBW		Batch ID: 11467		RunNo: 16378					
Prep Date:	1/29/2014		Analysis Date: 1/30/2014		SeqNo: 472331		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	5.0								
Barium	ND	100								
Cadmium	ND	1.0								
Chromium	ND	5.0								
Lead	ND	5.0								
Selenium	ND	1.0								
Silver	ND	5.0								

Sample ID	LCS-11467			SampType:	LCS		TestCode:	EPA Method 6010B: TCLP Metals				
Client ID:	LCSW			Batch ID:	11467		RunNo:	16378				
Prep Date:	1/29/2014			Analysis Date:	1/30/2014		SeqNo:	472332			Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Arsenic	ND	5.0	0.5000	0	92.2	80	120					
Barium	ND	100	0.5000	0	86.0	80	120					
Cadmium	ND	1.0	0.5000	0	89.4	80	120					
Chromium	ND	5.0	0.5000	0	87.2	80	120					
Lead	ND	5.0	0.5000	0	84.6	80	120					
Selenium	ND	1.0	0.5000	0	87.0	80	120					
Silver	ND	5.0	0.1000	0	94.1	80	120					

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87105  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1401A22

RcptNo: 1

Received by/date:

AT 01/24/14

Logged By:

Michelle Garcia

1/24/2014 4:15:00 PM

Michelle Garcia

Completed By:

Michelle Garcia

1/27/2014 4:58:47 PM

Michelle Garcia

Reviewed By:

mg/LM 01/27/14

### Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Client

### Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH: \_\_\_\_\_  
( $<2$  or  $>12$  unless noted)  
Adjusted? \_\_\_\_\_  
Checked by: \_\_\_\_\_

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:		Date:	
By Whom:		Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Not Present			

# Chain-of-Custody Record

Client: Western - Refining

Gallup Refinery

Mailing Address: 92 GIANT CROSSING ROAD

Gallup NM 87301

Phone #: 505 722 3833

email or Fax#: 505 863 0930

QA/QC Package:

☐ Standard

☐ Other

☐ EDD (Type)

☐ Level 4 (Full Validation)

Sampler: CTI

On Ice ☒ Yes ☐ No

Sample Temperature: 10

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
1-21-14	12:30	Soil	#1	2x8oz	ice	1401A22
	12:32	Soil	#2	2x8oz		001
	12:35		#3	2x8oz		002
	12:36		#4	2x8oz		003
	12:37		#5	2x8oz		004
	12:40		#6	2x8oz		005
	12:43		#7	2x8oz		006
						007

Date: 1-24-14

Time: 16:15

Date:

Time:

Relinquished by:

Lucas Maerten

Relinquished by:

Received by:

Chloe Kell 1/24/14

Received by:

Date

Time

Turn-Around Time:

☐ Standard ☒ Rush

Project Name:

Flare Spill Dirt pile

Project #:

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

## Analysis Request

BTEX + MTBE + TMBs (8021B)	<input checked="" type="checkbox"/>
BTEX + MTBE + TPH (Gas only)	<input checked="" type="checkbox"/>
TPH 8015B (GRO / DRO / MRO)	<input checked="" type="checkbox"/>
TPH (Method 418.1)	<input checked="" type="checkbox"/>
EDB (Method 504.1)	<input checked="" type="checkbox"/>
PAH (8310 or 8270SIMS)	<input checked="" type="checkbox"/>
RCRA 8 Metals	<input checked="" type="checkbox"/>
Anions (F)	<input checked="" type="checkbox"/>
8081 Pesticides / 8082 PCB's	<input checked="" type="checkbox"/>
8260B (VOA) TCLP	<input checked="" type="checkbox"/>
8270 (Semi-VOA) TCLP	<input checked="" type="checkbox"/>
TCLP Metals RCRA 8	<input checked="" type="checkbox"/>
BTU	<input checked="" type="checkbox"/>
Air Bubbles (Y or N)	<input checked="" type="checkbox"/>

per BL do not analyze TCLP 8260 only 8260 on 1/27/14

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #1

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 1:43:00 PM

**Lab ID:** 1401757-001

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>MERCURY, TCLP</b>							Analyst: <b>ELS</b>
Mercury	ND	0.020		mg/L	1	1/24/2014 8:06:47 AM	11362
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>JLF</b>
Arsenic	ND	5.0		mg/L	1	1/24/2014 12:24:05 PM	11368
Barium	ND	100		mg/L	1	1/24/2014 12:24:05 PM	11368
Cadmium	ND	1.0		mg/L	1	1/24/2014 12:24:05 PM	11368
Chromium	ND	5.0		mg/L	1	1/24/2014 12:24:05 PM	11368
Lead	ND	5.0		mg/L	1	1/24/2014 12:24:05 PM	11368
Selenium	ND	1.0		mg/L	1	1/24/2014 12:24:05 PM	11368
Silver	ND	5.0		mg/L	1	1/24/2014 12:24:05 PM	11368
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	1/22/2014 7:33:05 PM	11341
3+4-Methylphenol	ND	200		mg/L	1	1/22/2014 7:33:05 PM	11341
Phenol	ND	200		mg/L	1	1/22/2014 7:33:05 PM	11341
2,4-Dinitrotoluene	ND	0.13		mg/L	1	1/22/2014 7:33:05 PM	11341
Hexachlorobenzene	ND	0.13		mg/L	1	1/22/2014 7:33:05 PM	11341
Hexachlorobutadiene	ND	0.50		mg/L	1	1/22/2014 7:33:05 PM	11341
Hexachloroethane	ND	3.0		mg/L	1	1/22/2014 7:33:05 PM	11341
Nitrobenzene	ND	2.0		mg/L	1	1/22/2014 7:33:05 PM	11341
Pentachlorophenol	ND	100		mg/L	1	1/22/2014 7:33:05 PM	11341
Pyridine	ND	5.0		mg/L	1	1/22/2014 7:33:05 PM	11341
2,4,5-Trichlorophenol	ND	400		mg/L	1	1/22/2014 7:33:05 PM	11341
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	1/22/2014 7:33:05 PM	11341
Cresols, Total	ND	200		mg/L	1	1/22/2014 7:33:05 PM	11341
Surr: 2-Fluorophenol	53.3	18.6-88.6		%REC	1	1/22/2014 7:33:05 PM	11341
Surr: Phenol-d5	45.2	19.5-61.8		%REC	1	1/22/2014 7:33:05 PM	11341
Surr: 2,4,6-Tribromophenol	86.2	29.7-130		%REC	1	1/22/2014 7:33:05 PM	11341
Surr: Nitrobenzene-d5	90.7	45.1-101		%REC	1	1/22/2014 7:33:05 PM	11341
Surr: 2-Fluorobiphenyl	80.0	46.6-99.3		%REC	1	1/22/2014 7:33:05 PM	11341
Surr: 4-Terphenyl-d14	74.1	40.8-109		%REC	1	1/22/2014 7:33:05 PM	11341
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Benzene	ND	0.50		ppm	10	1/22/2014 1:39:23 PM	11304
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	1/22/2014 1:39:23 PM	11304
2-Butanone	ND	200		ppm	10	1/22/2014 1:39:23 PM	11304
Carbon tetrachloride	ND	0.50		ppm	10	1/22/2014 1:39:23 PM	11304
Chlorobenzene	ND	100		ppm	10	1/22/2014 1:39:23 PM	11304
Chloroform	ND	6.0		ppm	10	1/22/2014 1:39:23 PM	11304
1,4-Dichlorobenzene	ND	7.5		ppm	10	1/22/2014 1:39:23 PM	11304
1,1-Dichloroethene	ND	0.70		ppm	10	1/22/2014 1:39:23 PM	11304

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* 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	ND Not Detected at the Reporting Limit
	O RSD is greater than RSDlimit	P Sample pH greater than 2 for VOA and TOC only.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #1

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 1:43:00 PM

**Lab ID:** 1401757-001

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Tetrachloroethene (PCE)	ND	0.70		ppm	10	1/22/2014 1:39:23 PM	11304
Trichloroethene (TCE)	ND	0.50		ppm	10	1/22/2014 1:39:23 PM	11304
Vinyl chloride	ND	0.20		ppm	10	1/22/2014 1:39:23 PM	11304
Surr: 1,2-Dichloroethane-d4	91.1	70-130		%REC	10	1/22/2014 1:39:23 PM	11304
Surr: 4-Bromofluorobenzene	101	70-130		%REC	10	1/22/2014 1:39:23 PM	11304
Surr: Dibromofluoromethane	104	70-130		%REC	10	1/22/2014 1:39:23 PM	11304
Surr: Toluene-d8	97.3	70-130		%REC	10	1/22/2014 1:39:23 PM	11304
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>BCN</b>
Petroleum Hydrocarbons, TR	680	20		mg/Kg	1	1/22/2014	11317

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #2

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 1:53:00 PM

**Lab ID:** 1401757-002

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>MERCURY, TCLP</b>							Analyst: <b>ELS</b>
Mercury	ND	0.020		mg/L	1	1/24/2014 8:08:37 AM	11362
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>JLF</b>
Arsenic	ND	5.0		mg/L	1	1/24/2014 12:25:16 PM	11368
Barium	ND	100		mg/L	1	1/24/2014 12:25:16 PM	11368
Cadmium	ND	1.0		mg/L	1	1/24/2014 12:25:16 PM	11368
Chromium	ND	5.0		mg/L	1	1/24/2014 12:25:16 PM	11368
Lead	ND	5.0		mg/L	1	1/24/2014 12:25:16 PM	11368
Selenium	ND	1.0		mg/L	1	1/24/2014 12:25:16 PM	11368
Silver	ND	5.0		mg/L	1	1/24/2014 12:25:16 PM	11368
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	1/22/2014 3:12:24 PM	11341
3+4-Methylphenol	ND	200		mg/L	1	1/22/2014 3:12:24 PM	11341
Phenol	ND	200		mg/L	1	1/22/2014 3:12:24 PM	11341
2,4-Dinitrotoluene	ND	0.13		mg/L	1	1/22/2014 3:12:24 PM	11341
Hexachlorobenzene	ND	0.13		mg/L	1	1/22/2014 3:12:24 PM	11341
Hexachlorobutadiene	ND	0.50		mg/L	1	1/22/2014 3:12:24 PM	11341
Hexachloroethane	ND	3.0		mg/L	1	1/22/2014 3:12:24 PM	11341
Nitrobenzene	ND	2.0		mg/L	1	1/22/2014 3:12:24 PM	11341
Pentachlorophenol	ND	100		mg/L	1	1/22/2014 3:12:24 PM	11341
Pyridine	ND	5.0		mg/L	1	1/22/2014 3:12:24 PM	11341
2,4,5-Trichlorophenol	ND	400		mg/L	1	1/22/2014 3:12:24 PM	11341
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	1/22/2014 3:12:24 PM	11341
Cresols, Total	ND	200		mg/L	1	1/22/2014 3:12:24 PM	11341
Surr: 2-Fluorophenol	69.9	18.6-88.6		%REC	1	1/22/2014 3:12:24 PM	11341
Surr: Phenol-d5	55.5	19.5-61.8		%REC	1	1/22/2014 3:12:24 PM	11341
Surr: 2,4,6-Tribromophenol	89.9	29.7-130		%REC	1	1/22/2014 3:12:24 PM	11341
Surr: Nitrobenzene-d5	101	45.1-101		%REC	1	1/22/2014 3:12:24 PM	11341
Surr: 2-Fluorobiphenyl	89.5	46.6-99.3		%REC	1	1/22/2014 3:12:24 PM	11341
Surr: 4-Terphenyl-d14	79.5	40.8-109		%REC	1	1/22/2014 3:12:24 PM	11341
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Benzene	ND	0.50		ppm	10	1/21/2014 7:20:45 PM	11304
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	1/21/2014 7:20:45 PM	11304
2-Butanone	ND	200		ppm	10	1/21/2014 7:20:45 PM	11304
Carbon tetrachloride	ND	0.50		ppm	10	1/21/2014 7:20:45 PM	11304
Chlorobenzene	ND	100		ppm	10	1/21/2014 7:20:45 PM	11304
Chloroform	ND	6.0		ppm	10	1/21/2014 7:20:45 PM	11304
1,4-Dichlorobenzene	ND	7.5		ppm	10	1/21/2014 7:20:45 PM	11304
1,1-Dichloroethene	ND	0.70		ppm	10	1/21/2014 7:20:45 PM	11304

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2 for VOA and TOC only.
RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #2

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 1:53:00 PM

**Lab ID:** 1401757-002

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Tetrachloroethene (PCE)	ND	0.70		ppm	10	1/21/2014 7:20:45 PM	11304
Trichloroethene (TCE)	ND	0.50		ppm	10	1/21/2014 7:20:45 PM	11304
Vinyl chloride	ND	0.20		ppm	10	1/21/2014 7:20:45 PM	11304
Surr: 1,2-Dichloroethane-d4	95.6	70-130		%REC	10	1/21/2014 7:20:45 PM	11304
Surr: 4-Bromofluorobenzene	96.2	70-130		%REC	10	1/21/2014 7:20:45 PM	11304
Surr: Dibromofluoromethane	104	70-130		%REC	10	1/21/2014 7:20:45 PM	11304
Surr: Toluene-d8	103	70-130		%REC	10	1/21/2014 7:20:45 PM	11304
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>BCN</b>
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	1/22/2014	11317

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #3

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 1:58:00 PM

**Lab ID:** 1401757-003

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>MERCURY, TCLP</b>							Analyst: <b>ELS</b>
Mercury	ND	0.020		mg/L	1	1/24/2014 8:10:30 AM	11362
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>JLF</b>
Arsenic	ND	5.0		mg/L	1	1/24/2014 12:26:26 PM	11368
Barium	ND	100		mg/L	1	1/24/2014 12:26:26 PM	11368
Cadmium	ND	1.0		mg/L	1	1/24/2014 12:26:26 PM	11368
Chromium	ND	5.0		mg/L	1	1/24/2014 12:26:26 PM	11368
Lead	ND	5.0		mg/L	1	1/24/2014 12:26:26 PM	11368
Selenium	ND	1.0		mg/L	1	1/24/2014 12:26:26 PM	11368
Silver	ND	5.0		mg/L	1	1/24/2014 12:26:26 PM	11368
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	1/22/2014 8:02:02 PM	11341
3+4-Methylphenol	ND	200		mg/L	1	1/22/2014 8:02:02 PM	11341
Phenol	ND	200		mg/L	1	1/22/2014 8:02:02 PM	11341
2,4-Dinitrotoluene	ND	0.13		mg/L	1	1/22/2014 8:02:02 PM	11341
Hexachlorobenzene	ND	0.13		mg/L	1	1/22/2014 8:02:02 PM	11341
Hexachlorobutadiene	ND	0.50		mg/L	1	1/22/2014 8:02:02 PM	11341
Hexachloroethane	ND	3.0		mg/L	1	1/22/2014 8:02:02 PM	11341
Nitrobenzene	ND	2.0		mg/L	1	1/22/2014 8:02:02 PM	11341
Pentachlorophenol	ND	100		mg/L	1	1/22/2014 8:02:02 PM	11341
Pyridine	ND	5.0		mg/L	1	1/22/2014 8:02:02 PM	11341
2,4,5-Trichlorophenol	ND	400		mg/L	1	1/22/2014 8:02:02 PM	11341
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	1/22/2014 8:02:02 PM	11341
Cresols, Total	ND	200		mg/L	1	1/22/2014 8:02:02 PM	11341
Surr: 2-Fluorophenol	49.8	18.6-88.6		%REC	1	1/22/2014 8:02:02 PM	11341
Surr: Phenol-d5	41.2	19.5-61.8		%REC	1	1/22/2014 8:02:02 PM	11341
Surr: 2,4,6-Tribromophenol	72.8	29.7-130		%REC	1	1/22/2014 8:02:02 PM	11341
Surr: Nitrobenzene-d5	74.2	45.1-101		%REC	1	1/22/2014 8:02:02 PM	11341
Surr: 2-Fluorobiphenyl	76.5	46.6-99.3		%REC	1	1/22/2014 8:02:02 PM	11341
Surr: 4-Terphenyl-d14	63.9	40.8-109		%REC	1	1/22/2014 8:02:02 PM	11341
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Benzene	ND	0.50		ppm	10	1/21/2014 7:49:25 PM	11304
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	1/21/2014 7:49:25 PM	11304
2-Butanone	ND	200		ppm	10	1/21/2014 7:49:25 PM	11304
Carbon tetrachloride	ND	0.50		ppm	10	1/21/2014 7:49:25 PM	11304
Chlorobenzene	ND	100		ppm	10	1/21/2014 7:49:25 PM	11304
Chloroform	ND	6.0		ppm	10	1/21/2014 7:49:25 PM	11304
1,4-Dichlorobenzene	ND	7.5		ppm	10	1/21/2014 7:49:25 PM	11304
1,1-Dichloroethene	ND	0.70		ppm	10	1/21/2014 7:49:25 PM	11304

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2 for VOA and TOC only.
RL	Reporting Detection Limit



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #3

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 1:58:00 PM

**Lab ID:** 1401757-003

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Tetrachloroethene (PCE)	ND	0.70		ppm	10	1/21/2014 7:49:25 PM	11304
Trichloroethene (TCE)	ND	0.50		ppm	10	1/21/2014 7:49:25 PM	11304
Vinyl chloride	ND	0.20		ppm	10	1/21/2014 7:49:25 PM	11304
Surr: 1,2-Dichloroethane-d4	95.5	70-130		%REC	10	1/21/2014 7:49:25 PM	11304
Surr: 4-Bromofluorobenzene	92.9	70-130		%REC	10	1/21/2014 7:49:25 PM	11304
Surr: Dibromofluoromethane	101	70-130		%REC	10	1/21/2014 7:49:25 PM	11304
Surr: Toluene-d8	97.0	70-130		%REC	10	1/21/2014 7:49:25 PM	11304
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>BCN</b>
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	1/22/2014	11317

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #4

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 2:06:00 PM

**Lab ID:** 1401757-004

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>MERCURY, TCLP</b>							Analyst: <b>ELS</b>
Mercury	ND	0.020		mg/L	1	1/24/2014 8:12:20 AM	11362
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>JLF</b>
Arsenic	ND	5.0		mg/L	1	1/24/2014 12:27:37 PM	11368
Barium	ND	100		mg/L	1	1/24/2014 12:27:37 PM	11368
Cadmium	ND	1.0		mg/L	1	1/24/2014 12:27:37 PM	11368
Chromium	ND	5.0		mg/L	1	1/24/2014 12:27:37 PM	11368
Lead	ND	5.0		mg/L	1	1/24/2014 12:27:37 PM	11368
Selenium	ND	1.0		mg/L	1	1/24/2014 12:27:37 PM	11368
Silver	ND	5.0		mg/L	1	1/24/2014 12:27:37 PM	11368
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	1/22/2014 3:41:33 PM	11341
3+4-Methylphenol	ND	200		mg/L	1	1/22/2014 3:41:33 PM	11341
Phenol	ND	200		mg/L	1	1/22/2014 3:41:33 PM	11341
2,4-Dinitrotoluene	ND	0.13		mg/L	1	1/22/2014 3:41:33 PM	11341
Hexachlorobenzene	ND	0.13		mg/L	1	1/22/2014 3:41:33 PM	11341
Hexachlorobutadiene	ND	0.50		mg/L	1	1/22/2014 3:41:33 PM	11341
Hexachloroethane	ND	3.0		mg/L	1	1/22/2014 3:41:33 PM	11341
Nitrobenzene	ND	2.0		mg/L	1	1/22/2014 3:41:33 PM	11341
Pentachlorophenol	ND	100		mg/L	1	1/22/2014 3:41:33 PM	11341
Pyridine	ND	5.0		mg/L	1	1/22/2014 3:41:33 PM	11341
2,4,5-Trichlorophenol	ND	400		mg/L	1	1/22/2014 3:41:33 PM	11341
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	1/22/2014 3:41:33 PM	11341
Cresols, Total	ND	200		mg/L	1	1/22/2014 3:41:33 PM	11341
Surr: 2-Fluorophenol	50.1	18.6-88.6		%REC	1	1/22/2014 3:41:33 PM	11341
Surr: Phenol-d5	42.7	19.5-61.8		%REC	1	1/22/2014 3:41:33 PM	11341
Surr: 2,4,6-Tribromophenol	73.7	29.7-130		%REC	1	1/22/2014 3:41:33 PM	11341
Surr: Nitrobenzene-d5	83.1	45.1-101		%REC	1	1/22/2014 3:41:33 PM	11341
Surr: 2-Fluorobiphenyl	81.6	46.6-99.3		%REC	1	1/22/2014 3:41:33 PM	11341
Surr: 4-Terphenyl-d14	70.8	40.8-109		%REC	1	1/22/2014 3:41:33 PM	11341
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Benzene	ND	0.50		ppm	10	1/21/2014 8:18:06 PM	11304
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	1/21/2014 8:18:06 PM	11304
2-Butanone	ND	200		ppm	10	1/21/2014 8:18:06 PM	11304
Carbon tetrachloride	ND	0.50		ppm	10	1/21/2014 8:18:06 PM	11304
Chlorobenzene	ND	100		ppm	10	1/21/2014 8:18:06 PM	11304
Chloroform	ND	6.0		ppm	10	1/21/2014 8:18:06 PM	11304
1,4-Dichlorobenzene	ND	7.5		ppm	10	1/21/2014 8:18:06 PM	11304
1,1-Dichloroethene	ND	0.70		ppm	10	1/21/2014 8:18:06 PM	11304

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #4

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 2:06:00 PM

**Lab ID:** 1401757-004

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Tetrachloroethene (PCE)	ND	0.70		ppm	10	1/21/2014 8:18:06 PM	11304
Trichloroethene (TCE)	ND	0.50		ppm	10	1/21/2014 8:18:06 PM	11304
Vinyl chloride	ND	0.20		ppm	10	1/21/2014 8:18:06 PM	11304
Surr: 1,2-Dichloroethane-d4	92.6	70-130		%REC	10	1/21/2014 8:18:06 PM	11304
Surr: 4-Bromofluorobenzene	107	70-130		%REC	10	1/21/2014 8:18:06 PM	11304
Surr: Dibromofluoromethane	101	70-130		%REC	10	1/21/2014 8:18:06 PM	11304
Surr: Toluene-d8	98.2	70-130		%REC	10	1/21/2014 8:18:06 PM	11304
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>BCN</b>
Petroleum Hydrocarbons, TR	23	20		mg/Kg	1	1/22/2014	11317

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #5

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 2:13:00 PM

**Lab ID:** 1401757-005

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>MERCURY, TCLP</b>							Analyst: <b>ELS</b>
Mercury	ND	0.020		mg/L	1	1/24/2014 8:14:11 AM	11362
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>JLF</b>
Arsenic	ND	5.0		mg/L	1	1/24/2014 12:28:53 PM	11368
Barium	ND	100		mg/L	1	1/24/2014 12:28:53 PM	11368
Cadmium	ND	1.0		mg/L	1	1/24/2014 12:28:53 PM	11368
Chromium	ND	5.0		mg/L	1	1/24/2014 12:28:53 PM	11368
Lead	ND	5.0		mg/L	1	1/24/2014 12:28:53 PM	11368
Selenium	ND	1.0		mg/L	1	1/24/2014 12:28:53 PM	11368
Silver	ND	5.0		mg/L	1	1/24/2014 12:28:53 PM	11368
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	1/22/2014 8:30:43 PM	11341
3+4-Methylphenol	ND	200		mg/L	1	1/22/2014 8:30:43 PM	11341
Phenol	ND	200		mg/L	1	1/22/2014 8:30:43 PM	11341
2,4-Dinitrotoluene	ND	0.13		mg/L	1	1/22/2014 8:30:43 PM	11341
Hexachlorobenzene	ND	0.13		mg/L	1	1/22/2014 8:30:43 PM	11341
Hexachlorobutadiene	ND	0.50		mg/L	1	1/22/2014 8:30:43 PM	11341
Hexachloroethane	ND	3.0		mg/L	1	1/22/2014 8:30:43 PM	11341
Nitrobenzene	ND	2.0		mg/L	1	1/22/2014 8:30:43 PM	11341
Pentachlorophenol	ND	100		mg/L	1	1/22/2014 8:30:43 PM	11341
Pyridine	ND	5.0		mg/L	1	1/22/2014 8:30:43 PM	11341
2,4,5-Trichlorophenol	ND	400		mg/L	1	1/22/2014 8:30:43 PM	11341
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	1/22/2014 8:30:43 PM	11341
Cresols, Total	ND	200		mg/L	1	1/22/2014 8:30:43 PM	11341
Surr: 2-Fluorophenol	36.5	18.6-88.6		%REC	1	1/22/2014 8:30:43 PM	11341
Surr: Phenol-d5	29.6	19.5-61.8		%REC	1	1/22/2014 8:30:43 PM	11341
Surr: 2,4,6-Tribromophenol	54.4	29.7-130		%REC	1	1/22/2014 8:30:43 PM	11341
Surr: Nitrobenzene-d5	54.0	45.1-101		%REC	1	1/22/2014 8:30:43 PM	11341
Surr: 2-Fluorobiphenyl	51.1	46.6-99.3		%REC	1	1/22/2014 8:30:43 PM	11341
Surr: 4-Terphenyl-d14	49.9	40.8-109		%REC	1	1/22/2014 8:30:43 PM	11341
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Benzene	ND	0.50		ppm	10	1/21/2014 8:46:53 PM	11304
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	1/21/2014 8:46:53 PM	11304
2-Butanone	ND	200		ppm	10	1/21/2014 8:46:53 PM	11304
Carbon tetrachloride	ND	0.50		ppm	10	1/21/2014 8:46:53 PM	11304
Chlorobenzene	ND	100		ppm	10	1/21/2014 8:46:53 PM	11304
Chloroform	ND	6.0		ppm	10	1/21/2014 8:46:53 PM	11304
1,4-Dichlorobenzene	ND	7.5		ppm	10	1/21/2014 8:46:53 PM	11304
1,1-Dichloroethene	ND	0.70		ppm	10	1/21/2014 8:46:53 PM	11304

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #5

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 2:13:00 PM

**Lab ID:** 1401757-005

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Tetrachloroethene (PCE)	ND	0.70		ppm	10	1/21/2014 8:46:53 PM	11304
Trichloroethene (TCE)	ND	0.50		ppm	10	1/21/2014 8:46:53 PM	11304
Vinyl chloride	ND	0.20		ppm	10	1/21/2014 8:46:53 PM	11304
Surr: 1,2-Dichloroethane-d4	91.6	70-130		%REC	10	1/21/2014 8:46:53 PM	11304
Surr: 4-Bromofluorobenzene	93.8	70-130		%REC	10	1/21/2014 8:46:53 PM	11304
Surr: Dibromofluoromethane	102	70-130		%REC	10	1/21/2014 8:46:53 PM	11304
Surr: Toluene-d8	101	70-130		%REC	10	1/21/2014 8:46:53 PM	11304
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>BCN</b>
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	1/22/2014	11317

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #6

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 2:18:00 PM

**Lab ID:** 1401757-006

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>MERCURY, TCLP</b>							Analyst: <b>ELS</b>
Mercury	ND	0.020		mg/L	1	1/24/2014 8:15:55 AM	11362
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>JLF</b>
Arsenic	ND	5.0		mg/L	1	1/24/2014 12:30:03 PM	11368
Barium	ND	100		mg/L	1	1/24/2014 12:30:03 PM	11368
Cadmium	ND	1.0		mg/L	1	1/24/2014 12:30:03 PM	11368
Chromium	ND	5.0		mg/L	1	1/24/2014 12:30:03 PM	11368
Lead	ND	5.0		mg/L	1	1/24/2014 12:30:03 PM	11368
Selenium	ND	1.0		mg/L	1	1/24/2014 12:30:03 PM	11368
Silver	ND	5.0		mg/L	1	1/24/2014 12:30:03 PM	11368
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	1/22/2014 4:10:16 PM	11341
3+4-Methylphenol	ND	200		mg/L	1	1/22/2014 4:10:16 PM	11341
Phenol	ND	200		mg/L	1	1/22/2014 4:10:16 PM	11341
2,4-Dinitrotoluene	ND	0.13		mg/L	1	1/22/2014 4:10:16 PM	11341
Hexachlorobenzene	ND	0.13		mg/L	1	1/22/2014 4:10:16 PM	11341
Hexachlorobutadiene	ND	0.50		mg/L	1	1/22/2014 4:10:16 PM	11341
Hexachloroethane	ND	3.0		mg/L	1	1/22/2014 4:10:16 PM	11341
Nitrobenzene	ND	2.0		mg/L	1	1/22/2014 4:10:16 PM	11341
Pentachlorophenol	ND	100		mg/L	1	1/22/2014 4:10:16 PM	11341
Pyridine	ND	5.0		mg/L	1	1/22/2014 4:10:16 PM	11341
2,4,5-Trichlorophenol	ND	400		mg/L	1	1/22/2014 4:10:16 PM	11341
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	1/22/2014 4:10:16 PM	11341
Cresols, Total	ND	200		mg/L	1	1/22/2014 4:10:16 PM	11341
Surr: 2-Fluorophenol	66.8	18.6-88.6		%REC	1	1/22/2014 4:10:16 PM	11341
Surr: Phenol-d5	53.0	19.5-61.8		%REC	1	1/22/2014 4:10:16 PM	11341
Surr: 2,4,6-Tribromophenol	87.3	29.7-130		%REC	1	1/22/2014 4:10:16 PM	11341
Surr: Nitrobenzene-d5	87.5	45.1-101		%REC	1	1/22/2014 4:10:16 PM	11341
Surr: 2-Fluorobiphenyl	85.4	46.6-99.3		%REC	1	1/22/2014 4:10:16 PM	11341
Surr: 4-Terphenyl-d14	73.6	40.8-109		%REC	1	1/22/2014 4:10:16 PM	11341
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Benzene	ND	0.50		ppm	10	1/21/2014 9:15:42 PM	11304
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	1/21/2014 9:15:42 PM	11304
2-Butanone	ND	200		ppm	10	1/21/2014 9:15:42 PM	11304
Carbon tetrachloride	ND	0.50		ppm	10	1/21/2014 9:15:42 PM	11304
Chlorobenzene	ND	100		ppm	10	1/21/2014 9:15:42 PM	11304
Chloroform	ND	6.0		ppm	10	1/21/2014 9:15:42 PM	11304
1,4-Dichlorobenzene	ND	7.5		ppm	10	1/21/2014 9:15:42 PM	11304
1,1-Dichloroethene	ND	0.70		ppm	10	1/21/2014 9:15:42 PM	11304

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2 for VOA and TOC only.
RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #6

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 2:18:00 PM

**Lab ID:** 1401757-006

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Tetrachloroethene (PCE)	ND	0.70		ppm	10	1/21/2014 9:15:42 PM	11304
Trichloroethene (TCE)	ND	0.50		ppm	10	1/21/2014 9:15:42 PM	11304
Vinyl chloride	ND	0.20		ppm	10	1/21/2014 9:15:42 PM	11304
Surr: 1,2-Dichloroethane-d4	88.8	70-130		%REC	10	1/21/2014 9:15:42 PM	11304
Surr: 4-Bromofluorobenzene	98.5	70-130		%REC	10	1/21/2014 9:15:42 PM	11304
Surr: Dibromofluoromethane	99.1	70-130		%REC	10	1/21/2014 9:15:42 PM	11304
Surr: Toluene-d8	103	70-130		%REC	10	1/21/2014 9:15:42 PM	11304
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>BCN</b>
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	1/22/2014	11317

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #7

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 2:23:00 PM

**Lab ID:** 1401757-007

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>MERCURY, TCLP</b>							Analyst: <b>ELS</b>
Mercury	ND	0.020		mg/L	1	1/24/2014 8:17:39 AM	11362
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>JLF</b>
Arsenic	ND	5.0		mg/L	1	1/24/2014 12:31:16 PM	11368
Barium	ND	100		mg/L	1	1/24/2014 12:31:16 PM	11368
Cadmium	ND	1.0		mg/L	1	1/24/2014 12:31:16 PM	11368
Chromium	ND	5.0		mg/L	1	1/24/2014 12:31:16 PM	11368
Lead	ND	5.0		mg/L	1	1/24/2014 12:31:16 PM	11368
Selenium	ND	1.0		mg/L	1	1/24/2014 12:31:16 PM	11368
Silver	ND	5.0		mg/L	1	1/24/2014 12:31:16 PM	11368
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	1/22/2014 9:28:28 PM	11341
3+4-Methylphenol	ND	200		mg/L	1	1/22/2014 9:28:28 PM	11341
Phenol	ND	200		mg/L	1	1/22/2014 9:28:28 PM	11341
2,4-Dinitrotoluene	ND	0.13		mg/L	1	1/22/2014 9:28:28 PM	11341
Hexachlorobenzene	ND	0.13		mg/L	1	1/22/2014 9:28:28 PM	11341
Hexachlorobutadiene	ND	0.50		mg/L	1	1/22/2014 9:28:28 PM	11341
Hexachloroethane	ND	3.0		mg/L	1	1/22/2014 9:28:28 PM	11341
Nitrobenzene	ND	2.0		mg/L	1	1/22/2014 9:28:28 PM	11341
Pentachlorophenol	ND	100		mg/L	1	1/22/2014 9:28:28 PM	11341
Pyridine	ND	5.0		mg/L	1	1/22/2014 9:28:28 PM	11341
2,4,5-Trichlorophenol	ND	400		mg/L	1	1/22/2014 9:28:28 PM	11341
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	1/22/2014 9:28:28 PM	11341
Cresols, Total	ND	200		mg/L	1	1/22/2014 9:28:28 PM	11341
Surr: 2-Fluorophenol	51.4	18.6-88.6		%REC	1	1/22/2014 9:28:28 PM	11341
Surr: Phenol-d5	41.3	19.5-61.8		%REC	1	1/22/2014 9:28:28 PM	11341
Surr: 2,4,6-Tribromophenol	76.1	29.7-130		%REC	1	1/22/2014 9:28:28 PM	11341
Surr: Nitrobenzene-d5	75.1	45.1-101		%REC	1	1/22/2014 9:28:28 PM	11341
Surr: 2-Fluorobiphenyl	77.5	46.6-99.3		%REC	1	1/22/2014 9:28:28 PM	11341
Surr: 4-Terphenyl-d14	67.0	40.8-109		%REC	1	1/22/2014 9:28:28 PM	11341
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Benzene	ND	0.50		ppm	10	1/21/2014 9:44:27 PM	11304
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	1/21/2014 9:44:27 PM	11304
2-Butanone	ND	200		ppm	10	1/21/2014 9:44:27 PM	11304
Carbon tetrachloride	ND	0.50		ppm	10	1/21/2014 9:44:27 PM	11304
Chlorobenzene	ND	100		ppm	10	1/21/2014 9:44:27 PM	11304
Chloroform	ND	6.0		ppm	10	1/21/2014 9:44:27 PM	11304
1,4-Dichlorobenzene	ND	7.5		ppm	10	1/21/2014 9:44:27 PM	11304
1,1-Dichloroethene	ND	0.70		ppm	10	1/21/2014 9:44:27 PM	11304

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2 for VOA and TOC only.
RL	Reporting Detection Limit



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #7

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 2:23:00 PM

**Lab ID:** 1401757-007

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Tetrachloroethene (PCE)	ND	0.70		ppm	10	1/21/2014 9:44:27 PM	11304
Trichloroethene (TCE)	ND	0.50		ppm	10	1/21/2014 9:44:27 PM	11304
Vinyl chloride	ND	0.20		ppm	10	1/21/2014 9:44:27 PM	11304
Surr: 1,2-Dichloroethane-d4	91.1	70-130		%REC	10	1/21/2014 9:44:27 PM	11304
Surr: 4-Bromofluorobenzene	77.9	70-130		%REC	10	1/21/2014 9:44:27 PM	11304
Surr: Dibromofluoromethane	100	70-130		%REC	10	1/21/2014 9:44:27 PM	11304
Surr: Toluene-d8	99.4	70-130		%REC	10	1/21/2014 9:44:27 PM	11304
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>BCN</b>
Petroleum Hydrocarbons, TR	1600	200		mg/Kg	10	1/22/2014	11317

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #8

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 2:27:00 PM

**Lab ID:** 1401757-008

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>MERCURY, TCLP</b>							Analyst: <b>ELS</b>
Mercury	ND	0.020		mg/L	1	1/24/2014 8:19:24 AM	11362
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>JLF</b>
Arsenic	ND	5.0		mg/L	1	1/24/2014 12:32:27 PM	11368
Barium	ND	100		mg/L	1	1/24/2014 12:32:27 PM	11368
Cadmium	ND	1.0		mg/L	1	1/24/2014 12:32:27 PM	11368
Chromium	ND	5.0		mg/L	1	1/24/2014 12:32:27 PM	11368
Lead	ND	5.0		mg/L	1	1/24/2014 12:32:27 PM	11368
Selenium	ND	1.0		mg/L	1	1/24/2014 12:32:27 PM	11368
Silver	ND	5.0		mg/L	1	1/24/2014 12:32:27 PM	11368
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	1/22/2014 4:39:09 PM	11341
3+4-Methylphenol	ND	200		mg/L	1	1/22/2014 4:39:09 PM	11341
Phenol	ND	200		mg/L	1	1/22/2014 4:39:09 PM	11341
2,4-Dinitrotoluene	ND	0.13		mg/L	1	1/22/2014 4:39:09 PM	11341
Hexachlorobenzene	ND	0.13		mg/L	1	1/22/2014 4:39:09 PM	11341
Hexachlorobutadiene	ND	0.50		mg/L	1	1/22/2014 4:39:09 PM	11341
Hexachloroethane	ND	3.0		mg/L	1	1/22/2014 4:39:09 PM	11341
Nitrobenzene	ND	2.0		mg/L	1	1/22/2014 4:39:09 PM	11341
Pentachlorophenol	ND	100		mg/L	1	1/22/2014 4:39:09 PM	11341
Pyridine	ND	5.0		mg/L	1	1/22/2014 4:39:09 PM	11341
2,4,5-Trichlorophenol	ND	400		mg/L	1	1/22/2014 4:39:09 PM	11341
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	1/22/2014 4:39:09 PM	11341
Cresols, Total	ND	200		mg/L	1	1/22/2014 4:39:09 PM	11341
Surr: 2-Fluorophenol	63.9	18.6-88.6		%REC	1	1/22/2014 4:39:09 PM	11341
Surr: Phenol-d5	51.0	19.5-61.8		%REC	1	1/22/2014 4:39:09 PM	11341
Surr: 2,4,6-Tribromophenol	81.3	29.7-130		%REC	1	1/22/2014 4:39:09 PM	11341
Surr: Nitrobenzene-d5	90.1	45.1-101		%REC	1	1/22/2014 4:39:09 PM	11341
Surr: 2-Fluorobiphenyl	87.5	46.6-99.3		%REC	1	1/22/2014 4:39:09 PM	11341
Surr: 4-Terphenyl-d14	73.8	40.8-109		%REC	1	1/22/2014 4:39:09 PM	11341
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Benzene	ND	0.50		ppm	10	1/21/2014 11:39:23 PM	11304
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	1/21/2014 11:39:23 PM	11304
2-Butanone	ND	200		ppm	10	1/21/2014 11:39:23 PM	11304
Carbon tetrachloride	ND	0.50		ppm	10	1/21/2014 11:39:23 PM	11304
Chlorobenzene	ND	100		ppm	10	1/21/2014 11:39:23 PM	11304
Chloroform	ND	6.0		ppm	10	1/21/2014 11:39:23 PM	11304
1,4-Dichlorobenzene	ND	7.5		ppm	10	1/21/2014 11:39:23 PM	11304
1,1-Dichloroethene	ND	0.70		ppm	10	1/21/2014 11:39:23 PM	11304

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2 for VOA and TOC only.
RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #8

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 2:27:00 PM

**Lab ID:** 1401757-008

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Tetrachloroethene (PCE)	ND	0.70		ppm	10	1/21/2014 11:39:23 PM	11304
Trichloroethene (TCE)	ND	0.50		ppm	10	1/21/2014 11:39:23 PM	11304
Vinyl chloride	ND	0.20		ppm	10	1/21/2014 11:39:23 PM	11304
Surr: 1,2-Dichloroethane-d4	99.2	70-130		%REC	10	1/21/2014 11:39:23 PM	11304
Surr: 4-Bromofluorobenzene	99.9	70-130		%REC	10	1/21/2014 11:39:23 PM	11304
Surr: Dibromofluoromethane	107	70-130		%REC	10	1/21/2014 11:39:23 PM	11304
Surr: Toluene-d8	97.0	70-130		%REC	10	1/21/2014 11:39:23 PM	11304
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>BCN</b>
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	1/22/2014	11317

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com  
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 140121034  
**Project Name:** 1401757

## Analytical Results Report

<b>Sample Number</b>	140121034-001	<b>Sampling Date</b>	1/13/2014	<b>Date/Time Received</b>	1/21/2014 1:26 AM
<b>Client Sample ID</b>	1401757-001B / FLARE KO DRUM LEAK #1			<b>Sampling Time</b>	1:43 PM
<b>Matrix</b>	Soil	<b>Sample Location</b>			
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	1	1/23/2014	CRW	SW846 CH7	
Ignitability	Negative			1/22/2014	JWC	EPA 1030	
pH	8.42	ph Units		1/22/2014	AJT	EPA 9045	
Reactive sulfide	39.4	mg/kg	12.3	1/22/2014	AJT	SW846 CH7	
Sulfur	624	mg/kg	300	1/22/2014	ALS	EPA 6010B	

# Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com  
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 140121034  
**Project Name:** 1401757

## Analytical Results Report

<b>Sample Number</b>	140121034-002	<b>Sampling Date</b>	1/13/2014	<b>Date/Time Received</b>	1/21/2014 1:26 AM
<b>Client Sample ID</b>	1401757-002B / FLARE KO DRUM LEAK #2			<b>Sampling Time</b>	1:53 PM
<b>Matrix</b>	Soil	<b>Sample Location</b>			
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	1	1/23/2014	CRW	SW846 CH7	
Ignitability	Negative			1/22/2014	JWC	EPA 1030	
pH	8.44	ph Units		1/22/2014	AJT	EPA 9045	
Reactive sulfide	ND	mg/kg	12.3	1/22/2014	AJT	SW846 CH7	
Sulfur	ND	mg/kg	300	1/22/2014	ALS	EPA 6010B	

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**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 140121034  
**Project Name:** 1401757

## Analytical Results Report

<b>Sample Number</b>	140121034-003	<b>Sampling Date</b>	1/13/2014	<b>Date/Time Received</b>	1/21/2014 1:26 AM
<b>Client Sample ID</b>	1401757-003B / FLARE KO DRUM LEAK #3			<b>Sampling Time</b>	1:58 PM
<b>Matrix</b>	Soil	<b>Sample Location</b>			
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	1	1/23/2014	CRW	SW846 CH7	
Ignitability	Negative			1/22/2014	JWC	EPA 1030	
pH	8.37	ph Units		1/22/2014	AJT	EPA 9045	
Reactive sulfide	ND	mg/kg	12.3	1/22/2014	AJT	SW846 CH7	
Sulfur	2510	mg/kg	300	1/22/2014	ALS	EPA 6010B	

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**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 140121034  
**Project Name:** 1401757

## Analytical Results Report

<b>Sample Number</b>	140121034-004	<b>Sampling Date</b>	1/13/2014	<b>Date/Time Received</b>	1/21/2014 1:26 AM
<b>Client Sample ID</b>	1401757-004B / FLARE KO DRUM LEAK #4			<b>Sampling Time</b>	2:06 PM
<b>Matrix</b>	Soil	<b>Sample Location</b>			
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	1	1/23/2014	CRW	SW846 CH7	
Ignitability	Negative			1/22/2014	JWC	EPA 1030	
pH	8.67	ph Units		1/22/2014	AJT	EPA 9045	
Reactive sulfide	ND	mg/kg	10.7	1/22/2014	AJT	SW846 CH7	
Sulfur	ND	mg/kg	300	1/22/2014	ALS	EPA 6010B	

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**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 140121034  
**Project Name:** 1401757

## Analytical Results Report

<b>Sample Number</b>	140121034-005	<b>Sampling Date</b>	1/13/2014	<b>Date/Time Received</b>	1/21/2014 1:26 AM
<b>Client Sample ID</b>	1401757-005B / FLARE KO DRUM LEAK #5			<b>Sampling Time</b>	2:13 PM
<b>Matrix</b>	Soil	<b>Sample Location</b>			
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	1	1/23/2014	CRW	SW846 CH7	
Ignitability	Negative			1/22/2014	JWC	EPA 1030	
pH	8.00	ph Units		1/22/2014	AJT	EPA 9045	
Reactive sulfide	14.5	mg/kg	12.1	1/22/2014	AJT	SW846 CH7	
Sulfur	838	mg/kg	300	1/22/2014	ALS	EPA 6010B	



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**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 140121034  
**Project Name:** 1401757

## Analytical Results Report

<b>Sample Number</b>	140121034-006	<b>Sampling Date</b>	1/13/2014	<b>Date/Time Received</b>	1/21/2014 1:26 AM
<b>Client Sample ID</b>	1401757-006B / FLARE KO DRUM LEAK #6			<b>Sampling Time</b>	2:18 PM
<b>Matrix</b>	Soil	<b>Sample Location</b>			
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	1	1/23/2014	CRW	SW846 CH7	
Ignitability	Negative			1/22/2014	JWC	EPA 1030	
pH	8.20	ph Units		1/22/2014	AJT	EPA 9045	
Reactive sulfide	ND	mg/kg	12.5	1/22/2014	AJT	SW846 CH7	
Sulfur	956	mg/kg	300	1/22/2014	ALS	EPA 6010B	

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**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 140121034  
**Project Name:** 1401757

## Analytical Results Report

<b>Sample Number</b>	140121034-007	<b>Sampling Date</b>	1/13/2014	<b>Date/Time Received</b>	1/21/2014 1:26 AM
<b>Client Sample ID</b>	1401757-007B / FLARE KO DRUM LEAK #7			<b>Sampling Time</b>	2:23 PM
<b>Matrix</b>	Soil	<b>Sample Location</b>			
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	1	1/23/2014	CRW	SW846 CH7	
Ignitability	Negative			1/22/2014	JWC	EPA 1030	
pH	9.12	ph Units		1/22/2014	AJT	EPA 9045	
Reactive sulfide	15.3	mg/kg	11	1/22/2014	AJT	SW846 CH7	
Sulfur	375	mg/kg	300	1/22/2014	ALS	EPA 6010B	

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**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 140121034  
**Project Name:** 1401757

## Analytical Results Report

**Sample Number** 140121034-008 **Sampling Date** 1/13/2014 **Date/Time Received** 1/21/2014 1:26 AM  
**Client Sample ID** 1401757-008B / FLARE KO DRUM LEAK #8 **Sampling Time** 2:27 PM  
**Matrix** Soil **Sample Location**  
**Comments**

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	1	1/23/2014	CRW	SW846 CH7	
Ignitability	Negative			1/22/2014	JWC	EPA 1030	
pH	9.22	ph Units		1/22/2014	AJT	EPA 9045	
Reactive sulfide	ND	mg/kg	12.6	1/22/2014	AJT	SW846 CH7	
Sulfur	ND	mg/kg	300	1/22/2014	ALS	EPA 6010B	

Authorized Signature

  
John Coddington, Lab Manager

MCL EPA's Maximum Contaminant Level  
ND Not Detected  
PQL Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.  
The results reported relate only to the samples indicated.  
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C595  
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

Thursday, January 23, 2014

Page 8 of 8

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401757

27-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Knockout Drum

Sample ID	MB-11317		SampType:	MBLK		TestCode:	EPA Method 418.1: TPH				
Client ID:	PBS		Batch ID:	11317		RunNo:	16223				
Prep Date:	1/20/2014		Analysis Date:	1/22/2014		SeqNo:	467772		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Petroleum Hydrocarbons, TR	ND	20									

Sample ID	LCS-11317		SampType: LCS		TestCode: EPA Method 418.1: TPH					
Client ID:	LCSS		Batch ID: 11317		RunNo: 16223					
Prep Date:	1/20/2014		Analysis Date: 1/22/2014		SeqNo: 467773		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	100	20	100.0	0	101	80	120			

Sample ID	LCSD-11317		SampType: LCSD		TestCode: EPA Method 418.1: TPH					
Client ID:	LCSS02		Batch ID: 11317		RunNo: 16223					
Prep Date:	1/20/2014		Analysis Date: 1/22/2014		SeqNo: 467774		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	100	20	100.0	0	100	80	120	1.15	20	

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401757

27-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Knockout Drum

Sample ID	lcs-11304		SampType: LCS		TestCode: EPA Method 8260B: TCLP Compounds					
Client ID:	LCSS		Batch ID: 11304		RunNo: 16209					
Prep Date:	1/20/2014		Analysis Date: 1/21/2014		SeqNo: 467224		Units: ppm			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.050	1.000	0	90.7	70	130			
Chlorobenzene	0.88	0.10	1.000	0	87.9	70	130			
1,1-Dichloroethene	1.2	0.070	1.000	0	119	69.3	131			
Trichloroethene (TCE)	0.80	0.050	1.000	0	80.3	70	130			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		93.0	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		94.6	70	130			
Surr: Dibromofluoromethane	0.49		0.5000		97.4	70	130			
Surr: Toluene-d8	0.47		0.5000		94.3	70	130			

Sample ID	1401757-001AMS		SampType: MS		TestCode: EPA Method 8260B: TCLP Compounds					
Client ID:	Flare KO Drum Leak		Batch ID: 11304		RunNo: 16209					
Prep Date:	1/20/2014		Analysis Date: 1/21/2014		SeqNo: 467226		Units: ppm			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.50	0.9980	0	108	65.1	127			
Chlorobenzene	0.97	0.50	0.9980	0	96.8	66.8	129			
1,1-Dichloroethene	1.0	0.70	0.9980	0	103	44.1	148			
Trichloroethene (TCE)	1.1	0.50	0.9980	0	109	63.2	122			
Surr: 1,2-Dichloroethane-d4	5.3		4.990		107	70	130			
Surr: 4-Bromofluorobenzene	5.2		4.990		103	70	130			
Surr: Dibromofluoromethane	5.7		4.990		114	70	130			
Surr: Toluene-d8	5.8		4.990		116	70	130			

Sample ID	1401757-001AMSD		SampType:	MSD		TestCode:	EPA Method 8260B: TCLP Compounds				
Client ID:	Flare KO Drum Leak		Batch ID:	11304		RunNo:	16209				
Prep Date:	1/20/2014		Analysis Date:	1/21/2014		SeqNo:	467227		Units:	ppm	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	1.0	0.50	0.9990	0	103	65.1	127	4.11	20		
Chlorobenzene	0.99	0.50	0.9990	0	98.9	66.8	129	2.17	20		
1,1-Dichloroethene	1.1	0.70	0.9990	0	114	44.1	148	10.3	20		
Trichloroethene (TCE)	0.92	0.50	0.9990	0	92.1	63.2	122	16.8	20		
Surr: 1,2-Dichloroethane-d4	4.6		4.995		92.0	70	130	0	0		
Surr: 4-Bromofluorobenzene	4.9		4.995		98.1	70	130	0	0		
Surr: Dibromofluoromethane	5.1		4.995		103	70	130	0	0		
Surr: Toluene-d8	3.7		4.995		73.3	70	130	0	0		

### 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      | ND Not Detected at the Reporting Limit               |
| O RSD is greater than RSDlimit                    | P Sample pH greater than 2 for VOA and TOC only.     |
| R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
| S Spike Recovery outside accepted recovery limits |  |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401757

27-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Knockout Drum

Sample ID	mb-11304		SampType:	MBLK		TestCode:	EPA Method 8260B: TCLP Compounds			
Client ID:	PBS		Batch ID:	11304		RunNo:	16236			
Prep Date:	1/20/2014		Analysis Date:	1/22/2014		SeqNo:	468121		Units: ppm	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
2-Butanone	ND	20								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	10								
Chloroform	ND	0.60								
1,4-Dichlorobenzene	ND	0.75								
1,1-Dichloroethene	ND	0.070								
Tetrachloroethene (PCE)	ND	0.070								
Trichloroethene (TCE)	ND	0.050								
Vinyl chloride	ND	0.020								
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		103	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		93.6	70	130			
Surr: Dibromofluoromethane	0.56		0.5000		113	70	130			
Surr: Toluene-d8	0.43		0.5000		86.1	70	130			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401757

27-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Knockout Drum

Sample ID	mb-11341		SampType:	MBLK		TestCode:	EPA Method 8270C TCLP			
Client ID:	PBS		Batch ID:	11341		RunNo:	16238			
Prep Date:	1/22/2014		Analysis Date:	1/22/2014		SeqNo:	468165		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	ND	200								
3+4-Methylphenol	ND	200								
Phenol	ND	200								
2,4-Dinitrotoluene	ND	0.13								
Hexachlorobenzene	ND	0.13								
Hexachlorobutadiene	ND	0.50								
Hexachloroethane	ND	3.0								
Nitrobenzene	ND	2.0								
Pentachlorophenol	ND	100								
Pyridine	ND	5.0								
2,4,5-Trichlorophenol	ND	400								
2,4,6-Trichlorophenol	ND	2.0								
Cresols, Total	ND	200								
Surr: 2-Fluorophenol	0.085		0.2000		42.6	18.6	88.6			
Surr: Phenol-d5	0.077		0.2000		38.3	19.5	61.8			
Surr: 2,4,6-Tribromophenol	0.12		0.2000		58.5	29.7	130			
Surr: Nitrobenzene-d5	0.065		0.1000		65.1	45.1	101			
Surr: 2-Fluorobiphenyl	0.059		0.1000		58.5	46.6	99.3			
Surr: 4-Terphenyl-d14	0.057		0.1000		57.4	40.8	109			

Sample ID	lcs-11341		SampType:	LCS		TestCode:	EPA Method 8270C TCLP			
Client ID:	LCSS		Batch ID:	11341		RunNo:	16238			
Prep Date:	1/22/2014		Analysis Date:	1/22/2014		SeqNo:	468166		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	0.068	0.010	0.1000	0	67.7	31.5	114			
3+4-Methylphenol	0.16	0.010	0.2000	0	80.1	25.5	149			
2,4-Dinitrotoluene	0.061	0.010	0.1000	0	61.5	25.9	130			
Hexachlorobenzene	0.058	0.010	0.1000	0	57.7	40.7	93.9			
Hexachlorobutadiene	0.064	0.010	0.1000	0	63.6	25.2	96			
Hexachloroethane	0.063	0.010	0.1000	0	62.7	22.6	106			
Nitrobenzene	0.078	0.010	0.1000	0	78.1	37.8	125			
Pentachlorophenol	0.054	0.010	0.1000	0	53.8	10.8	91.7			
Pyridine	0.050	0.010	0.1000	0	50.2	9.61	88.8			
2,4,5-Trichlorophenol	0.074	0.010	0.1000	0	73.6	31.9	115			
2,4,6-Trichlorophenol	0.074	0.010	0.1000	0	74.1	29.7	113			
Cresols, Total	0.23	0.010	0.3000	0	75.9	30	136			
Surr: 2-Fluorophenol	0.11		0.2000		53.6	18.6	88.6			
Surr: Phenol-d5	0.088		0.2000		44.1	19.5	61.8			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401757

27-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Knockout Drum

Sample ID	lcs-11341		SampType: LCS		TestCode: EPA Method 8270C TCLP					
Client ID:	LCSS		Batch ID: 11341		RunNo: 16238					
Prep Date:	1/22/2014		Analysis Date: 1/22/2014		SeqNo: 468166		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	0.17		0.2000		86.5	29.7	130			
Surr: Nitrobenzene-d5	0.086		0.1000		86.1	45.1	101			
Surr: 2-Fluorobiphenyl	0.070		0.1000		69.6	46.6	99.3			
Surr: 4-Terphenyl-d14	0.070		0.1000		70.4	40.8	109			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401757

27-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Knockout Drum

Sample ID	MB-11362		SampType:	MBLK		TestCode:	MERCURY, TCLP				
Client ID:	PBW		Batch ID:	11362		RunNo:	16271				
Prep Date:	1/23/2014		Analysis Date:	1/24/2014		SeqNo:	469084		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.020									

Sample ID	LCS-11362		SampType: LCS		TestCode: MERCURY, TCLP					
Client ID:	LCSW		Batch ID: 11362		RunNo: 16271					
Prep Date:	1/23/2014		Analysis Date: 1/24/2014		SeqNo: 469085		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020	0.005000	0	104	80	120			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401757

27-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Knockout Drum

Sample ID	MB-11368		SampType: MBLK		TestCode: EPA Method 6010B: TCLP Metals					
Client ID:	PBW		Batch ID: 11368		RunNo: 16283					
Prep Date:	1/23/2014		Analysis Date: 1/24/2014		SeqNo: 469445		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	5.0								
Barium	ND	100								
Cadmium	ND	1.0								
Chromium	ND	5.0								
Lead	ND	5.0								
Selenium	ND	1.0								
Silver	ND	5.0								

Sample ID	LCS-11368		SampType: LCS		TestCode: EPA Method 6010B: TCLP Metals					
Client ID:	LCSW		Batch ID: 11368		RunNo: 16283					
Prep Date:	1/23/2014		Analysis Date: 1/24/2014		SeqNo: 469446		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	5.0	0.5000	0	100	80	120			
Barium	ND	100	0.5000	0	92.6	80	120			
Cadmium	ND	1.0	0.5000	0	96.6	80	120			
Chromium	ND	5.0	0.5000	0	92.6	80	120			
Lead	ND	5.0	0.5000	0	92.8	80	120			
Selenium	ND	1.0	0.5000	0	92.8	80	120			
Silver	ND	5.0	0.1000	0	102	80	120			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1401757

RcptNo: 1

Received by/date:

mg

01/17/14

Logged By: Michelle Garcia

1/17/2014 4:30:00 PM

Michelle Garcia

Completed By: Michelle Garcia

1/18/2014 11:38:58 AM

Michelle Garcia

Reviewed By:

mg

01/20/14

### Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Client

### Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH: \_\_\_\_\_  
( $<2$  or  $>12$  unless noted)  
Adjusted? \_\_\_\_\_  
Checked by: \_\_\_\_\_

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.8	Good	Not Present			





Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

January 24, 2014

Beck Larsen

Western Refining Southwest, Gallup  
92 Giant Crossing Road  
Gallup, NM 87301  
TEL: (505) 722-0258  
FAX (505) 722-0210

RE: Flare Knockout Drum

OrderNo.: 1401757

Dear Beck Larsen:

Hall Environmental Analysis Laboratory received 8 sample(s) on 1/17/2014 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #1

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 1:43:00 PM

**Lab ID:** 1401757-001

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>MERCURY, TCLP</b>							Analyst: <b>ELS</b>
Mercury	ND	0.020		mg/L	1	1/24/2014 8:06:47 AM	11362
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>JLF</b>
Arsenic	ND	5.0		mg/L	1	1/24/2014 12:24:05 PM	11368
Barium	ND	100		mg/L	1	1/24/2014 12:24:05 PM	11368
Cadmium	ND	1.0		mg/L	1	1/24/2014 12:24:05 PM	11368
Chromium	ND	5.0		mg/L	1	1/24/2014 12:24:05 PM	11368
Lead	ND	5.0		mg/L	1	1/24/2014 12:24:05 PM	11368
Selenium	ND	1.0		mg/L	1	1/24/2014 12:24:05 PM	11368
Silver	ND	5.0		mg/L	1	1/24/2014 12:24:05 PM	11368
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	1/22/2014 7:33:05 PM	11341
3+4-Methylphenol	ND	200		mg/L	1	1/22/2014 7:33:05 PM	11341
Phenol	ND	200		mg/L	1	1/22/2014 7:33:05 PM	11341
2,4-Dinitrotoluene	ND	0.13		mg/L	1	1/22/2014 7:33:05 PM	11341
Hexachlorobenzene	ND	0.13		mg/L	1	1/22/2014 7:33:05 PM	11341
Hexachlorobutadiene	ND	0.50		mg/L	1	1/22/2014 7:33:05 PM	11341
Hexachloroethane	ND	3.0		mg/L	1	1/22/2014 7:33:05 PM	11341
Nitrobenzene	ND	2.0		mg/L	1	1/22/2014 7:33:05 PM	11341
Pentachlorophenol	ND	100		mg/L	1	1/22/2014 7:33:05 PM	11341
Pyridine	ND	5.0		mg/L	1	1/22/2014 7:33:05 PM	11341
2,4,5-Trichlorophenol	ND	400		mg/L	1	1/22/2014 7:33:05 PM	11341
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	1/22/2014 7:33:05 PM	11341
Cresols, Total	ND	200		mg/L	1	1/22/2014 7:33:05 PM	11341
Surr: 2-Fluorophenol	53.3	18.6-88.6		%REC	1	1/22/2014 7:33:05 PM	11341
Surr: Phenol-d5	45.2	19.5-61.8		%REC	1	1/22/2014 7:33:05 PM	11341
Surr: 2,4,6-Tribromophenol	86.2	29.7-130		%REC	1	1/22/2014 7:33:05 PM	11341
Surr: Nitrobenzene-d5	90.7	45.1-101		%REC	1	1/22/2014 7:33:05 PM	11341
Surr: 2-Fluorobiphenyl	80.0	46.6-99.3		%REC	1	1/22/2014 7:33:05 PM	11341
Surr: 4-Terphenyl-d14	74.1	40.8-109		%REC	1	1/22/2014 7:33:05 PM	11341
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Benzene	ND	0.50		ppm	10	1/22/2014 1:39:23 PM	11304
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	1/22/2014 1:39:23 PM	11304
2-Butanone	ND	200		ppm	10	1/22/2014 1:39:23 PM	11304
Carbon tetrachloride	ND	0.50		ppm	10	1/22/2014 1:39:23 PM	11304
Chlorobenzene	ND	100		ppm	10	1/22/2014 1:39:23 PM	11304
Chloroform	ND	6.0		ppm	10	1/22/2014 1:39:23 PM	11304
1,4-Dichlorobenzene	ND	7.5		ppm	10	1/22/2014 1:39:23 PM	11304
1,1-Dichloroethene	ND	0.70		ppm	10	1/22/2014 1:39:23 PM	11304

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2 for VOA and TOC only.
RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #1

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 1:43:00 PM

**Lab ID:** 1401757-001

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Tetrachloroethene (PCE)	ND	0.70		ppm	10	1/22/2014 1:39:23 PM	11304
Trichloroethene (TCE)	ND	0.50		ppm	10	1/22/2014 1:39:23 PM	11304
Vinyl chloride	ND	0.20		ppm	10	1/22/2014 1:39:23 PM	11304
Surr: 1,2-Dichloroethane-d4	91.1	70-130		%REC	10	1/22/2014 1:39:23 PM	11304
Surr: 4-Bromofluorobenzene	101	70-130		%REC	10	1/22/2014 1:39:23 PM	11304
Surr: Dibromofluoromethane	104	70-130		%REC	10	1/22/2014 1:39:23 PM	11304
Surr: Toluene-d8	97.3	70-130		%REC	10	1/22/2014 1:39:23 PM	11304
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>BCN</b>
Petroleum Hydrocarbons, TR	680	20		mg/Kg	1	1/22/2014	11317

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #2

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 1:53:00 PM

**Lab ID:** 1401757-002

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>MERCURY, TCLP</b>							Analyst: <b>ELS</b>
Mercury	ND	0.020		mg/L	1	1/24/2014 8:08:37 AM	11362
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>JLF</b>
Arsenic	ND	5.0		mg/L	1	1/24/2014 12:25:16 PM	11368
Barium	ND	100		mg/L	1	1/24/2014 12:25:16 PM	11368
Cadmium	ND	1.0		mg/L	1	1/24/2014 12:25:16 PM	11368
Chromium	ND	5.0		mg/L	1	1/24/2014 12:25:16 PM	11368
Lead	ND	5.0		mg/L	1	1/24/2014 12:25:16 PM	11368
Selenium	ND	1.0		mg/L	1	1/24/2014 12:25:16 PM	11368
Silver	ND	5.0		mg/L	1	1/24/2014 12:25:16 PM	11368
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	1/22/2014 3:12:24 PM	11341
3+4-Methylphenol	ND	200		mg/L	1	1/22/2014 3:12:24 PM	11341
Phenol	ND	200		mg/L	1	1/22/2014 3:12:24 PM	11341
2,4-Dinitrotoluene	ND	0.13		mg/L	1	1/22/2014 3:12:24 PM	11341
Hexachlorobenzene	ND	0.13		mg/L	1	1/22/2014 3:12:24 PM	11341
Hexachlorobutadiene	ND	0.50		mg/L	1	1/22/2014 3:12:24 PM	11341
Hexachloroethane	ND	3.0		mg/L	1	1/22/2014 3:12:24 PM	11341
Nitrobenzene	ND	2.0		mg/L	1	1/22/2014 3:12:24 PM	11341
Pentachlorophenol	ND	100		mg/L	1	1/22/2014 3:12:24 PM	11341
Pyridine	ND	5.0		mg/L	1	1/22/2014 3:12:24 PM	11341
2,4,5-Trichlorophenol	ND	400		mg/L	1	1/22/2014 3:12:24 PM	11341
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	1/22/2014 3:12:24 PM	11341
Cresols, Total	ND	200		mg/L	1	1/22/2014 3:12:24 PM	11341
Surr: 2-Fluorophenol	69.9	18.6-88.6		%REC	1	1/22/2014 3:12:24 PM	11341
Surr: Phenol-d5	55.5	19.5-61.8		%REC	1	1/22/2014 3:12:24 PM	11341
Surr: 2,4,6-Tribromophenol	89.9	29.7-130		%REC	1	1/22/2014 3:12:24 PM	11341
Surr: Nitrobenzene-d5	101	45.1-101		%REC	1	1/22/2014 3:12:24 PM	11341
Surr: 2-Fluorobiphenyl	89.5	46.6-99.3		%REC	1	1/22/2014 3:12:24 PM	11341
Surr: 4-Terphenyl-d14	79.5	40.8-109		%REC	1	1/22/2014 3:12:24 PM	11341
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Benzene	ND	0.50		ppm	10	1/21/2014 7:20:45 PM	11304
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	1/21/2014 7:20:45 PM	11304
2-Butanone	ND	200		ppm	10	1/21/2014 7:20:45 PM	11304
Carbon tetrachloride	ND	0.50		ppm	10	1/21/2014 7:20:45 PM	11304
Chlorobenzene	ND	100		ppm	10	1/21/2014 7:20:45 PM	11304
Chloroform	ND	6.0		ppm	10	1/21/2014 7:20:45 PM	11304
1,4-Dichlorobenzene	ND	7.5		ppm	10	1/21/2014 7:20:45 PM	11304
1,1-Dichloroethene	ND	0.70		ppm	10	1/21/2014 7:20:45 PM	11304

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2 for VOA and TOC only.
RL	Reporting Detection Limit



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #2

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 1:53:00 PM

**Lab ID:** 1401757-002

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Tetrachloroethene (PCE)	ND	0.70		ppm	10	1/21/2014 7:20:45 PM	11304
Trichloroethene (TCE)	ND	0.50		ppm	10	1/21/2014 7:20:45 PM	11304
Vinyl chloride	ND	0.20		ppm	10	1/21/2014 7:20:45 PM	11304
Surr: 1,2-Dichloroethane-d4	95.6	70-130		%REC	10	1/21/2014 7:20:45 PM	11304
Surr: 4-Bromofluorobenzene	96.2	70-130		%REC	10	1/21/2014 7:20:45 PM	11304
Surr: Dibromofluoromethane	104	70-130		%REC	10	1/21/2014 7:20:45 PM	11304
Surr: Toluene-d8	103	70-130		%REC	10	1/21/2014 7:20:45 PM	11304
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>BCN</b>
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	1/22/2014	11317

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #3

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 1:58:00 PM

**Lab ID:** 1401757-003

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>MERCURY, TCLP</b>							Analyst: <b>ELS</b>
Mercury	ND	0.020		mg/L	1	1/24/2014 8:10:30 AM	11362
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>JLF</b>
Arsenic	ND	5.0		mg/L	1	1/24/2014 12:26:26 PM	11368
Barium	ND	100		mg/L	1	1/24/2014 12:26:26 PM	11368
Cadmium	ND	1.0		mg/L	1	1/24/2014 12:26:26 PM	11368
Chromium	ND	5.0		mg/L	1	1/24/2014 12:26:26 PM	11368
Lead	ND	5.0		mg/L	1	1/24/2014 12:26:26 PM	11368
Selenium	ND	1.0		mg/L	1	1/24/2014 12:26:26 PM	11368
Silver	ND	5.0		mg/L	1	1/24/2014 12:26:26 PM	11368
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	1/22/2014 8:02:02 PM	11341
3+4-Methylphenol	ND	200		mg/L	1	1/22/2014 8:02:02 PM	11341
Phenol	ND	200		mg/L	1	1/22/2014 8:02:02 PM	11341
2,4-Dinitrotoluene	ND	0.13		mg/L	1	1/22/2014 8:02:02 PM	11341
Hexachlorobenzene	ND	0.13		mg/L	1	1/22/2014 8:02:02 PM	11341
Hexachlorobutadiene	ND	0.50		mg/L	1	1/22/2014 8:02:02 PM	11341
Hexachloroethane	ND	3.0		mg/L	1	1/22/2014 8:02:02 PM	11341
Nitrobenzene	ND	2.0		mg/L	1	1/22/2014 8:02:02 PM	11341
Pentachlorophenol	ND	100		mg/L	1	1/22/2014 8:02:02 PM	11341
Pyridine	ND	5.0		mg/L	1	1/22/2014 8:02:02 PM	11341
2,4,5-Trichlorophenol	ND	400		mg/L	1	1/22/2014 8:02:02 PM	11341
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	1/22/2014 8:02:02 PM	11341
Cresols, Total	ND	200		mg/L	1	1/22/2014 8:02:02 PM	11341
Surr: 2-Fluorophenol	49.8	18.6-88.6		%REC	1	1/22/2014 8:02:02 PM	11341
Surr: Phenol-d5	41.2	19.5-61.8		%REC	1	1/22/2014 8:02:02 PM	11341
Surr: 2,4,6-Tribromophenol	72.8	29.7-130		%REC	1	1/22/2014 8:02:02 PM	11341
Surr: Nitrobenzene-d5	74.2	45.1-101		%REC	1	1/22/2014 8:02:02 PM	11341
Surr: 2-Fluorobiphenyl	76.5	46.6-99.3		%REC	1	1/22/2014 8:02:02 PM	11341
Surr: 4-Terphenyl-d14	63.9	40.8-109		%REC	1	1/22/2014 8:02:02 PM	11341
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Benzene	ND	0.50		ppm	10	1/21/2014 7:49:25 PM	11304
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	1/21/2014 7:49:25 PM	11304
2-Butanone	ND	200		ppm	10	1/21/2014 7:49:25 PM	11304
Carbon tetrachloride	ND	0.50		ppm	10	1/21/2014 7:49:25 PM	11304
Chlorobenzene	ND	100		ppm	10	1/21/2014 7:49:25 PM	11304
Chloroform	ND	6.0		ppm	10	1/21/2014 7:49:25 PM	11304
1,4-Dichlorobenzene	ND	7.5		ppm	10	1/21/2014 7:49:25 PM	11304
1,1-Dichloroethene	ND	0.70		ppm	10	1/21/2014 7:49:25 PM	11304

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2 for VOA and TOC only.
RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #3

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 1:58:00 PM

**Lab ID:** 1401757-003

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Tetrachloroethene (PCE)	ND	0.70		ppm	10	1/21/2014 7:49:25 PM	11304
Trichloroethene (TCE)	ND	0.50		ppm	10	1/21/2014 7:49:25 PM	11304
Vinyl chloride	ND	0.20		ppm	10	1/21/2014 7:49:25 PM	11304
Surr: 1,2-Dichloroethane-d4	95.5	70-130		%REC	10	1/21/2014 7:49:25 PM	11304
Surr: 4-Bromofluorobenzene	92.9	70-130		%REC	10	1/21/2014 7:49:25 PM	11304
Surr: Dibromofluoromethane	101	70-130		%REC	10	1/21/2014 7:49:25 PM	11304
Surr: Toluene-d8	97.0	70-130		%REC	10	1/21/2014 7:49:25 PM	11304
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>BCN</b>
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	1/22/2014	11317

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #4

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 2:06:00 PM

**Lab ID:** 1401757-004

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>MERCURY, TCLP</b>							Analyst: <b>ELS</b>
Mercury	ND	0.020		mg/L	1	1/24/2014 8:12:20 AM	11362
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>JLF</b>
Arsenic	ND	5.0		mg/L	1	1/24/2014 12:27:37 PM	11368
Barium	ND	100		mg/L	1	1/24/2014 12:27:37 PM	11368
Cadmium	ND	1.0		mg/L	1	1/24/2014 12:27:37 PM	11368
Chromium	ND	5.0		mg/L	1	1/24/2014 12:27:37 PM	11368
Lead	ND	5.0		mg/L	1	1/24/2014 12:27:37 PM	11368
Selenium	ND	1.0		mg/L	1	1/24/2014 12:27:37 PM	11368
Silver	ND	5.0		mg/L	1	1/24/2014 12:27:37 PM	11368
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	1/22/2014 3:41:33 PM	11341
3+4-Methylphenol	ND	200		mg/L	1	1/22/2014 3:41:33 PM	11341
Phenol	ND	200		mg/L	1	1/22/2014 3:41:33 PM	11341
2,4-Dinitrotoluene	ND	0.13		mg/L	1	1/22/2014 3:41:33 PM	11341
Hexachlorobenzene	ND	0.13		mg/L	1	1/22/2014 3:41:33 PM	11341
Hexachlorobutadiene	ND	0.50		mg/L	1	1/22/2014 3:41:33 PM	11341
Hexachloroethane	ND	3.0		mg/L	1	1/22/2014 3:41:33 PM	11341
Nitrobenzene	ND	2.0		mg/L	1	1/22/2014 3:41:33 PM	11341
Pentachlorophenol	ND	100		mg/L	1	1/22/2014 3:41:33 PM	11341
Pyridine	ND	5.0		mg/L	1	1/22/2014 3:41:33 PM	11341
2,4,5-Trichlorophenol	ND	400		mg/L	1	1/22/2014 3:41:33 PM	11341
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	1/22/2014 3:41:33 PM	11341
Cresols, Total	ND	200		mg/L	1	1/22/2014 3:41:33 PM	11341
Surr: 2-Fluorophenol	50.1	18.6-88.6		%REC	1	1/22/2014 3:41:33 PM	11341
Surr: Phenol-d5	42.7	19.5-61.8		%REC	1	1/22/2014 3:41:33 PM	11341
Surr: 2,4,6-Tribromophenol	73.7	29.7-130		%REC	1	1/22/2014 3:41:33 PM	11341
Surr: Nitrobenzene-d5	83.1	45.1-101		%REC	1	1/22/2014 3:41:33 PM	11341
Surr: 2-Fluorobiphenyl	81.6	46.6-99.3		%REC	1	1/22/2014 3:41:33 PM	11341
Surr: 4-Terphenyl-d14	70.8	40.8-109		%REC	1	1/22/2014 3:41:33 PM	11341
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Benzene	ND	0.50		ppm	10	1/21/2014 8:18:06 PM	11304
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	1/21/2014 8:18:06 PM	11304
2-Butanone	ND	200		ppm	10	1/21/2014 8:18:06 PM	11304
Carbon tetrachloride	ND	0.50		ppm	10	1/21/2014 8:18:06 PM	11304
Chlorobenzene	ND	100		ppm	10	1/21/2014 8:18:06 PM	11304
Chloroform	ND	6.0		ppm	10	1/21/2014 8:18:06 PM	11304
1,4-Dichlorobenzene	ND	7.5		ppm	10	1/21/2014 8:18:06 PM	11304
1,1-Dichloroethene	ND	0.70		ppm	10	1/21/2014 8:18:06 PM	11304

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* 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	ND Not Detected at the Reporting Limit
	O RSD is greater than RSDlimit	P Sample pH greater than 2 for VOA and TOC only.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #4

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 2:06:00 PM

**Lab ID:** 1401757-004

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Tetrachloroethene (PCE)	ND	0.70		ppm	10	1/21/2014 8:18:06 PM	11304
Trichloroethene (TCE)	ND	0.50		ppm	10	1/21/2014 8:18:06 PM	11304
Vinyl chloride	ND	0.20		ppm	10	1/21/2014 8:18:06 PM	11304
Surr: 1,2-Dichloroethane-d4	92.6	70-130		%REC	10	1/21/2014 8:18:06 PM	11304
Surr: 4-Bromofluorobenzene	107	70-130		%REC	10	1/21/2014 8:18:06 PM	11304
Surr: Dibromofluoromethane	101	70-130		%REC	10	1/21/2014 8:18:06 PM	11304
Surr: Toluene-d8	98.2	70-130		%REC	10	1/21/2014 8:18:06 PM	11304
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>BCN</b>
Petroleum Hydrocarbons, TR	23	20		mg/Kg	1	1/22/2014	11317

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #5

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 2:13:00 PM

**Lab ID:** 1401757-005

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>MERCURY, TCLP</b>							Analyst: <b>ELS</b>
Mercury	ND	0.020		mg/L	1	1/24/2014 8:14:11 AM	11362
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>JLF</b>
Arsenic	ND	5.0		mg/L	1	1/24/2014 12:28:53 PM	11368
Barium	ND	100		mg/L	1	1/24/2014 12:28:53 PM	11368
Cadmium	ND	1.0		mg/L	1	1/24/2014 12:28:53 PM	11368
Chromium	ND	5.0		mg/L	1	1/24/2014 12:28:53 PM	11368
Lead	ND	5.0		mg/L	1	1/24/2014 12:28:53 PM	11368
Selenium	ND	1.0		mg/L	1	1/24/2014 12:28:53 PM	11368
Silver	ND	5.0		mg/L	1	1/24/2014 12:28:53 PM	11368
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	1/22/2014 8:30:43 PM	11341
3+4-Methylphenol	ND	200		mg/L	1	1/22/2014 8:30:43 PM	11341
Phenol	ND	200		mg/L	1	1/22/2014 8:30:43 PM	11341
2,4-Dinitrotoluene	ND	0.13		mg/L	1	1/22/2014 8:30:43 PM	11341
Hexachlorobenzene	ND	0.13		mg/L	1	1/22/2014 8:30:43 PM	11341
Hexachlorobutadiene	ND	0.50		mg/L	1	1/22/2014 8:30:43 PM	11341
Hexachloroethane	ND	3.0		mg/L	1	1/22/2014 8:30:43 PM	11341
Nitrobenzene	ND	2.0		mg/L	1	1/22/2014 8:30:43 PM	11341
Pentachlorophenol	ND	100		mg/L	1	1/22/2014 8:30:43 PM	11341
Pyridine	ND	5.0		mg/L	1	1/22/2014 8:30:43 PM	11341
2,4,5-Trichlorophenol	ND	400		mg/L	1	1/22/2014 8:30:43 PM	11341
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	1/22/2014 8:30:43 PM	11341
Cresols, Total	ND	200		mg/L	1	1/22/2014 8:30:43 PM	11341
Surr: 2-Fluorophenol	36.5	18.6-88.6		%REC	1	1/22/2014 8:30:43 PM	11341
Surr: Phenol-d5	29.6	19.5-61.8		%REC	1	1/22/2014 8:30:43 PM	11341
Surr: 2,4,6-Tribromophenol	54.4	29.7-130		%REC	1	1/22/2014 8:30:43 PM	11341
Surr: Nitrobenzene-d5	54.0	45.1-101		%REC	1	1/22/2014 8:30:43 PM	11341
Surr: 2-Fluorobiphenyl	51.1	46.6-99.3		%REC	1	1/22/2014 8:30:43 PM	11341
Surr: 4-Terphenyl-d14	49.9	40.8-109		%REC	1	1/22/2014 8:30:43 PM	11341
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Benzene	ND	0.50		ppm	10	1/21/2014 8:46:53 PM	11304
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	1/21/2014 8:46:53 PM	11304
2-Butanone	ND	200		ppm	10	1/21/2014 8:46:53 PM	11304
Carbon tetrachloride	ND	0.50		ppm	10	1/21/2014 8:46:53 PM	11304
Chlorobenzene	ND	100		ppm	10	1/21/2014 8:46:53 PM	11304
Chloroform	ND	6.0		ppm	10	1/21/2014 8:46:53 PM	11304
1,4-Dichlorobenzene	ND	7.5		ppm	10	1/21/2014 8:46:53 PM	11304
1,1-Dichloroethene	ND	0.70		ppm	10	1/21/2014 8:46:53 PM	11304

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #5

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 2:13:00 PM

**Lab ID:** 1401757-005

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Tetrachloroethene (PCE)	ND	0.70		ppm	10	1/21/2014 8:46:53 PM	11304
Trichloroethene (TCE)	ND	0.50		ppm	10	1/21/2014 8:46:53 PM	11304
Vinyl chloride	ND	0.20		ppm	10	1/21/2014 8:46:53 PM	11304
Surr: 1,2-Dichloroethane-d4	91.6	70-130		%REC	10	1/21/2014 8:46:53 PM	11304
Surr: 4-Bromofluorobenzene	93.8	70-130		%REC	10	1/21/2014 8:46:53 PM	11304
Surr: Dibromofluoromethane	102	70-130		%REC	10	1/21/2014 8:46:53 PM	11304
Surr: Toluene-d8	101	70-130		%REC	10	1/21/2014 8:46:53 PM	11304
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>BCN</b>
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	1/22/2014	11317

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #6

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 2:18:00 PM

**Lab ID:** 1401757-006

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>MERCURY, TCLP</b>							Analyst: <b>ELS</b>
Mercury	ND	0.020		mg/L	1	1/24/2014 8:15:55 AM	11362
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>JLF</b>
Arsenic	ND	5.0		mg/L	1	1/24/2014 12:30:03 PM	11368
Barium	ND	100		mg/L	1	1/24/2014 12:30:03 PM	11368
Cadmium	ND	1.0		mg/L	1	1/24/2014 12:30:03 PM	11368
Chromium	ND	5.0		mg/L	1	1/24/2014 12:30:03 PM	11368
Lead	ND	5.0		mg/L	1	1/24/2014 12:30:03 PM	11368
Selenium	ND	1.0		mg/L	1	1/24/2014 12:30:03 PM	11368
Silver	ND	5.0		mg/L	1	1/24/2014 12:30:03 PM	11368
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	1/22/2014 4:10:16 PM	11341
3+4-Methylphenol	ND	200		mg/L	1	1/22/2014 4:10:16 PM	11341
Phenol	ND	200		mg/L	1	1/22/2014 4:10:16 PM	11341
2,4-Dinitrotoluene	ND	0.13		mg/L	1	1/22/2014 4:10:16 PM	11341
Hexachlorobenzene	ND	0.13		mg/L	1	1/22/2014 4:10:16 PM	11341
Hexachlorobutadiene	ND	0.50		mg/L	1	1/22/2014 4:10:16 PM	11341
Hexachloroethane	ND	3.0		mg/L	1	1/22/2014 4:10:16 PM	11341
Nitrobenzene	ND	2.0		mg/L	1	1/22/2014 4:10:16 PM	11341
Pentachlorophenol	ND	100		mg/L	1	1/22/2014 4:10:16 PM	11341
Pyridine	ND	5.0		mg/L	1	1/22/2014 4:10:16 PM	11341
2,4,5-Trichlorophenol	ND	400		mg/L	1	1/22/2014 4:10:16 PM	11341
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	1/22/2014 4:10:16 PM	11341
Cresols, Total	ND	200		mg/L	1	1/22/2014 4:10:16 PM	11341
Surr: 2-Fluorophenol	66.8	18.6-88.6		%REC	1	1/22/2014 4:10:16 PM	11341
Surr: Phenol-d5	53.0	19.5-61.8		%REC	1	1/22/2014 4:10:16 PM	11341
Surr: 2,4,6-Tribromophenol	87.3	29.7-130		%REC	1	1/22/2014 4:10:16 PM	11341
Surr: Nitrobenzene-d5	87.5	45.1-101		%REC	1	1/22/2014 4:10:16 PM	11341
Surr: 2-Fluorobiphenyl	85.4	46.6-99.3		%REC	1	1/22/2014 4:10:16 PM	11341
Surr: 4-Terphenyl-d14	73.6	40.8-109		%REC	1	1/22/2014 4:10:16 PM	11341
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Benzene	ND	0.50		ppm	10	1/21/2014 9:15:42 PM	11304
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	1/21/2014 9:15:42 PM	11304
2-Butanone	ND	200		ppm	10	1/21/2014 9:15:42 PM	11304
Carbon tetrachloride	ND	0.50		ppm	10	1/21/2014 9:15:42 PM	11304
Chlorobenzene	ND	100		ppm	10	1/21/2014 9:15:42 PM	11304
Chloroform	ND	6.0		ppm	10	1/21/2014 9:15:42 PM	11304
1,4-Dichlorobenzene	ND	7.5		ppm	10	1/21/2014 9:15:42 PM	11304
1,1-Dichloroethene	ND	0.70		ppm	10	1/21/2014 9:15:42 PM	11304

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2 for VOA and TOC only.
RL	Reporting Detection Limit



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #6

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 2:18:00 PM

**Lab ID:** 1401757-006

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Tetrachloroethene (PCE)	ND	0.70		ppm	10	1/21/2014 9:15:42 PM	11304
Trichloroethene (TCE)	ND	0.50		ppm	10	1/21/2014 9:15:42 PM	11304
Vinyl chloride	ND	0.20		ppm	10	1/21/2014 9:15:42 PM	11304
Surr: 1,2-Dichloroethane-d4	88.8	70-130		%REC	10	1/21/2014 9:15:42 PM	11304
Surr: 4-Bromofluorobenzene	98.5	70-130		%REC	10	1/21/2014 9:15:42 PM	11304
Surr: Dibromofluoromethane	99.1	70-130		%REC	10	1/21/2014 9:15:42 PM	11304
Surr: Toluene-d8	103	70-130		%REC	10	1/21/2014 9:15:42 PM	11304
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>BCN</b>
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	1/22/2014	11317

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #7

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 2:23:00 PM

**Lab ID:** 1401757-007

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>MERCURY, TCLP</b>							Analyst: <b>ELS</b>
Mercury	ND	0.020		mg/L	1	1/24/2014 8:17:39 AM	11362
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>JLF</b>
Arsenic	ND	5.0		mg/L	1	1/24/2014 12:31:16 PM	11368
Barium	ND	100		mg/L	1	1/24/2014 12:31:16 PM	11368
Cadmium	ND	1.0		mg/L	1	1/24/2014 12:31:16 PM	11368
Chromium	ND	5.0		mg/L	1	1/24/2014 12:31:16 PM	11368
Lead	ND	5.0		mg/L	1	1/24/2014 12:31:16 PM	11368
Selenium	ND	1.0		mg/L	1	1/24/2014 12:31:16 PM	11368
Silver	ND	5.0		mg/L	1	1/24/2014 12:31:16 PM	11368
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	1/22/2014 9:28:28 PM	11341
3+4-Methylphenol	ND	200		mg/L	1	1/22/2014 9:28:28 PM	11341
Phenol	ND	200		mg/L	1	1/22/2014 9:28:28 PM	11341
2,4-Dinitrotoluene	ND	0.13		mg/L	1	1/22/2014 9:28:28 PM	11341
Hexachlorobenzene	ND	0.13		mg/L	1	1/22/2014 9:28:28 PM	11341
Hexachlorobutadiene	ND	0.50		mg/L	1	1/22/2014 9:28:28 PM	11341
Hexachloroethane	ND	3.0		mg/L	1	1/22/2014 9:28:28 PM	11341
Nitrobenzene	ND	2.0		mg/L	1	1/22/2014 9:28:28 PM	11341
Pentachlorophenol	ND	100		mg/L	1	1/22/2014 9:28:28 PM	11341
Pyridine	ND	5.0		mg/L	1	1/22/2014 9:28:28 PM	11341
2,4,5-Trichlorophenol	ND	400		mg/L	1	1/22/2014 9:28:28 PM	11341
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	1/22/2014 9:28:28 PM	11341
Cresols, Total	ND	200		mg/L	1	1/22/2014 9:28:28 PM	11341
Surr: 2-Fluorophenol	51.4	18.6-88.6		%REC	1	1/22/2014 9:28:28 PM	11341
Surr: Phenol-d5	41.3	19.5-61.8		%REC	1	1/22/2014 9:28:28 PM	11341
Surr: 2,4,6-Tribromophenol	76.1	29.7-130		%REC	1	1/22/2014 9:28:28 PM	11341
Surr: Nitrobenzene-d5	75.1	45.1-101		%REC	1	1/22/2014 9:28:28 PM	11341
Surr: 2-Fluorobiphenyl	77.5	46.6-99.3		%REC	1	1/22/2014 9:28:28 PM	11341
Surr: 4-Terphenyl-d14	67.0	40.8-109		%REC	1	1/22/2014 9:28:28 PM	11341
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Benzene	ND	0.50		ppm	10	1/21/2014 9:44:27 PM	11304
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	1/21/2014 9:44:27 PM	11304
2-Butanone	ND	200		ppm	10	1/21/2014 9:44:27 PM	11304
Carbon tetrachloride	ND	0.50		ppm	10	1/21/2014 9:44:27 PM	11304
Chlorobenzene	ND	100		ppm	10	1/21/2014 9:44:27 PM	11304
Chloroform	ND	6.0		ppm	10	1/21/2014 9:44:27 PM	11304
1,4-Dichlorobenzene	ND	7.5		ppm	10	1/21/2014 9:44:27 PM	11304
1,1-Dichloroethene	ND	0.70		ppm	10	1/21/2014 9:44:27 PM	11304

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2 for VOA and TOC only.
RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #7

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 2:23:00 PM

**Lab ID:** 1401757-007

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Tetrachloroethene (PCE)	ND	0.70		ppm	10	1/21/2014 9:44:27 PM	11304
Trichloroethene (TCE)	ND	0.50		ppm	10	1/21/2014 9:44:27 PM	11304
Vinyl chloride	ND	0.20		ppm	10	1/21/2014 9:44:27 PM	11304
Surr: 1,2-Dichloroethane-d4	91.1	70-130		%REC	10	1/21/2014 9:44:27 PM	11304
Surr: 4-Bromofluorobenzene	77.9	70-130		%REC	10	1/21/2014 9:44:27 PM	11304
Surr: Dibromofluoromethane	100	70-130		%REC	10	1/21/2014 9:44:27 PM	11304
Surr: Toluene-d8	99.4	70-130		%REC	10	1/21/2014 9:44:27 PM	11304
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>BCN</b>
Petroleum Hydrocarbons, TR	1600	200		mg/Kg	10	1/22/2014	11317

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #8

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 2:27:00 PM

**Lab ID:** 1401757-008

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>MERCURY, TCLP</b>							Analyst: <b>ELS</b>
Mercury	ND	0.020		mg/L	1	1/24/2014 8:19:24 AM	11362
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>JLF</b>
Arsenic	ND	5.0		mg/L	1	1/24/2014 12:32:27 PM	11368
Barium	ND	100		mg/L	1	1/24/2014 12:32:27 PM	11368
Cadmium	ND	1.0		mg/L	1	1/24/2014 12:32:27 PM	11368
Chromium	ND	5.0		mg/L	1	1/24/2014 12:32:27 PM	11368
Lead	ND	5.0		mg/L	1	1/24/2014 12:32:27 PM	11368
Selenium	ND	1.0		mg/L	1	1/24/2014 12:32:27 PM	11368
Silver	ND	5.0		mg/L	1	1/24/2014 12:32:27 PM	11368
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	1/22/2014 4:39:09 PM	11341
3+4-Methylphenol	ND	200		mg/L	1	1/22/2014 4:39:09 PM	11341
Phenol	ND	200		mg/L	1	1/22/2014 4:39:09 PM	11341
2,4-Dinitrotoluene	ND	0.13		mg/L	1	1/22/2014 4:39:09 PM	11341
Hexachlorobenzene	ND	0.13		mg/L	1	1/22/2014 4:39:09 PM	11341
Hexachlorobutadiene	ND	0.50		mg/L	1	1/22/2014 4:39:09 PM	11341
Hexachloroethane	ND	3.0		mg/L	1	1/22/2014 4:39:09 PM	11341
Nitrobenzene	ND	2.0		mg/L	1	1/22/2014 4:39:09 PM	11341
Pentachlorophenol	ND	100		mg/L	1	1/22/2014 4:39:09 PM	11341
Pyridine	ND	5.0		mg/L	1	1/22/2014 4:39:09 PM	11341
2,4,5-Trichlorophenol	ND	400		mg/L	1	1/22/2014 4:39:09 PM	11341
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	1/22/2014 4:39:09 PM	11341
Cresols, Total	ND	200		mg/L	1	1/22/2014 4:39:09 PM	11341
Surr: 2-Fluorophenol	63.9	18.6-88.6		%REC	1	1/22/2014 4:39:09 PM	11341
Surr: Phenol-d5	51.0	19.5-61.8		%REC	1	1/22/2014 4:39:09 PM	11341
Surr: 2,4,6-Tribromophenol	81.3	29.7-130		%REC	1	1/22/2014 4:39:09 PM	11341
Surr: Nitrobenzene-d5	90.1	45.1-101		%REC	1	1/22/2014 4:39:09 PM	11341
Surr: 2-Fluorobiphenyl	87.5	46.6-99.3		%REC	1	1/22/2014 4:39:09 PM	11341
Surr: 4-Terphenyl-d14	73.8	40.8-109		%REC	1	1/22/2014 4:39:09 PM	11341
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Benzene	ND	0.50		ppm	10	1/21/2014 11:39:23 PM	11304
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	1/21/2014 11:39:23 PM	11304
2-Butanone	ND	200		ppm	10	1/21/2014 11:39:23 PM	11304
Carbon tetrachloride	ND	0.50		ppm	10	1/21/2014 11:39:23 PM	11304
Chlorobenzene	ND	100		ppm	10	1/21/2014 11:39:23 PM	11304
Chloroform	ND	6.0		ppm	10	1/21/2014 11:39:23 PM	11304
1,4-Dichlorobenzene	ND	7.5		ppm	10	1/21/2014 11:39:23 PM	11304
1,1-Dichloroethene	ND	0.70		ppm	10	1/21/2014 11:39:23 PM	11304

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits
	S	Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2 for VOA and TOC only.
RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1401757**

Date Reported: **1/24/2014**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Flare KO Drum Leak #8

**Project:** Flare Knockout Drum

**Collection Date:** 1/13/2014 2:27:00 PM

**Lab ID:** 1401757-008

**Matrix:** SOLID

**Received Date:** 1/17/2014 4:30:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: TCLP COMPOUNDS</b>							Analyst: <b>cadg</b>
Tetrachloroethene (PCE)	ND	0.70		ppm	10	1/21/2014 11:39:23 PM	11304
Trichloroethene (TCE)	ND	0.50		ppm	10	1/21/2014 11:39:23 PM	11304
Vinyl chloride	ND	0.20		ppm	10	1/21/2014 11:39:23 PM	11304
Surr: 1,2-Dichloroethane-d4	99.2	70-130		%REC	10	1/21/2014 11:39:23 PM	11304
Surr: 4-Bromofluorobenzene	99.9	70-130		%REC	10	1/21/2014 11:39:23 PM	11304
Surr: Dibromofluoromethane	107	70-130		%REC	10	1/21/2014 11:39:23 PM	11304
Surr: Toluene-d8	97.0	70-130		%REC	10	1/21/2014 11:39:23 PM	11304
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>BCN</b>
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	1/22/2014	11317

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

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**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 140121034  
**Project Name:** 1401757

## Analytical Results Report

<b>Sample Number</b>	140121034-001	<b>Sampling Date</b>	1/13/2014	<b>Date/Time Received</b>	1/21/2014 1:26 AM
<b>Client Sample ID</b>	1401757-001B / FLARE KO DRUM LEAK #1			<b>Sampling Time</b>	1:43 PM
<b>Matrix</b>	Soil	<b>Sample Location</b>			
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	1	1/23/2014	CRW	SW846 CH7	
Ignitability	Negative			1/22/2014	JWC	EPA 1030	
pH	8.42	ph Units		1/22/2014	AJT	EPA 9045	
Reactive sulfide	39.4	mg/kg	12.3	1/22/2014	AJT	SW846 CH7	
Sulfur	624	mg/kg	300	1/22/2014	ALS	EPA 6010B	

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**Attn:** ANDY FREEMAN

**Batch #:** 140121034  
**Project Name:** 1401757

## Analytical Results Report

<b>Sample Number</b>	140121034-002	<b>Sampling Date</b>	1/13/2014	<b>Date/Time Received</b>	1/21/2014 1:26 AM
<b>Client Sample ID</b>	1401757-002B / FLARE KO DRUM LEAK #2			<b>Sampling Time</b>	1:53 PM
<b>Matrix</b>	Soil	<b>Sample Location</b>			
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	1	1/23/2014	CRW	SW846 CH7	
Ignitability	Negative			1/22/2014	JWC	EPA 1030	
pH	8.44	ph Units		1/22/2014	AJT	EPA 9045	
Reactive sulfide	ND	mg/kg	12.3	1/22/2014	AJT	SW846 CH7	
Sulfur	ND	mg/kg	300	1/22/2014	ALS	EPA 6010B	

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**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
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**Attn:** ANDY FREEMAN

**Batch #:** 140121034  
**Project Name:** 1401757

## Analytical Results Report

<b>Sample Number</b>	140121034-003	<b>Sampling Date</b>	1/13/2014	<b>Date/Time Received</b>	1/21/2014 1:26 AM
<b>Client Sample ID</b>	1401757-003B / FLARE KO DRUM LEAK #3			<b>Sampling Time</b>	1:58 PM
<b>Matrix</b>	Soil	<b>Sample Location</b>			
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	1	1/23/2014	CRW	SW846 CH7	
Ignitability	Negative			1/22/2014	JWC	EPA 1030	
pH	8.37	ph Units		1/22/2014	AJT	EPA 9045	
Reactive sulfide	ND	mg/kg	12.3	1/22/2014	AJT	SW846 CH7	
Sulfur	2510	mg/kg	300	1/22/2014	ALS	EPA 6010B	



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**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
**Address:** 4901 HAWKINS NE SUITE D  
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**Attn:** ANDY FREEMAN

**Batch #:** 140121034  
**Project Name:** 1401757

## Analytical Results Report

<b>Sample Number</b>	140121034-004	<b>Sampling Date</b>	1/13/2014	<b>Date/Time Received</b>	1/21/2014 1:26 AM
<b>Client Sample ID</b>	1401757-004B / FLARE KO DRUM LEAK #4			<b>Sampling Time</b>	2:06 PM
<b>Matrix</b>	Soil	<b>Sample Location</b>			
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	1	1/23/2014	CRW	SW846 CH7	
Ignitability	Negative			1/22/2014	JWC	EPA 1030	
pH	8.67	ph Units		1/22/2014	AJT	EPA 9045	
Reactive sulfide	ND	mg/kg	10.7	1/22/2014	AJT	SW846 CH7	
Sulfur	ND	mg/kg	300	1/22/2014	ALS	EPA 6010B	

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**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 140121034  
**Project Name:** 1401757

## Analytical Results Report

<b>Sample Number</b>	140121034-005	<b>Sampling Date</b>	1/13/2014	<b>Date/Time Received</b>	1/21/2014 1:26 AM
<b>Client Sample ID</b>	1401757-005B / FLARE KO DRUM LEAK #5			<b>Sampling Time</b>	2:13 PM
<b>Matrix</b>	Soil	<b>Sample Location</b>			
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	1	1/23/2014	CRW	SW846 CH7	
Ignitability	Negative			1/22/2014	JWC	EPA 1030	
pH	8.00	ph Units		1/22/2014	AJT	EPA 9045	
Reactive sulfide	14.5	mg/kg	12.1	1/22/2014	AJT	SW846 CH7	
Sulfur	838	mg/kg	300	1/22/2014	ALS	EPA 6010B	

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**Attn:** ANDY FREEMAN

**Batch #:** 140121034  
**Project Name:** 1401757

## Analytical Results Report

<b>Sample Number</b>	140121034-006	<b>Sampling Date</b>	1/13/2014	<b>Date/Time Received</b>	1/21/2014 1:26 AM
<b>Client Sample ID</b>	1401757-006B / FLARE KO DRUM LEAK #6			<b>Sampling Time</b>	2:18 PM
<b>Matrix</b>	Soil	<b>Sample Location</b>			
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	1	1/23/2014	CRW	SW846 CH7	
Ignitability	Negative			1/22/2014	JWC	EPA 1030	
pH	8.20	ph Units		1/22/2014	AJT	EPA 9045	
Reactive sulfide	ND	mg/kg	12.5	1/22/2014	AJT	SW846 CH7	
Sulfur	956	mg/kg	300	1/22/2014	ALS	EPA 6010B	

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**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 140121034  
**Project Name:** 1401757

## Analytical Results Report

<b>Sample Number</b>	140121034-007	<b>Sampling Date</b>	1/13/2014	<b>Date/Time Received</b>	1/21/2014 1:26 AM
<b>Client Sample ID</b>	1401757-007B / FLARE KO DRUM LEAK #7			<b>Sampling Time</b>	2:23 PM
<b>Matrix</b>	Soil	<b>Sample Location</b>			
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	1	1/23/2014	CRW	SW846 CH7	
Ignitability	Negative			1/22/2014	JWC	EPA 1030	
pH	9.12	ph Units		1/22/2014	AJT	EPA 9045	
Reactive sulfide	15.3	mg/kg	11	1/22/2014	AJT	SW846 CH7	
Sulfur	375	mg/kg	300	1/22/2014	ALS	EPA 6010B	

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**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 140121034  
**Project Name:** 1401757

## Analytical Results Report

**Sample Number** 140121034-008 **Sampling Date** 1/13/2014 **Date/Time Received** 1/21/2014 1:26 AM  
**Client Sample ID** 1401757-008B / FLARE KO DRUM LEAK #8 **Sampling Time** 2:27 PM  
**Matrix** Soil **Sample Location**  
**Comments**

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	1	1/23/2014	CRW	SW846 CH7	
Ignitability	Negative			1/22/2014	JWC	EPA 1030	
pH	9.22	ph Units		1/22/2014	AJT	EPA 9045	
Reactive sulfide	ND	mg/kg	12.6	1/22/2014	AJT	SW846 CH7	
Sulfur	ND	mg/kg	300	1/22/2014	ALS	EPA 6010B	

Authorized Signature

  
John Coddington, Lab Manager

MCL EPA's Maximum Contaminant Level  
ND Not Detected  
PQL Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.  
The results reported relate only to the samples indicated.  
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; MT:Cert0028; NM: ID00013; OR:ID200001-002; WA:C595  
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

Thursday, January 23, 2014

Page 8 of 8

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401757

27-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Knockout Drum

Sample ID	MB-11317		SampType:	MBLK		TestCode:	EPA Method 418.1: TPH				
Client ID:	PBS		Batch ID:	11317		RunNo:	16223				
Prep Date:	1/20/2014		Analysis Date:	1/22/2014		SeqNo:	467772		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Petroleum Hydrocarbons, TR	ND	20									

Sample ID	LCS-11317		SampType: LCS		TestCode: EPA Method 418.1: TPH					
Client ID:	LCSS		Batch ID: 11317		RunNo: 16223					
Prep Date:	1/20/2014		Analysis Date: 1/22/2014		SeqNo: 467773		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	100	20	100.0	0	101	80	120			

Sample ID	LCSD-11317		SampType: LCSD		TestCode: EPA Method 418.1: TPH					
Client ID:	LCSS02		Batch ID: 11317		RunNo: 16223					
Prep Date:	1/20/2014		Analysis Date: 1/22/2014		SeqNo: 467774		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	100	20	100.0	0	100	80	120	1.15	20	

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401757

27-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Knockout Drum

Sample ID	lcs-11304		SampType: LCS		TestCode: EPA Method 8260B: TCLP Compounds					
Client ID:	LCSS		Batch ID: 11304		RunNo: 16209					
Prep Date:	1/20/2014		Analysis Date: 1/21/2014		SeqNo: 467224		Units: ppm			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.050	1.000	0	90.7	70	130			
Chlorobenzene	0.88	0.10	1.000	0	87.9	70	130			
1,1-Dichloroethene	1.2	0.070	1.000	0	119	69.3	131			
Trichloroethene (TCE)	0.80	0.050	1.000	0	80.3	70	130			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		93.0	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		94.6	70	130			
Surr: Dibromofluoromethane	0.49		0.5000		97.4	70	130			
Surr: Toluene-d8	0.47		0.5000		94.3	70	130			

Sample ID	1401757-001AMS		SampType: MS		TestCode: EPA Method 8260B: TCLP Compounds					
Client ID:	Flare KO Drum Leak		Batch ID: 11304		RunNo: 16209					
Prep Date:	1/20/2014		Analysis Date: 1/21/2014		SeqNo: 467226		Units: ppm			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.50	0.9980	0	108	65.1	127			
Chlorobenzene	0.97	0.50	0.9980	0	96.8	66.8	129			
1,1-Dichloroethene	1.0	0.70	0.9980	0	103	44.1	148			
Trichloroethene (TCE)	1.1	0.50	0.9980	0	109	63.2	122			
Surr: 1,2-Dichloroethane-d4	5.3		4.990		107	70	130			
Surr: 4-Bromofluorobenzene	5.2		4.990		103	70	130			
Surr: Dibromofluoromethane	5.7		4.990		114	70	130			
Surr: Toluene-d8	5.8		4.990		116	70	130			

Sample ID	1401757-001AMSD		SampType: MSD		TestCode: EPA Method 8260B: TCLP Compounds					
Client ID:	Flare KO Drum Leak		Batch ID: 11304		RunNo: 16209					
Prep Date:	1/20/2014		Analysis Date: 1/21/2014		SeqNo: 467227		Units: ppm			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.50	0.9990	0	103	65.1	127	4.11	20	
Chlorobenzene	0.99	0.50	0.9990	0	98.9	66.8	129	2.17	20	
1,1-Dichloroethene	1.1	0.70	0.9990	0	114	44.1	148	10.3	20	
Trichloroethene (TCE)	0.92	0.50	0.9990	0	92.1	63.2	122	16.8	20	
Surr: 1,2-Dichloroethane-d4	4.6		4.995		92.0	70	130	0	0	
Surr: 4-Bromofluorobenzene	4.9		4.995		98.1	70	130	0	0	
Surr: Dibromofluoromethane	5.1		4.995		103	70	130	0	0	
Surr: Toluene-d8	3.7		4.995		73.3	70	130	0	0	

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401757

27-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Knockout Drum

Sample ID	mb-11304		SampType:	MBLK		TestCode:	EPA Method 8260B: TCLP Compounds			
Client ID:	PBS		Batch ID:	11304		RunNo:	16236			
Prep Date:	1/20/2014		Analysis Date:	1/22/2014		SeqNo:	468121		Units: ppm	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
2-Butanone	ND	20								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	10								
Chloroform	ND	0.60								
1,4-Dichlorobenzene	ND	0.75								
1,1-Dichloroethene	ND	0.070								
Tetrachloroethene (PCE)	ND	0.070								
Trichloroethene (TCE)	ND	0.050								
Vinyl chloride	ND	0.020								
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		103	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		93.6	70	130			
Surr: Dibromofluoromethane	0.56		0.5000		113	70	130			
Surr: Toluene-d8	0.43		0.5000		86.1	70	130			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401757

27-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Knockout Drum

Sample ID	mb-11341		SampType:	MBLK		TestCode:	EPA Method 8270C TCLP			
Client ID:	PBS		Batch ID:	11341		RunNo:	16238			
Prep Date:	1/22/2014		Analysis Date:	1/22/2014		SeqNo:	468165		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	ND	200								
3+4-Methylphenol	ND	200								
Phenol	ND	200								
2,4-Dinitrotoluene	ND	0.13								
Hexachlorobenzene	ND	0.13								
Hexachlorobutadiene	ND	0.50								
Hexachloroethane	ND	3.0								
Nitrobenzene	ND	2.0								
Pentachlorophenol	ND	100								
Pyridine	ND	5.0								
2,4,5-Trichlorophenol	ND	400								
2,4,6-Trichlorophenol	ND	2.0								
Cresols, Total	ND	200								
Surr: 2-Fluorophenol	0.085		0.2000		42.6	18.6	88.6			
Surr: Phenol-d5	0.077		0.2000		38.3	19.5	61.8			
Surr: 2,4,6-Tribromophenol	0.12		0.2000		58.5	29.7	130			
Surr: Nitrobenzene-d5	0.065		0.1000		65.1	45.1	101			
Surr: 2-Fluorobiphenyl	0.059		0.1000		58.5	46.6	99.3			
Surr: 4-Terphenyl-d14	0.057		0.1000		57.4	40.8	109			

Sample ID	lcs-11341		SampType:	LCS		TestCode:	EPA Method 8270C TCLP			
Client ID:	LCSS		Batch ID:	11341		RunNo:	16238			
Prep Date:	1/22/2014		Analysis Date:	1/22/2014		SeqNo:	468166		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	0.068	0.010	0.1000	0	67.7	31.5	114			
3+4-Methylphenol	0.16	0.010	0.2000	0	80.1	25.5	149			
2,4-Dinitrotoluene	0.061	0.010	0.1000	0	61.5	25.9	130			
Hexachlorobenzene	0.058	0.010	0.1000	0	57.7	40.7	93.9			
Hexachlorobutadiene	0.064	0.010	0.1000	0	63.6	25.2	96			
Hexachloroethane	0.063	0.010	0.1000	0	62.7	22.6	106			
Nitrobenzene	0.078	0.010	0.1000	0	78.1	37.8	125			
Pentachlorophenol	0.054	0.010	0.1000	0	53.8	10.8	91.7			
Pyridine	0.050	0.010	0.1000	0	50.2	9.61	88.8			
2,4,5-Trichlorophenol	0.074	0.010	0.1000	0	73.6	31.9	115			
2,4,6-Trichlorophenol	0.074	0.010	0.1000	0	74.1	29.7	113			
Cresols, Total	0.23	0.010	0.3000	0	75.9	30	136			
Surr: 2-Fluorophenol	0.11		0.2000		53.6	18.6	88.6			
Surr: Phenol-d5	0.088		0.2000		44.1	19.5	61.8			

### 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	ND Not Detected at the Reporting Limit
O RSD is greater than RSDlimit	P Sample pH greater than 2 for VOA and TOC only.
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S Spike Recovery outside accepted recovery limits	

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401757

27-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Knockout Drum

Sample ID	lcs-11341		SampType: LCS		TestCode: EPA Method 8270C TCLP					
Client ID:	LCSS		Batch ID: 11341		RunNo: 16238					
Prep Date:	1/22/2014		Analysis Date: 1/22/2014		SeqNo: 468166		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	0.17		0.2000		86.5	29.7	130			
Surr: Nitrobenzene-d5	0.086		0.1000		86.1	45.1	101			
Surr: 2-Fluorobiphenyl	0.070		0.1000		69.6	46.6	99.3			
Surr: 4-Terphenyl-d14	0.070		0.1000		70.4	40.8	109			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401757

27-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Knockout Drum

Sample ID	MB-11362		SampType:	MBLK		TestCode:	MERCURY, TCLP				
Client ID:	PBW		Batch ID:	11362		RunNo:	16271				
Prep Date:	1/23/2014		Analysis Date:	1/24/2014		SeqNo:	469084		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.020									

Sample ID	LCS-11362			SampType:	LCS		TestCode:	MERCURY, TCLP			
Client ID:	LCSW			Batch ID:	11362		RunNo:	16271			
Prep Date:	1/23/2014			Analysis Date:	1/24/2014		SeqNo:	469085		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.020	0.005000	0	104	80	120				

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1401757

27-Jan-14

Client: Western Refining Southwest, Gallup

Project: Flare Knockout Drum

Sample ID	MB-11368		SampType: MBLK		TestCode: EPA Method 6010B: TCLP Metals					
Client ID:	PBW		Batch ID: 11368		RunNo: 16283					
Prep Date:	1/23/2014		Analysis Date: 1/24/2014		SeqNo: 469445		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	5.0								
Barium	ND	100								
Cadmium	ND	1.0								
Chromium	ND	5.0								
Lead	ND	5.0								
Selenium	ND	1.0								
Silver	ND	5.0								

Sample ID	LCS-11368		SampType: LCS		TestCode: EPA Method 6010B: TCLP Metals					
Client ID:	LCSW		Batch ID: 11368		RunNo: 16283					
Prep Date:	1/23/2014		Analysis Date: 1/24/2014		SeqNo: 469446		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	5.0	0.5000	0	100	80	120			
Barium	ND	100	0.5000	0	92.6	80	120			
Cadmium	ND	1.0	0.5000	0	96.6	80	120			
Chromium	ND	5.0	0.5000	0	92.6	80	120			
Lead	ND	5.0	0.5000	0	92.8	80	120			
Selenium	ND	1.0	0.5000	0	92.8	80	120			
Silver	ND	5.0	0.1000	0	102	80	120			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1401757

RcptNo: 1

Received by/date:

mg

01/17/14

Logged By: Michelle Garcia

1/17/2014 4:30:00 PM

Michelle Garcia

Completed By: Michelle Garcia

1/18/2014 11:38:58 AM

Michelle Garcia

Reviewed By:

mg

01/20/14

### Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Client

### Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH: \_\_\_\_\_  
( $<2$  or  $>12$  unless noted)  
Adjusted? \_\_\_\_\_  
Checked by: \_\_\_\_\_

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.8	Good	Not Present			



## Chavez, Carl J, EMNRD

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Friday, February 07, 2014 4:25 PM  
**To:** 'Riege, Ed'; VanHorn, Kristen, NMENV; VonGonten, Glenn, EMNRD  
**Cc:** Johnson, Cheryl; Hains, Allen; Scott T. Crouch  
**Subject:** RE: Evaporation Pond Chlorides  
**Attachments:** C-141 EP Seeps 2-7-2014.pdf

Ed:

The answer to your question in Western's October 14, 2013 letter (see attachment) is "Yes".

Please proceed. Sorry for the late response.

Thank you.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Department Oil Conservation Division, Environmental Bureau

1220 South St. Francis Drive, Santa Fe, New Mexico 87505

O: (505) 476-3490

E-mail: [CarlJ.Chavez@State.NM.US](mailto:CarlJ.Chavez@State.NM.US)

Web: <http://www.emnrd.state.nm.us/ocd/>

“Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?” To see how, please go to: “Pollution Prevention & Waste Minimization” at <http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>

-----Original Message-----

From: Riege, Ed [<mailto:Ed.Riege@wnr.com>]

Sent: Monday, October 14, 2013 8:18 AM

To: Chavez, Carl J, EMNRD; VanHorn, Kristen, NMENV; VonGonten, Glenn, EMNRD

Cc: Johnson, Cheryl; Hains, Allen; Scott T. Crouch

Subject: Evaporation Pond Chlorides

Carl,

Please see attached letter regarding chlorides from evaporation pond seepage. Signed hard copy is in the mail.

Thanks,

Ed

Ed Riege MPH

Environmental Manager

Western Refining

Gallup Refinery

Route 3 Box 7

Gallup, NM 87301

(505) 722-0217

**Chavez, Carl J, EMNRD**

---

**From:** Riege, Ed <Ed.Riege@wnr.com>  
**Sent:** Monday, October 14, 2013 8:18 AM  
**To:** Chavez, Carl J, EMNRD; VanHorn, Kristen, NMENV; VonGonten, Glenn, EMNRD  
**Cc:** Johnson, Cheryl; Hains, Allen; Scott T. Crouch  
**Subject:** Evaporation Pond Chlorides  
**Attachments:** perimeter soil samples - Rpt\_1307A80\_Final\_v1.pdf; DRAFT - Chloride Concentration Map.pdf; 201310140811.pdf

Carl,  
Please see attached letter regarding chlorides from evaporation pond seepage. Signed hard copy is in the mail.  
Thanks,  
Ed

Ed Riege MPH  
Environmental Manager

Western Refining  
Gallup Refinery  
Route 3 Box 7  
Gallup, NM 87301  
(505) 722-0217  
[ed.riege@wnr.com](mailto:ed.riege@wnr.com)



Certified Mail #7011 2970 0003 9281 8404

October 14, 2013

Mr. Carl Chavez  
Oil Conservation Division  
Environmental Bureau  
1220 S. St. Francis Dr.  
Santa Fe, NM 87505

Re: Remediation Standards for Chlorides From Pond Dike Seepage

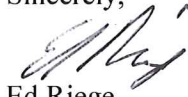
Dear Mr. Chavez:

Western submitted a C-141 Form on July 18, 2013 in response to the potential release of chemical constituents from some of the evaporation ponds during a time period when high pond levels caused seepage along the pond perimeter dikes. As noted in the C-141 Form, soil samples collected from around the perimeter of the ponds were to be analyzed for semi-volatile organics and chloride. As shown in the attached laboratory report, all analyses for semi-volatile organics were non-detect. The analyses for chloride indicate chloride concentrations in excess of the concentrations detected in the three background soil samples. The attached draft map shows the chloride concentrations around the ponds and in the three background samples.

We reviewed the OCD rules (Parts 1 through 39 of Title 19, Chapter 15) to identify appropriate remediation standards for chlorides in soils and noted that the new "pit" rules in 19.15.17.13 do provide specific remediation standards for chloride. The values in Table 1, which apply to situations where the pit contents are removed, appear to be appropriate remediation standards for the chloride we have identified in soils near some of the evaporation ponds. Before proceeding further with any additional sampling and/or remediation, I would like to get confirmation that the remediation standards for chloride in Table 1 of 19.15.17.13 are acceptable standards to guide our actions.

Please contact me at (505) 722-0217 if you have any or questions regarding this submittal.

Sincerely,



Ed Riege  
Environmental Manager

C: Glen VonGonten - email  
Kristen Van Horn- email









Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

August 06, 2013

Cheryl Johnson

Western Refining Southwest, Gallup

Rt. 3 Box 7

Gallup, NM 87301

TEL: (505) 722-0231

FAX (505) 722-0210

RE: MSGP INSPECTION REPORT

OrderNo.: 1307A80

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 16 sample(s) on 7/24/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** POND 6-1

**Project:** MSGP INSPECTION REPORT

**Collection Date:** 7/22/2013 9:02:00 AM

**Lab ID:** 1307A80-001

**Matrix:** SOIL

**Received Date:** 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>					Analyst: JRR		
Chloride	4300	300		mg/Kg	200	7/30/2013 8:03:56 PM	8576
<b>EPA METHOD 8270C: SEMIVOLATILES</b>					Analyst: DAM		
Acenaphthene	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Acenaphthylene	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Aniline	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Anthracene	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Azobenzene	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Benz(a)anthracene	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Benzo(a)pyrene	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Benzo(b)fluoranthene	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Benzo(g,h,i)perylene	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Benzo(k)fluoranthene	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Benzoic acid	ND	5.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Benzyl alcohol	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Bis(2-chloroethoxy)methane	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Bis(2-chloroethyl)ether	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Bis(2-chloroisopropyl)ether	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Bis(2-ethylhexyl)phthalate	ND	2.5		mg/Kg	1	7/30/2013 9:37:41 AM	8568
4-Bromophenyl phenyl ether	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Butyl benzyl phthalate	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Carbazole	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
4-Chloro-3-methylphenol	ND	2.5		mg/Kg	1	7/30/2013 9:37:41 AM	8568
4-Chloroaniline	ND	2.5		mg/Kg	1	7/30/2013 9:37:41 AM	8568
2-Chloronaphthalene	ND	1.3		mg/Kg	1	7/30/2013 9:37:41 AM	8568
2-Chlorophenol	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
4-Chlorophenyl phenyl ether	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Chrysene	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Di-n-butyl phthalate	ND	2.5		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Di-n-octyl phthalate	ND	2.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Dibenz(a,h)anthracene	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Dibenzofuran	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
1,2-Dichlorobenzene	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
1,3-Dichlorobenzene	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
1,4-Dichlorobenzene	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
3,3'-Dichlorobenzidine	ND	1.3		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Diethyl phthalate	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Dimethyl phthalate	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
2,4-Dichlorophenol	ND	2.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
2,4-Dimethylphenol	ND	1.5		mg/Kg	1	7/30/2013 9:37:41 AM	8568
4,6-Dinitro-2-methylphenol	ND	2.5		mg/Kg	1	7/30/2013 9:37:41 AM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: POND 6-1

Project: MSGP INSPECTION REPORT

Collection Date: 7/22/2013 9:02:00 AM

Lab ID: 1307A80-001

Matrix: SOIL

Received Date: 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C: SEMIVOLATILES</b>							Analyst: DAM
2,4-Dinitrophenol	ND	2.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
2,4-Dinitrotoluene	ND	2.5		mg/Kg	1	7/30/2013 9:37:41 AM	8568
2,6-Dinitrotoluene	ND	2.5		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Fluoranthene	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Fluorene	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Hexachlorobenzene	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Hexachlorobutadiene	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Hexachlorocyclopentadiene	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Hexachloroethane	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Indeno(1,2,3-cd)pyrene	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Isophorone	ND	2.5		mg/Kg	1	7/30/2013 9:37:41 AM	8568
1-Methylnaphthalene	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
2-Methylnaphthalene	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
2-Methylphenol	ND	2.5		mg/Kg	1	7/30/2013 9:37:41 AM	8568
3+4-Methylphenol	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
N-Nitrosodi-n-propylamine	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
N-Nitrosodiphenylamine	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Naphthalene	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
2-Nitroaniline	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
3-Nitroaniline	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
4-Nitroaniline	ND	2.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Nitrobenzene	ND	2.5		mg/Kg	1	7/30/2013 9:37:41 AM	8568
2-Nitrophenol	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
4-Nitrophenol	ND	1.3		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Pentachlorophenol	ND	2.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Phenanthrene	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Phenol	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Pyrene	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Pyridine	ND	2.5		mg/Kg	1	7/30/2013 9:37:41 AM	8568
1,2,4-Trichlorobenzene	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
2,4,5-Trichlorophenol	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
2,4,6-Trichlorophenol	ND	1.0		mg/Kg	1	7/30/2013 9:37:41 AM	8568
Surr: 2,4,6-Tribromophenol	41.0	36.5-113		%REC	1	7/30/2013 9:37:41 AM	8568
Surr: 2-Fluorobiphenyl	94.2	43.3-111		%REC	1	7/30/2013 9:37:41 AM	8568
Surr: 2-Fluorophenol	88.2	32.2-118		%REC	1	7/30/2013 9:37:41 AM	8568
Surr: 4-Terphenyl-d14	78.0	29.7-111		%REC	1	7/30/2013 9:37:41 AM	8568
Surr: Nitrobenzene-d5	91.6	36.6-132		%REC	1	7/30/2013 9:37:41 AM	8568
Surr: Phenol-d5	91.4	28.5-128		%REC	1	7/30/2013 9:37:41 AM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** POND 9-1

**Project:** MSGP INSPECTION REPORT

**Collection Date:** 7/22/2013 9:17:00 AM

**Lab ID:** 1307A80-002

**Matrix:** SOIL

**Received Date:** 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>					Analyst: JRR		
Chloride	14000	750		mg/Kg	500	7/30/2013 8:16:20 PM	8576
<b>EPA METHOD 8270C: SEMIVOLATILES</b>					Analyst: DAM		
Acenaphthene	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Acenaphthylene	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Aniline	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Anthracene	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Azobenzene	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Benz(a)anthracene	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Benzo(a)pyrene	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Benzo(b)fluoranthene	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Benzo(g,h,i)perylene	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Benzo(k)fluoranthene	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Benzoic acid	ND	0.99		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Benzyl alcohol	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Bis(2-chloroethoxy)methane	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Bis(2-chloroethyl)ether	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Bis(2-chloroisopropyl)ether	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Bis(2-ethylhexyl)phthalate	ND	0.49		mg/Kg	1	7/30/2013 12:46:46 AM	8568
4-Bromophenyl phenyl ether	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Butyl benzyl phthalate	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Carbazole	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
4-Chloro-3-methylphenol	ND	0.49		mg/Kg	1	7/30/2013 12:46:46 AM	8568
4-Chloroaniline	ND	0.49		mg/Kg	1	7/30/2013 12:46:46 AM	8568
2-Chloronaphthalene	ND	0.25		mg/Kg	1	7/30/2013 12:46:46 AM	8568
2-Chlorophenol	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
4-Chlorophenyl phenyl ether	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Chrysene	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Di-n-butyl phthalate	ND	0.49		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Di-n-octyl phthalate	ND	0.39		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Dibenz(a,h)anthracene	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Dibenzofuran	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
1,2-Dichlorobenzene	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
1,3-Dichlorobenzene	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
1,4-Dichlorobenzene	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
3,3'-Dichlorobenzidine	ND	0.25		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Diethyl phthalate	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Dimethyl phthalate	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
2,4-Dichlorophenol	ND	0.39		mg/Kg	1	7/30/2013 12:46:46 AM	8568
2,4-Dimethylphenol	ND	0.30		mg/Kg	1	7/30/2013 12:46:46 AM	8568
4,6-Dinitro-2-methylphenol	ND	0.49		mg/Kg	1	7/30/2013 12:46:46 AM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** POND 9-1

**Project:** MSGP INSPECTION REPORT

**Collection Date:** 7/22/2013 9:17:00 AM

**Lab ID:** 1307A80-002

**Matrix:** SOIL

**Received Date:** 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C: SEMIVOLATILES</b>							Analyst: <b>DAM</b>
2,4-Dinitrophenol	ND	0.39		mg/Kg	1	7/30/2013 12:46:46 AM	8568
2,4-Dinitrotoluene	ND	0.49		mg/Kg	1	7/30/2013 12:46:46 AM	8568
2,6-Dinitrotoluene	ND	0.49		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Fluoranthene	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Fluorene	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Hexachlorobenzene	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Hexachlorobutadiene	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Hexachlorocyclopentadiene	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Hexachloroethane	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Indeno(1,2,3-cd)pyrene	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Isophorone	ND	0.49		mg/Kg	1	7/30/2013 12:46:46 AM	8568
1-Methylnaphthalene	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
2-Methylnaphthalene	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
2-Methylphenol	ND	0.49		mg/Kg	1	7/30/2013 12:46:46 AM	8568
3+4-Methylphenol	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
N-Nitrosodi-n-propylamine	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
N-Nitrosodiphenylamine	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Naphthalene	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
2-Nitroaniline	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
3-Nitroaniline	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
4-Nitroaniline	ND	0.39		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Nitrobenzene	ND	0.49		mg/Kg	1	7/30/2013 12:46:46 AM	8568
2-Nitrophenol	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
4-Nitrophenol	ND	0.25		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Pentachlorophenol	ND	0.39		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Phenanthrene	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Phenol	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Pyrene	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Pyridine	ND	0.49		mg/Kg	1	7/30/2013 12:46:46 AM	8568
1,2,4-Trichlorobenzene	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
2,4,5-Trichlorophenol	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
2,4,6-Trichlorophenol	ND	0.20		mg/Kg	1	7/30/2013 12:46:46 AM	8568
Surr: 2,4,6-Tribromophenol	43.9	36.5-113		%REC	1	7/30/2013 12:46:46 AM	8568
Surr: 2-Fluorobiphenyl	78.1	43.3-111		%REC	1	7/30/2013 12:46:46 AM	8568
Surr: 2-Fluorophenol	71.8	32.2-118		%REC	1	7/30/2013 12:46:46 AM	8568
Surr: 4-Terphenyl-d14	71.3	29.7-111		%REC	1	7/30/2013 12:46:46 AM	8568
Surr: Nitrobenzene-d5	69.0	36.6-132		%REC	1	7/30/2013 12:46:46 AM	8568
Surr: Phenol-d5	69.0	28.5-128		%REC	1	7/30/2013 12:46:46 AM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** POND 9-2

**Project:** MSGP INSPECTION REPORT

**Collection Date:** 7/22/2013 9:30:00 AM

**Lab ID:** 1307A80-003

**Matrix:** SOIL

**Received Date:** 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>					Analyst: JRR		
Chloride	8800	750		mg/Kg	500	7/30/2013 8:28:45 PM	8576
<b>EPA METHOD 8270C: SEMIVOLATILES</b>					Analyst: DAM		
Acenaphthene	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Acenaphthylene	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Aniline	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Anthracene	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Azobenzene	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Benz(a)anthracene	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Benzo(a)pyrene	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Benzo(b)fluoranthene	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Benzo(g,h,i)perylene	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Benzo(k)fluoranthene	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Benzoic acid	ND	0.99		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Benzyl alcohol	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Bis(2-chloroethoxy)methane	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Bis(2-chloroethyl)ether	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Bis(2-chloroisopropyl)ether	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Bis(2-ethylhexyl)phthalate	ND	0.49		mg/Kg	1	7/29/2013 8:27:52 PM	8568
4-Bromophenyl phenyl ether	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Butyl benzyl phthalate	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Carbazole	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
4-Chloro-3-methylphenol	ND	0.49		mg/Kg	1	7/29/2013 8:27:52 PM	8568
4-Chloroaniline	ND	0.49		mg/Kg	1	7/29/2013 8:27:52 PM	8568
2-Chloronaphthalene	ND	0.25		mg/Kg	1	7/29/2013 8:27:52 PM	8568
2-Chlorophenol	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
4-Chlorophenyl phenyl ether	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Chrysene	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Di-n-butyl phthalate	ND	0.49		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Di-n-octyl phthalate	ND	0.39		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Dibenz(a,h)anthracene	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Dibenzofuran	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
1,2-Dichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
1,3-Dichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
1,4-Dichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
3,3'-Dichlorobenzidine	ND	0.25		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Diethyl phthalate	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Dimethyl phthalate	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
2,4-Dichlorophenol	ND	0.39		mg/Kg	1	7/29/2013 8:27:52 PM	8568
2,4-Dimethylphenol	ND	0.30		mg/Kg	1	7/29/2013 8:27:52 PM	8568
4,6-Dinitro-2-methylphenol	ND	0.49		mg/Kg	1	7/29/2013 8:27:52 PM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** POND 9-2

**Project:** MSGP INSPECTION REPORT

**Collection Date:** 7/22/2013 9:30:00 AM

**Lab ID:** 1307A80-003

**Matrix:** SOIL

**Received Date:** 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C: SEMIVOLATILES</b>					Analyst: <b>DAM</b>		
2,4-Dinitrophenol	ND	0.39		mg/Kg	1	7/29/2013 8:27:52 PM	8568
2,4-Dinitrotoluene	ND	0.49		mg/Kg	1	7/29/2013 8:27:52 PM	8568
2,6-Dinitrotoluene	ND	0.49		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Fluoranthene	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Fluorene	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Hexachlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Hexachlorobutadiene	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Hexachlorocyclopentadiene	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Hexachloroethane	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Indeno(1,2,3-cd)pyrene	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Isophorone	ND	0.49		mg/Kg	1	7/29/2013 8:27:52 PM	8568
1-Methylnaphthalene	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
2-Methylnaphthalene	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
2-Methylphenol	ND	0.49		mg/Kg	1	7/29/2013 8:27:52 PM	8568
3+4-Methylphenol	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
N-Nitrosodi-n-propylamine	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
N-Nitrosodiphenylamine	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Naphthalene	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
2-Nitroaniline	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
3-Nitroaniline	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
4-Nitroaniline	ND	0.39		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Nitrobenzene	ND	0.49		mg/Kg	1	7/29/2013 8:27:52 PM	8568
2-Nitrophenol	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
4-Nitrophenol	ND	0.25		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Pentachlorophenol	ND	0.39		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Phenanthrene	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Phenol	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Pyrene	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Pyridine	ND	0.49		mg/Kg	1	7/29/2013 8:27:52 PM	8568
1,2,4-Trichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
2,4,5-Trichlorophenol	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
2,4,6-Trichlorophenol	ND	0.20		mg/Kg	1	7/29/2013 8:27:52 PM	8568
Surr: 2,4,6-Tribromophenol	42.3	36.5-113		%REC	1	7/29/2013 8:27:52 PM	8568
Surr: 2-Fluorobiphenyl	59.2	43.3-111		%REC	1	7/29/2013 8:27:52 PM	8568
Surr: 2-Fluorophenol	61.5	32.2-118		%REC	1	7/29/2013 8:27:52 PM	8568
Surr: 4-Terphenyl-d14	71.1	29.7-111		%REC	1	7/29/2013 8:27:52 PM	8568
Surr: Nitrobenzene-d5	72.6	36.6-132		%REC	1	7/29/2013 8:27:52 PM	8568
Surr: Phenol-d5	58.5	28.5-128		%REC	1	7/29/2013 8:27:52 PM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** POND 9-3

**Project:** MSGP INSPECTION REPORT

**Collection Date:** 7/22/2013 9:45:00 AM

**Lab ID:** 1307A80-004

**Matrix:** SOIL

**Received Date:** 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>					Analyst: JRR		
Chloride	13000	750		mg/Kg	500	7/30/2013 8:41:09 PM	8576
<b>EPA METHOD 8270C: SEMIVOLATILES</b>					Analyst: DAM		
Acenaphthene	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Acenaphthylene	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Aniline	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Anthracene	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Azobenzene	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Benz(a)anthracene	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Benzo(a)pyrene	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Benzo(b)fluoranthene	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Benzo(g,h,i)perylene	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Benzo(k)fluoranthene	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Benzoic acid	ND	0.97		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Benzyl alcohol	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Bis(2-chloroethoxy)methane	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Bis(2-chloroethyl)ether	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Bis(2-chloroisopropyl)ether	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Bis(2-ethylhexyl)phthalate	ND	0.49		mg/Kg	1	7/30/2013 1:15:38 AM	8568
4-Bromophenyl phenyl ether	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Butyl benzyl phthalate	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Carbazole	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
4-Chloro-3-methylphenol	ND	0.49		mg/Kg	1	7/30/2013 1:15:38 AM	8568
4-Chloroaniline	ND	0.49		mg/Kg	1	7/30/2013 1:15:38 AM	8568
2-Chloronaphthalene	ND	0.24		mg/Kg	1	7/30/2013 1:15:38 AM	8568
2-Chlorophenol	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
4-Chlorophenyl phenyl ether	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Chrysene	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Di-n-butyl phthalate	ND	0.49		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Di-n-octyl phthalate	ND	0.39		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Dibenz(a,h)anthracene	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Dibenzofuran	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
1,2-Dichlorobenzene	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
1,3-Dichlorobenzene	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
1,4-Dichlorobenzene	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
3,3'-Dichlorobenzidine	ND	0.24		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Diethyl phthalate	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Dimethyl phthalate	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
2,4-Dichlorophenol	ND	0.39		mg/Kg	1	7/30/2013 1:15:38 AM	8568
2,4-Dimethylphenol	ND	0.29		mg/Kg	1	7/30/2013 1:15:38 AM	8568
4,6-Dinitro-2-methylphenol	ND	0.49		mg/Kg	1	7/30/2013 1:15:38 AM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: POND 9-3

Project: MSGP INSPECTION REPORT

Collection Date: 7/22/2013 9:45:00 AM

Lab ID: 1307A80-004

Matrix: SOIL

Received Date: 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C: SEMIVOLATILES</b>							Analyst: DAM
2,4-Dinitrophenol	ND	0.39		mg/Kg	1	7/30/2013 1:15:38 AM	8568
2,4-Dinitrotoluene	ND	0.49		mg/Kg	1	7/30/2013 1:15:38 AM	8568
2,6-Dinitrotoluene	ND	0.49		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Fluoranthene	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Fluorene	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Hexachlorobenzene	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Hexachlorobutadiene	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Hexachlorocyclopentadiene	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Hexachloroethane	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Indeno(1,2,3-cd)pyrene	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Isophorone	ND	0.49		mg/Kg	1	7/30/2013 1:15:38 AM	8568
1-Methylnaphthalene	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
2-Methylnaphthalene	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
2-Methylphenol	ND	0.49		mg/Kg	1	7/30/2013 1:15:38 AM	8568
3+4-Methylphenol	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
N-Nitrosodi-n-propylamine	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
N-Nitrosodiphenylamine	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Naphthalene	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
2-Nitroaniline	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
3-Nitroaniline	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
4-Nitroaniline	ND	0.39		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Nitrobenzene	ND	0.49		mg/Kg	1	7/30/2013 1:15:38 AM	8568
2-Nitrophenol	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
4-Nitrophenol	ND	0.24		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Pentachlorophenol	ND	0.39		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Phenanthrene	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Phenol	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Pyrene	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Pyridine	ND	0.49		mg/Kg	1	7/30/2013 1:15:38 AM	8568
1,2,4-Trichlorobenzene	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
2,4,5-Trichlorophenol	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
2,4,6-Trichlorophenol	ND	0.19		mg/Kg	1	7/30/2013 1:15:38 AM	8568
Surr: 2,4,6-Tribromophenol	43.8	36.5-113		%REC	1	7/30/2013 1:15:38 AM	8568
Surr: 2-Fluorobiphenyl	64.1	43.3-111		%REC	1	7/30/2013 1:15:38 AM	8568
Surr: 2-Fluorophenol	67.2	32.2-118		%REC	1	7/30/2013 1:15:38 AM	8568
Surr: 4-Terphenyl-d14	66.9	29.7-111		%REC	1	7/30/2013 1:15:38 AM	8568
Surr: Nitrobenzene-d5	68.8	36.6-132		%REC	1	7/30/2013 1:15:38 AM	8568
Surr: Phenol-d5	75.9	28.5-128		%REC	1	7/30/2013 1:15:38 AM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** POND 8-1

**Project:** MSGP INSPECTION REPORT

**Collection Date:** 7/22/2013 10:00:00 AM

**Lab ID:** 1307A80-005

**Matrix:** SOIL

**Received Date:** 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>					Analyst: JRR		
Chloride	9300	750		mg/Kg	500	7/30/2013 8:53:33 PM	8576
<b>EPA METHOD 8270C: SEMIVOLATILES</b>					Analyst: DAM		
Acenaphthene	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Acenaphthylene	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Aniline	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Anthracene	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Azobenzene	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Benz(a)anthracene	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Benzo(a)pyrene	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Benzo(b)fluoranthene	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Benzo(g,h,i)perylene	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Benzo(k)fluoranthene	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Benzoic acid	ND	0.99		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Benzyl alcohol	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Bis(2-chloroethoxy)methane	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Bis(2-chloroethyl)ether	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Bis(2-chloroisopropyl)ether	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Bis(2-ethylhexyl)phthalate	ND	0.50		mg/Kg	1	7/29/2013 8:56:40 PM	8568
4-Bromophenyl phenyl ether	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Butyl benzyl phthalate	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Carbazole	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
4-Chloro-3-methylphenol	ND	0.50		mg/Kg	1	7/29/2013 8:56:40 PM	8568
4-Chloroaniline	ND	0.50		mg/Kg	1	7/29/2013 8:56:40 PM	8568
2-Chloronaphthalene	ND	0.25		mg/Kg	1	7/29/2013 8:56:40 PM	8568
2-Chlorophenol	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
4-Chlorophenyl phenyl ether	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Chrysene	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Di-n-butyl phthalate	ND	0.50		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Di-n-octyl phthalate	ND	0.40		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Dibenz(a,h)anthracene	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Dibenzofuran	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
1,2-Dichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
1,3-Dichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
1,4-Dichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
3,3'-Dichlorobenzidine	ND	0.25		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Diethyl phthalate	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Dimethyl phthalate	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
2,4-Dichlorophenol	ND	0.40		mg/Kg	1	7/29/2013 8:56:40 PM	8568
2,4-Dimethylphenol	ND	0.30		mg/Kg	1	7/29/2013 8:56:40 PM	8568
4,6-Dinitro-2-methylphenol	ND	0.50		mg/Kg	1	7/29/2013 8:56:40 PM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** POND 8-1

**Project:** MSGP INSPECTION REPORT

**Collection Date:** 7/22/2013 10:00:00 AM

**Lab ID:** 1307A80-005

**Matrix:** SOIL

**Received Date:** 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C: SEMIVOLATILES</b>					Analyst: <b>DAM</b>		
2,4-Dinitrophenol	ND	0.40		mg/Kg	1	7/29/2013 8:56:40 PM	8568
2,4-Dinitrotoluene	ND	0.50		mg/Kg	1	7/29/2013 8:56:40 PM	8568
2,6-Dinitrotoluene	ND	0.50		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Fluoranthene	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Fluorene	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Hexachlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Hexachlorobutadiene	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Hexachlorocyclopentadiene	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Hexachloroethane	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Indeno(1,2,3-cd)pyrene	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Isophorone	ND	0.50		mg/Kg	1	7/29/2013 8:56:40 PM	8568
1-Methylnaphthalene	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
2-Methylnaphthalene	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
2-Methylphenol	ND	0.50		mg/Kg	1	7/29/2013 8:56:40 PM	8568
3+4-Methylphenol	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
N-Nitrosodi-n-propylamine	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
N-Nitrosodiphenylamine	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Naphthalene	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
2-Nitroaniline	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
3-Nitroaniline	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
4-Nitroaniline	ND	0.40		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Nitrobenzene	ND	0.50		mg/Kg	1	7/29/2013 8:56:40 PM	8568
2-Nitrophenol	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
4-Nitrophenol	ND	0.25		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Pentachlorophenol	ND	0.40		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Phenanthrene	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Phenol	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Pyrene	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Pyridine	ND	0.50		mg/Kg	1	7/29/2013 8:56:40 PM	8568
1,2,4-Trichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
2,4,5-Trichlorophenol	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
2,4,6-Trichlorophenol	ND	0.20		mg/Kg	1	7/29/2013 8:56:40 PM	8568
Surr: 2,4,6-Tribromophenol	38.9	36.5-113		%REC	1	7/29/2013 8:56:40 PM	8568
Surr: 2-Fluorobiphenyl	68.5	43.3-111		%REC	1	7/29/2013 8:56:40 PM	8568
Surr: 2-Fluorophenol	73.9	32.2-118		%REC	1	7/29/2013 8:56:40 PM	8568
Surr: 4-Terphenyl-d14	59.4	29.7-111		%REC	1	7/29/2013 8:56:40 PM	8568
Surr: Nitrobenzene-d5	67.2	36.6-132		%REC	1	7/29/2013 8:56:40 PM	8568
Surr: Phenol-d5	62.9	28.5-128		%REC	1	7/29/2013 8:56:40 PM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** POND 8-2

**Project:** MSGP INSPECTION REPORT

**Collection Date:** 7/22/2013 10:15:00 AM

**Lab ID:** 1307A80-006

**Matrix:** SOIL

**Received Date:** 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>					Analyst: JRR		
Chloride	12000	300		mg/Kg	200	7/30/2013 9:05:58 PM	8576
<b>EPA METHOD 8270C: SEMIVOLATILES</b>					Analyst: DAM		
Acenaphthene	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Acenaphthylene	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Aniline	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Anthracene	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Azobenzene	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Benz(a)anthracene	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Benzo(a)pyrene	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Benzo(b)fluoranthene	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Benzo(g,h,i)perylene	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Benzo(k)fluoranthene	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Benzoic acid	ND	2.0		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Benzyl alcohol	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Bis(2-chloroethoxy)methane	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Bis(2-chloroethyl)ether	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Bis(2-chloroisopropyl)ether	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Bis(2-ethylhexyl)phthalate	ND	1.0		mg/Kg	1	7/30/2013 12:18:12 AM	8568
4-Bromophenyl phenyl ether	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Butyl benzyl phthalate	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Carbazole	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
4-Chloro-3-methylphenol	ND	1.0		mg/Kg	1	7/30/2013 12:18:12 AM	8568
4-Chloroaniline	ND	1.0		mg/Kg	1	7/30/2013 12:18:12 AM	8568
2-Chloronaphthalene	ND	0.50		mg/Kg	1	7/30/2013 12:18:12 AM	8568
2-Chlorophenol	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
4-Chlorophenyl phenyl ether	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Chrysene	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Di-n-butyl phthalate	ND	1.0		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Di-n-octyl phthalate	ND	0.81		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Dibenz(a,h)anthracene	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Dibenzofuran	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
1,2-Dichlorobenzene	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
1,3-Dichlorobenzene	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
1,4-Dichlorobenzene	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
3,3'-Dichlorobenzidine	ND	0.50		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Diethyl phthalate	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Dimethyl phthalate	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
2,4-Dichlorophenol	ND	0.81		mg/Kg	1	7/30/2013 12:18:12 AM	8568
2,4-Dimethylphenol	ND	0.60		mg/Kg	1	7/30/2013 12:18:12 AM	8568
4,6-Dinitro-2-methylphenol	ND	1.0		mg/Kg	1	7/30/2013 12:18:12 AM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1307A80**

Date Reported: **8/6/2013**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** POND 8-2

**Project:** MSGP INSPECTION REPORT

**Collection Date:** 7/22/2013 10:15:00 AM

**Lab ID:** 1307A80-006

**Matrix:** SOIL

**Received Date:** 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C: SEMIVOLATILES</b>							Analyst: <b>DAM</b>
2,4-Dinitrophenol	ND	0.81		mg/Kg	1	7/30/2013 12:18:12 AM	8568
2,4-Dinitrotoluene	ND	1.0		mg/Kg	1	7/30/2013 12:18:12 AM	8568
2,6-Dinitrotoluene	ND	1.0		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Fluoranthene	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Fluorene	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Hexachlorobenzene	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Hexachlorobutadiene	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Hexachlorocyclopentadiene	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Hexachloroethane	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Indeno(1,2,3-cd)pyrene	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Isophorone	ND	1.0		mg/Kg	1	7/30/2013 12:18:12 AM	8568
1-Methylnaphthalene	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
2-Methylnaphthalene	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
2-Methylphenol	ND	1.0		mg/Kg	1	7/30/2013 12:18:12 AM	8568
3+4-Methylphenol	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
N-Nitrosodi-n-propylamine	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
N-Nitrosodiphenylamine	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Naphthalene	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
2-Nitroaniline	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
3-Nitroaniline	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
4-Nitroaniline	ND	0.81		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Nitrobenzene	ND	1.0		mg/Kg	1	7/30/2013 12:18:12 AM	8568
2-Nitrophenol	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
4-Nitrophenol	ND	0.50		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Pentachlorophenol	ND	0.81		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Phenanthrene	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Phenol	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Pyrene	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Pyridine	ND	1.0		mg/Kg	1	7/30/2013 12:18:12 AM	8568
1,2,4-Trichlorobenzene	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
2,4,5-Trichlorophenol	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
2,4,6-Trichlorophenol	ND	0.40		mg/Kg	1	7/30/2013 12:18:12 AM	8568
Surr: 2,4,6-Tribromophenol	23.7	36.5-113	S	%REC	1	7/30/2013 12:18:12 AM	8568
Surr: 2-Fluorobiphenyl	53.8	43.3-111		%REC	1	7/30/2013 12:18:12 AM	8568
Surr: 2-Fluorophenol	44.7	32.2-118		%REC	1	7/30/2013 12:18:12 AM	8568
Surr: 4-Terphenyl-d14	48.0	29.7-111		%REC	1	7/30/2013 12:18:12 AM	8568
Surr: Nitrobenzene-d5	45.9	36.6-132		%REC	1	7/30/2013 12:18:12 AM	8568
Surr: Phenol-d5	47.9	28.5-128		%REC	1	7/30/2013 12:18:12 AM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** POND 8-3

**Project:** MSGP INSPECTION REPORT

**Collection Date:** 7/22/2013 10:30:00 AM

**Lab ID:** 1307A80-007

**Matrix:** SOIL

**Received Date:** 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>					Analyst: JRR		
Chloride	21000	750		mg/Kg	500	7/30/2013 2:53:42 PM	8634
<b>EPA METHOD 8270C: SEMIVOLATILES</b>					Analyst: DAM		
Acenaphthene	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Acenaphthylene	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Aniline	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Anthracene	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Azobenzene	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Benz(a)anthracene	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Benzo(a)pyrene	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Benzo(b)fluoranthene	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Benzo(g,h,i)perylene	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Benzo(k)fluoranthene	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Benzoic acid	ND	1.0		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Benzyl alcohol	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Bis(2-chloroethoxy)methane	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Bis(2-chloroethyl)ether	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Bis(2-chloroisopropyl)ether	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Bis(2-ethylhexyl)phthalate	ND	0.50		mg/Kg	1	7/29/2013 9:25:29 PM	8568
4-Bromophenyl phenyl ether	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Butyl benzyl phthalate	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Carbazole	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
4-Chloro-3-methylphenol	ND	0.50		mg/Kg	1	7/29/2013 9:25:29 PM	8568
4-Chloroaniline	ND	0.50		mg/Kg	1	7/29/2013 9:25:29 PM	8568
2-Chloronaphthalene	ND	0.25		mg/Kg	1	7/29/2013 9:25:29 PM	8568
2-Chlorophenol	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
4-Chlorophenyl phenyl ether	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Chrysene	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Di-n-butyl phthalate	ND	0.50		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Di-n-octyl phthalate	ND	0.40		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Dibenz(a,h)anthracene	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Dibenzofuran	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
1,2-Dichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
1,3-Dichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
1,4-Dichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
3,3'-Dichlorobenzidine	ND	0.25		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Diethyl phthalate	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Dimethyl phthalate	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
2,4-Dichlorophenol	ND	0.40		mg/Kg	1	7/29/2013 9:25:29 PM	8568
2,4-Dimethylphenol	ND	0.30		mg/Kg	1	7/29/2013 9:25:29 PM	8568
4,6-Dinitro-2-methylphenol	ND	0.50		mg/Kg	1	7/29/2013 9:25:29 PM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** POND 8-3

**Project:** MSGP INSPECTION REPORT

**Collection Date:** 7/22/2013 10:30:00 AM

**Lab ID:** 1307A80-007

**Matrix:** SOIL

**Received Date:** 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C: SEMIVOLATILES</b>					Analyst: <b>DAM</b>		
2,4-Dinitrophenol	ND	0.40		mg/Kg	1	7/29/2013 9:25:29 PM	8568
2,4-Dinitrotoluene	ND	0.50		mg/Kg	1	7/29/2013 9:25:29 PM	8568
2,6-Dinitrotoluene	ND	0.50		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Fluoranthene	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Fluorene	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Hexachlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Hexachlorobutadiene	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Hexachlorocyclopentadiene	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Hexachloroethane	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Indeno(1,2,3-cd)pyrene	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Isophorone	ND	0.50		mg/Kg	1	7/29/2013 9:25:29 PM	8568
1-Methylnaphthalene	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
2-Methylnaphthalene	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
2-Methylphenol	ND	0.50		mg/Kg	1	7/29/2013 9:25:29 PM	8568
3+4-Methylphenol	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
N-Nitrosodi-n-propylamine	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
N-Nitrosodiphenylamine	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Naphthalene	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
2-Nitroaniline	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
3-Nitroaniline	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
4-Nitroaniline	ND	0.40		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Nitrobenzene	ND	0.50		mg/Kg	1	7/29/2013 9:25:29 PM	8568
2-Nitrophenol	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
4-Nitrophenol	ND	0.25		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Pentachlorophenol	ND	0.40		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Phenanthrene	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Phenol	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Pyrene	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Pyridine	ND	0.50		mg/Kg	1	7/29/2013 9:25:29 PM	8568
1,2,4-Trichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
2,4,5-Trichlorophenol	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
2,4,6-Trichlorophenol	ND	0.20		mg/Kg	1	7/29/2013 9:25:29 PM	8568
Surr: 2,4,6-Tribromophenol	48.6	36.5-113		%REC	1	7/29/2013 9:25:29 PM	8568
Surr: 2-Fluorobiphenyl	77.4	43.3-111		%REC	1	7/29/2013 9:25:29 PM	8568
Surr: 2-Fluorophenol	83.7	32.2-118		%REC	1	7/29/2013 9:25:29 PM	8568
Surr: 4-Terphenyl-d14	67.2	29.7-111		%REC	1	7/29/2013 9:25:29 PM	8568
Surr: Nitrobenzene-d5	82.7	36.6-132		%REC	1	7/29/2013 9:25:29 PM	8568
Surr: Phenol-d5	82.1	28.5-128		%REC	1	7/29/2013 9:25:29 PM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* 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	ND Not Detected at the Reporting Limit
	O RSD is greater than RSDlimit	P Sample pH greater than 2 for VOA and TOC only.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** POND 8-4

**Project:** MSGP INSPECTION REPORT

**Collection Date:** 7/22/2013 10:45:00 AM

**Lab ID:** 1307A80-008

**Matrix:** SOIL

**Received Date:** 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JRR
Chloride	16000	750		mg/Kg	500	7/30/2013 3:18:31 PM	8634
<b>EPA METHOD 8270C: SEMIVOLATILES</b>							Analyst: DAM
Acenaphthene	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Acenaphthylene	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Aniline	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Anthracene	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Azobenzene	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Benz(a)anthracene	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Benzo(a)pyrene	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Benzo(b)fluoranthene	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Benzo(g,h,i)perylene	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Benzo(k)fluoranthene	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Benzoic acid	ND	5.1		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Benzyl alcohol	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Bis(2-chloroethoxy)methane	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Bis(2-chloroethyl)ether	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Bis(2-chloroisopropyl)ether	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Bis(2-ethylhexyl)phthalate	ND	2.5		mg/Kg	1	7/30/2013 12:35:14 PM	8568
4-Bromophenyl phenyl ether	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Butyl benzyl phthalate	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Carbazole	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
4-Chloro-3-methylphenol	ND	2.5		mg/Kg	1	7/30/2013 12:35:14 PM	8568
4-Chloroaniline	ND	2.5		mg/Kg	1	7/30/2013 12:35:14 PM	8568
2-Chloronaphthalene	ND	1.3		mg/Kg	1	7/30/2013 12:35:14 PM	8568
2-Chlorophenol	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
4-Chlorophenyl phenyl ether	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Chrysene	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Di-n-butyl phthalate	ND	2.5		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Di-n-octyl phthalate	ND	2.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Dibenz(a,h)anthracene	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Dibenzofuran	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
1,2-Dichlorobenzene	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
1,3-Dichlorobenzene	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
1,4-Dichlorobenzene	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
3,3'-Dichlorobenzidine	ND	1.3		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Diethyl phthalate	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Dimethyl phthalate	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
2,4-Dichlorophenol	ND	2.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
2,4-Dimethylphenol	ND	1.5		mg/Kg	1	7/30/2013 12:35:14 PM	8568
4,6-Dinitro-2-methylphenol	ND	2.5		mg/Kg	1	7/30/2013 12:35:14 PM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: POND 8-4

Project: MSGP INSPECTION REPORT

Collection Date: 7/22/2013 10:45:00 AM

Lab ID: 1307A80-008

Matrix: SOIL

Received Date: 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C: SEMIVOLATILES</b>							Analyst: DAM
2,4-Dinitrophenol	ND	2.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
2,4-Dinitrotoluene	ND	2.5		mg/Kg	1	7/30/2013 12:35:14 PM	8568
2,6-Dinitrotoluene	ND	2.5		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Fluoranthene	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Fluorene	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Hexachlorobenzene	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Hexachlorobutadiene	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Hexachlorocyclopentadiene	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Hexachloroethane	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Indeno(1,2,3-cd)pyrene	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Isophorone	ND	2.5		mg/Kg	1	7/30/2013 12:35:14 PM	8568
1-Methylnaphthalene	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
2-Methylnaphthalene	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
2-Methylphenol	ND	2.5		mg/Kg	1	7/30/2013 12:35:14 PM	8568
3+4-Methylphenol	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
N-Nitrosodi-n-propylamine	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
N-Nitrosodiphenylamine	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Naphthalene	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
2-Nitroaniline	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
3-Nitroaniline	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
4-Nitroaniline	ND	2.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Nitrobenzene	ND	2.5		mg/Kg	1	7/30/2013 12:35:14 PM	8568
2-Nitrophenol	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
4-Nitrophenol	ND	1.3		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Pentachlorophenol	ND	2.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Phenanthrene	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Phenol	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Pyrene	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Pyridine	ND	2.5		mg/Kg	1	7/30/2013 12:35:14 PM	8568
1,2,4-Trichlorobenzene	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
2,4,5-Trichlorophenol	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
2,4,6-Trichlorophenol	ND	1.0		mg/Kg	1	7/30/2013 12:35:14 PM	8568
Surr: 2,4,6-Tribromophenol	44.3	36.5-113		%REC	1	7/30/2013 12:35:14 PM	8568
Surr: 2-Fluorobiphenyl	87.4	43.3-111		%REC	1	7/30/2013 12:35:14 PM	8568
Surr: 2-Fluorophenol	101	32.2-118		%REC	1	7/30/2013 12:35:14 PM	8568
Surr: 4-Terphenyl-d14	83.4	29.7-111		%REC	1	7/30/2013 12:35:14 PM	8568
Surr: Nitrobenzene-d5	93.7	36.6-132		%REC	1	7/30/2013 12:35:14 PM	8568
Surr: Phenol-d5	97.6	28.5-128		%REC	1	7/30/2013 12:35:14 PM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** POND 8-5

**Project:** MSGP INSPECTION REPORT

**Collection Date:** 7/22/2013 11:00:00 AM

**Lab ID:** 1307A80-009

**Matrix:** SOIL

**Received Date:** 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>					Analyst: JRR		
Chloride	14000	750		mg/Kg	500	7/30/2013 3:43:20 PM	8634
<b>EPA METHOD 8270C: SEMIVOLATILES</b>					Analyst: DAM		
Acenaphthene	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Acenaphthylene	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Aniline	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Anthracene	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Azobenzene	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Benz(a)anthracene	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Benzo(a)pyrene	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Benzo(b)fluoranthene	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Benzo(g,h,i)perylene	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Benzo(k)fluoranthene	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Benzoic acid	ND	1.0		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Benzyl alcohol	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Bis(2-chloroethoxy)methane	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Bis(2-chloroethyl)ether	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Bis(2-chloroisopropyl)ether	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Bis(2-ethylhexyl)phthalate	ND	0.50		mg/Kg	1	7/29/2013 9:54:16 PM	8568
4-Bromophenyl phenyl ether	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Butyl benzyl phthalate	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Carbazole	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
4-Chloro-3-methylphenol	ND	0.50		mg/Kg	1	7/29/2013 9:54:16 PM	8568
4-Chloroaniline	ND	0.50		mg/Kg	1	7/29/2013 9:54:16 PM	8568
2-Chloronaphthalene	ND	0.25		mg/Kg	1	7/29/2013 9:54:16 PM	8568
2-Chlorophenol	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
4-Chlorophenyl phenyl ether	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Chrysene	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Di-n-butyl phthalate	ND	0.50		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Di-n-octyl phthalate	ND	0.40		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Dibenz(a,h)anthracene	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Dibenzofuran	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
1,2-Dichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
1,3-Dichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
1,4-Dichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
3,3'-Dichlorobenzidine	ND	0.25		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Diethyl phthalate	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Dimethyl phthalate	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
2,4-Dichlorophenol	ND	0.40		mg/Kg	1	7/29/2013 9:54:16 PM	8568
2,4-Dimethylphenol	ND	0.30		mg/Kg	1	7/29/2013 9:54:16 PM	8568
4,6-Dinitro-2-methylphenol	ND	0.50		mg/Kg	1	7/29/2013 9:54:16 PM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: POND 8-5

Project: MSGP INSPECTION REPORT

Collection Date: 7/22/2013 11:00:00 AM

Lab ID: 1307A80-009

Matrix: SOIL

Received Date: 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C: SEMIVOLATILES</b>							Analyst: DAM
2,4-Dinitrophenol	ND	0.40		mg/Kg	1	7/29/2013 9:54:16 PM	8568
2,4-Dinitrotoluene	ND	0.50		mg/Kg	1	7/29/2013 9:54:16 PM	8568
2,6-Dinitrotoluene	ND	0.50		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Fluoranthene	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Fluorene	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Hexachlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Hexachlorobutadiene	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Hexachlorocyclopentadiene	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Hexachloroethane	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Indeno(1,2,3-cd)pyrene	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Isophorone	ND	0.50		mg/Kg	1	7/29/2013 9:54:16 PM	8568
1-Methylnaphthalene	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
2-Methylnaphthalene	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
2-Methylphenol	ND	0.50		mg/Kg	1	7/29/2013 9:54:16 PM	8568
3+4-Methylphenol	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
N-Nitrosodi-n-propylamine	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
N-Nitrosodiphenylamine	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Naphthalene	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
2-Nitroaniline	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
3-Nitroaniline	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
4-Nitroaniline	ND	0.40		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Nitrobenzene	ND	0.50		mg/Kg	1	7/29/2013 9:54:16 PM	8568
2-Nitrophenol	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
4-Nitrophenol	ND	0.25		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Pentachlorophenol	ND	0.40		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Phenanthrene	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Phenol	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Pyrene	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Pyridine	ND	0.50		mg/Kg	1	7/29/2013 9:54:16 PM	8568
1,2,4-Trichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
2,4,5-Trichlorophenol	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
2,4,6-Trichlorophenol	ND	0.20		mg/Kg	1	7/29/2013 9:54:16 PM	8568
Surr: 2,4,6-Tribromophenol	41.4	36.5-113		%REC	1	7/29/2013 9:54:16 PM	8568
Surr: 2-Fluorobiphenyl	77.3	43.3-111		%REC	1	7/29/2013 9:54:16 PM	8568
Surr: 2-Fluorophenol	77.4	32.2-118		%REC	1	7/29/2013 9:54:16 PM	8568
Surr: 4-Terphenyl-d14	69.1	29.7-111		%REC	1	7/29/2013 9:54:16 PM	8568
Surr: Nitrobenzene-d5	73.9	36.6-132		%REC	1	7/29/2013 9:54:16 PM	8568
Surr: Phenol-d5	78.8	28.5-128		%REC	1	7/29/2013 9:54:16 PM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.
	E	Value above quantitation range
	J	Analyte detected below quantitation limits
	O	RSD is greater than RSDlimit
	R	RPD outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2 for VOA and TOC only.
RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** POND 7-2

**Project:** MSGP INSPECTION REPORT

**Collection Date:** 7/22/2013 11:15:00 AM

**Lab ID:** 1307A80-010

**Matrix:** SOIL

**Received Date:** 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>					Analyst: JRR		
Chloride	3300	750		mg/Kg	500	7/30/2013 4:08:10 PM	8634
<b>EPA METHOD 8270C: SEMIVOLATILES</b>					Analyst: DAM		
Acenaphthene	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Acenaphthylene	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Aniline	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Anthracene	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Azobenzene	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Benz(a)anthracene	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Benzo(a)pyrene	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Benzo(b)fluoranthene	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Benzo(g,h,i)perylene	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Benzo(k)fluoranthene	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Benzoic acid	ND	5.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Benzyl alcohol	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Bis(2-chloroethoxy)methane	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Bis(2-chloroethyl)ether	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Bis(2-chloroisopropyl)ether	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Bis(2-ethylhexyl)phthalate	ND	2.5		mg/Kg	1	7/30/2013 1:04:21 PM	8568
4-Bromophenyl phenyl ether	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Butyl benzyl phthalate	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Carbazole	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
4-Chloro-3-methylphenol	ND	2.5		mg/Kg	1	7/30/2013 1:04:21 PM	8568
4-Chloroaniline	ND	2.5		mg/Kg	1	7/30/2013 1:04:21 PM	8568
2-Chloronaphthalene	ND	1.2		mg/Kg	1	7/30/2013 1:04:21 PM	8568
2-Chlorophenol	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
4-Chlorophenyl phenyl ether	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Chrysene	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Di-n-butyl phthalate	ND	2.5		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Di-n-octyl phthalate	ND	2.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Dibenz(a,h)anthracene	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Dibenzofuran	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
1,2-Dichlorobenzene	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
1,3-Dichlorobenzene	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
1,4-Dichlorobenzene	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
3,3'-Dichlorobenzidine	ND	1.2		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Diethyl phthalate	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Dimethyl phthalate	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
2,4-Dichlorophenol	ND	2.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
2,4-Dimethylphenol	ND	1.5		mg/Kg	1	7/30/2013 1:04:21 PM	8568
4,6-Dinitro-2-methylphenol	ND	2.5		mg/Kg	1	7/30/2013 1:04:21 PM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: POND 7-2

Project: MSGP INSPECTION REPORT

Collection Date: 7/22/2013 11:15:00 AM

Lab ID: 1307A80-010

Matrix: SOIL

Received Date: 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C: SEMIVOLATILES</b>							Analyst: DAM
2,4-Dinitrophenol	ND	2.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
2,4-Dinitrotoluene	ND	2.5		mg/Kg	1	7/30/2013 1:04:21 PM	8568
2,6-Dinitrotoluene	ND	2.5		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Fluoranthene	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Fluorene	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Hexachlorobenzene	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Hexachlorobutadiene	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Hexachlorocyclopentadiene	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Hexachloroethane	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Indeno(1,2,3-cd)pyrene	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Isophorone	ND	2.5		mg/Kg	1	7/30/2013 1:04:21 PM	8568
1-Methylnaphthalene	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
2-Methylnaphthalene	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
2-Methylphenol	ND	2.5		mg/Kg	1	7/30/2013 1:04:21 PM	8568
3+4-Methylphenol	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
N-Nitrosodi-n-propylamine	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
N-Nitrosodiphenylamine	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Naphthalene	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
2-Nitroaniline	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
3-Nitroaniline	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
4-Nitroaniline	ND	2.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Nitrobenzene	ND	2.5		mg/Kg	1	7/30/2013 1:04:21 PM	8568
2-Nitrophenol	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
4-Nitrophenol	ND	1.2		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Pentachlorophenol	ND	2.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Phenanthrene	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Phenol	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Pyrene	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Pyridine	ND	2.5		mg/Kg	1	7/30/2013 1:04:21 PM	8568
1,2,4-Trichlorobenzene	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
2,4,5-Trichlorophenol	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
2,4,6-Trichlorophenol	ND	1.0		mg/Kg	1	7/30/2013 1:04:21 PM	8568
Surr: 2,4,6-Tribromophenol	39.0	36.5-113		%REC	1	7/30/2013 1:04:21 PM	8568
Surr: 2-Fluorobiphenyl	82.9	43.3-111		%REC	1	7/30/2013 1:04:21 PM	8568
Surr: 2-Fluorophenol	87.2	32.2-118		%REC	1	7/30/2013 1:04:21 PM	8568
Surr: 4-Terphenyl-d14	72.4	29.7-111		%REC	1	7/30/2013 1:04:21 PM	8568
Surr: Nitrobenzene-d5	67.0	36.6-132		%REC	1	7/30/2013 1:04:21 PM	8568
Surr: Phenol-d5	83.2	28.5-128		%REC	1	7/30/2013 1:04:21 PM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** POND 7-1

**Project:** MSGP INSPECTION REPORT

**Collection Date:** 7/22/2013 11:30:00 AM

**Lab ID:** 1307A80-011

**Matrix:** SOIL

**Received Date:** 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>					Analyst: JRR		
Chloride	14000	750		mg/Kg	500	7/30/2013 4:33:00 PM	8634
<b>EPA METHOD 8270C: SEMIVOLATILES</b>					Analyst: DAM		
Acenaphthene	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Acenaphthylene	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Aniline	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Anthracene	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Azobenzene	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Benz(a)anthracene	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Benzo(a)pyrene	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Benzo(b)fluoranthene	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Benzo(g,h,i)perylene	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Benzo(k)fluoranthene	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Benzoic acid	ND	0.99		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Benzyl alcohol	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Bis(2-chloroethoxy)methane	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Bis(2-chloroethyl)ether	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Bis(2-chloroisopropyl)ether	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Bis(2-ethylhexyl)phthalate	ND	0.49		mg/Kg	1	7/29/2013 10:23:04 PM	8568
4-Bromophenyl phenyl ether	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Butyl benzyl phthalate	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Carbazole	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
4-Chloro-3-methylphenol	ND	0.49		mg/Kg	1	7/29/2013 10:23:04 PM	8568
4-Chloroaniline	ND	0.49		mg/Kg	1	7/29/2013 10:23:04 PM	8568
2-Chloronaphthalene	ND	0.25		mg/Kg	1	7/29/2013 10:23:04 PM	8568
2-Chlorophenol	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
4-Chlorophenyl phenyl ether	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Chrysene	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Di-n-butyl phthalate	ND	0.49		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Di-n-octyl phthalate	ND	0.40		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Dibenz(a,h)anthracene	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Dibenzofuran	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
1,2-Dichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
1,3-Dichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
1,4-Dichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
3,3'-Dichlorobenzidine	ND	0.25		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Diethyl phthalate	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Dimethyl phthalate	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
2,4-Dichlorophenol	ND	0.40		mg/Kg	1	7/29/2013 10:23:04 PM	8568
2,4-Dimethylphenol	ND	0.30		mg/Kg	1	7/29/2013 10:23:04 PM	8568
4,6-Dinitro-2-methylphenol	ND	0.49		mg/Kg	1	7/29/2013 10:23:04 PM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1307A80**Date Reported: **8/6/2013****CLIENT:** Western Refining Southwest, Gallup**Client Sample ID:** POND 7-1**Project:** MSGP INSPECTION REPORT**Collection Date:** 7/22/2013 11:30:00 AM**Lab ID:** 1307A80-011**Matrix:** SOIL**Received Date:** 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C: SEMIVOLATILES</b>							Analyst: <b>DAM</b>
2,4-Dinitrophenol	ND	0.40		mg/Kg	1	7/29/2013 10:23:04 PM	8568
2,4-Dinitrotoluene	ND	0.49		mg/Kg	1	7/29/2013 10:23:04 PM	8568
2,6-Dinitrotoluene	ND	0.49		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Fluoranthene	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Fluorene	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Hexachlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Hexachlorobutadiene	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Hexachlorocyclopentadiene	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Hexachloroethane	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Indeno(1,2,3-cd)pyrene	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Isophorone	ND	0.49		mg/Kg	1	7/29/2013 10:23:04 PM	8568
1-Methylnaphthalene	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
2-Methylnaphthalene	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
2-Methylphenol	ND	0.49		mg/Kg	1	7/29/2013 10:23:04 PM	8568
3+4-Methylphenol	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
N-Nitrosodi-n-propylamine	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
N-Nitrosodiphenylamine	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Naphthalene	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
2-Nitroaniline	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
3-Nitroaniline	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
4-Nitroaniline	ND	0.40		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Nitrobenzene	ND	0.49		mg/Kg	1	7/29/2013 10:23:04 PM	8568
2-Nitrophenol	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
4-Nitrophenol	ND	0.25		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Pentachlorophenol	ND	0.40		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Phenanthrene	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Phenol	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Pyrene	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Pyridine	ND	0.49		mg/Kg	1	7/29/2013 10:23:04 PM	8568
1,2,4-Trichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
2,4,5-Trichlorophenol	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
2,4,6-Trichlorophenol	ND	0.20		mg/Kg	1	7/29/2013 10:23:04 PM	8568
Surr: 2,4,6-Tribromophenol	20.9	36.5-113	S	%REC	1	7/29/2013 10:23:04 PM	8568
Surr: 2-Fluorobiphenyl	43.1	43.3-111	S	%REC	1	7/29/2013 10:23:04 PM	8568
Surr: 2-Fluorophenol	44.1	32.2-118		%REC	1	7/29/2013 10:23:04 PM	8568
Surr: 4-Terphenyl-d14	44.1	29.7-111		%REC	1	7/29/2013 10:23:04 PM	8568
Surr: Nitrobenzene-d5	41.8	36.6-132		%REC	1	7/29/2013 10:23:04 PM	8568
Surr: Phenol-d5	41.3	28.5-128		%REC	1	7/29/2013 10:23:04 PM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** POND 11-1

**Project:** MSGP INSPECTION REPORT

**Collection Date:** 7/22/2013 11:45:00 AM

**Lab ID:** 1307A80-012

**Matrix:** SOIL

**Received Date:** 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>					Analyst: JRR		
Chloride	9300	750		mg/Kg	500	7/31/2013 4:14:09 PM	8634
<b>EPA METHOD 8270C: SEMIVOLATILES</b>					Analyst: DAM		
Acenaphthene	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Acenaphthylene	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Aniline	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Anthracene	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Azobenzene	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Benz(a)anthracene	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Benzo(a)pyrene	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Benzo(b)fluoranthene	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Benzo(g,h,i)perylene	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Benzo(k)fluoranthene	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Benzoic acid	ND	1.0		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Benzyl alcohol	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Bis(2-chloroethoxy)methane	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Bis(2-chloroethyl)ether	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Bis(2-chloroisopropyl)ether	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Bis(2-ethylhexyl)phthalate	ND	0.50		mg/Kg	1	7/29/2013 10:51:50 PM	8568
4-Bromophenyl phenyl ether	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Butyl benzyl phthalate	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Carbazole	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
4-Chloro-3-methylphenol	ND	0.50		mg/Kg	1	7/29/2013 10:51:50 PM	8568
4-Chloroaniline	ND	0.50		mg/Kg	1	7/29/2013 10:51:50 PM	8568
2-Chloronaphthalene	ND	0.25		mg/Kg	1	7/29/2013 10:51:50 PM	8568
2-Chlorophenol	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
4-Chlorophenyl phenyl ether	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Chrysene	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Di-n-butyl phthalate	ND	0.50		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Di-n-octyl phthalate	ND	0.40		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Dibenz(a,h)anthracene	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Dibenzofuran	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
1,2-Dichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
1,3-Dichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
1,4-Dichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
3,3'-Dichlorobenzidine	ND	0.25		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Diethyl phthalate	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Dimethyl phthalate	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
2,4-Dichlorophenol	ND	0.40		mg/Kg	1	7/29/2013 10:51:50 PM	8568
2,4-Dimethylphenol	ND	0.30		mg/Kg	1	7/29/2013 10:51:50 PM	8568
4,6-Dinitro-2-methylphenol	ND	0.50		mg/Kg	1	7/29/2013 10:51:50 PM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** POND 11-1

**Project:** MSGP INSPECTION REPORT

**Collection Date:** 7/22/2013 11:45:00 AM

**Lab ID:** 1307A80-012

**Matrix:** SOIL

**Received Date:** 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C: SEMIVOLATILES</b>							Analyst: <b>DAM</b>
2,4-Dinitrophenol	ND	0.40		mg/Kg	1	7/29/2013 10:51:50 PM	8568
2,4-Dinitrotoluene	ND	0.50		mg/Kg	1	7/29/2013 10:51:50 PM	8568
2,6-Dinitrotoluene	ND	0.50		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Fluoranthene	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Fluorene	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Hexachlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Hexachlorobutadiene	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Hexachlorocyclopentadiene	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Hexachloroethane	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Indeno(1,2,3-cd)pyrene	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Isophorone	ND	0.50		mg/Kg	1	7/29/2013 10:51:50 PM	8568
1-Methylnaphthalene	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
2-Methylnaphthalene	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
2-Methylphenol	ND	0.50		mg/Kg	1	7/29/2013 10:51:50 PM	8568
3+4-Methylphenol	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
N-Nitrosodi-n-propylamine	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
N-Nitrosodiphenylamine	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Naphthalene	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
2-Nitroaniline	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
3-Nitroaniline	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
4-Nitroaniline	ND	0.40		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Nitrobenzene	ND	0.50		mg/Kg	1	7/29/2013 10:51:50 PM	8568
2-Nitrophenol	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
4-Nitrophenol	ND	0.25		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Pentachlorophenol	ND	0.40		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Phenanthrene	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Phenol	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Pyrene	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Pyridine	ND	0.50		mg/Kg	1	7/29/2013 10:51:50 PM	8568
1,2,4-Trichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
2,4,5-Trichlorophenol	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
2,4,6-Trichlorophenol	ND	0.20		mg/Kg	1	7/29/2013 10:51:50 PM	8568
Surr: 2,4,6-Tribromophenol	48.2	36.5-113		%REC	1	7/29/2013 10:51:50 PM	8568
Surr: 2-Fluorobiphenyl	79.0	43.3-111		%REC	1	7/29/2013 10:51:50 PM	8568
Surr: 2-Fluorophenol	76.4	32.2-118		%REC	1	7/29/2013 10:51:50 PM	8568
Surr: 4-Terphenyl-d14	66.7	29.7-111		%REC	1	7/29/2013 10:51:50 PM	8568
Surr: Nitrobenzene-d5	70.5	36.6-132		%REC	1	7/29/2013 10:51:50 PM	8568
Surr: Phenol-d5	69.8	28.5-128		%REC	1	7/29/2013 10:51:50 PM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* 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	ND Not Detected at the Reporting Limit
	O RSD is greater than RSDlimit	P Sample pH greater than 2 for VOA and TOC only.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** POND 6-2

**Project:** MSGP INSPECTION REPORT

**Collection Date:** 7/22/2013 12:00:00 PM

**Lab ID:** 1307A80-013

**Matrix:** SOIL

**Received Date:** 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>					Analyst: JRR		
Chloride	9300	750		mg/Kg	500	7/30/2013 5:47:25 PM	8634
<b>EPA METHOD 8270C: SEMIVOLATILES</b>					Analyst: DAM		
Acenaphthene	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Acenaphthylene	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Aniline	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Anthracene	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Azobenzene	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Benz(a)anthracene	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Benzo(a)pyrene	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Benzo(b)fluoranthene	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Benzo(g,h,i)perylene	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Benzo(k)fluoranthene	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Benzoic acid	ND	10		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Benzyl alcohol	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Bis(2-chloroethoxy)methane	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Bis(2-chloroethyl)ether	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Bis(2-chloroisopropyl)ether	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Bis(2-ethylhexyl)phthalate	ND	5.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
4-Bromophenyl phenyl ether	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Butyl benzyl phthalate	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Carbazole	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
4-Chloro-3-methylphenol	ND	5.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
4-Chloroaniline	ND	5.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
2-Chloronaphthalene	ND	2.5		mg/Kg	1	7/30/2013 1:33:21 PM	8568
2-Chlorophenol	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
4-Chlorophenyl phenyl ether	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Chrysene	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Di-n-butyl phthalate	ND	5.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Di-n-octyl phthalate	ND	4.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Dibenz(a,h)anthracene	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Dibenzofuran	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
1,2-Dichlorobenzene	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
1,3-Dichlorobenzene	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
1,4-Dichlorobenzene	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
3,3'-Dichlorobenzidine	ND	2.5		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Diethyl phthalate	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Dimethyl phthalate	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
2,4-Dichlorophenol	ND	4.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
2,4-Dimethylphenol	ND	3.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
4,6-Dinitro-2-methylphenol	ND	5.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** POND 6-2

**Project:** MSGP INSPECTION REPORT

**Collection Date:** 7/22/2013 12:00:00 PM

**Lab ID:** 1307A80-013

**Matrix:** SOIL

**Received Date:** 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C: SEMIVOLATILES</b>							Analyst: <b>DAM</b>
2,4-Dinitrophenol	ND	4.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
2,4-Dinitrotoluene	ND	5.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
2,6-Dinitrotoluene	ND	5.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Fluoranthene	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Fluorene	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Hexachlorobenzene	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Hexachlorobutadiene	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Hexachlorocyclopentadiene	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Hexachloroethane	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Indeno(1,2,3-cd)pyrene	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Isophorone	ND	5.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
1-Methylnaphthalene	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
2-Methylnaphthalene	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
2-Methylphenol	ND	5.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
3+4-Methylphenol	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
N-Nitrosodi-n-propylamine	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
N-Nitrosodiphenylamine	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Naphthalene	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
2-Nitroaniline	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
3-Nitroaniline	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
4-Nitroaniline	ND	4.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Nitrobenzene	ND	5.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
2-Nitrophenol	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
4-Nitrophenol	ND	2.5		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Pentachlorophenol	ND	4.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Phenanthrene	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Phenol	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Pyrene	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Pyridine	ND	5.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
1,2,4-Trichlorobenzene	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
2,4,5-Trichlorophenol	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
2,4,6-Trichlorophenol	ND	2.0		mg/Kg	1	7/30/2013 1:33:21 PM	8568
Surr: 2,4,6-Tribromophenol	33.7	36.5-113	S	%REC	1	7/30/2013 1:33:21 PM	8568
Surr: 2-Fluorobiphenyl	77.8	43.3-111		%REC	1	7/30/2013 1:33:21 PM	8568
Surr: 2-Fluorophenol	65.2	32.2-118		%REC	1	7/30/2013 1:33:21 PM	8568
Surr: 4-Terphenyl-d14	67.1	29.7-111		%REC	1	7/30/2013 1:33:21 PM	8568
Surr: Nitrobenzene-d5	71.1	36.6-132		%REC	1	7/30/2013 1:33:21 PM	8568
Surr: Phenol-d5	76.0	28.5-128		%REC	1	7/30/2013 1:33:21 PM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** BKGD-1

**Project:** MSGP INSPECTION REPORT

**Collection Date:** 7/22/2013 12:40:00 PM

**Lab ID:** 1307A80-014

**Matrix:** SOIL

**Received Date:** 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JRR
Chloride	1100	30		mg/Kg	20	7/30/2013 5:59:49 PM	8634
<b>EPA METHOD 8270C: SEMIVOLATILES</b>							Analyst: DAM
Acenaphthene	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Acenaphthylene	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Aniline	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Anthracene	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Azobenzene	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Benz(a)anthracene	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Benzo(a)pyrene	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Benzo(b)fluoranthene	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Benzo(g,h,i)perylene	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Benzo(k)fluoranthene	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Benzoic acid	ND	1.0		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Benzyl alcohol	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Bis(2-chloroethoxy)methane	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Bis(2-chloroethyl)ether	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Bis(2-chloroisopropyl)ether	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Bis(2-ethylhexyl)phthalate	ND	0.50		mg/Kg	1	7/30/2013 2:02:27 PM	8568
4-Bromophenyl phenyl ether	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Butyl benzyl phthalate	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Carbazole	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
4-Chloro-3-methylphenol	ND	0.50		mg/Kg	1	7/30/2013 2:02:27 PM	8568
4-Chloroaniline	ND	0.50		mg/Kg	1	7/30/2013 2:02:27 PM	8568
2-Chloronaphthalene	ND	0.25		mg/Kg	1	7/30/2013 2:02:27 PM	8568
2-Chlorophenol	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
4-Chlorophenyl phenyl ether	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Chrysene	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Di-n-butyl phthalate	ND	0.50		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Di-n-octyl phthalate	ND	0.40		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Dibenz(a,h)anthracene	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Dibenzofuran	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
1,2-Dichlorobenzene	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
1,3-Dichlorobenzene	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
1,4-Dichlorobenzene	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
3,3'-Dichlorobenzidine	ND	0.25		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Diethyl phthalate	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Dimethyl phthalate	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
2,4-Dichlorophenol	ND	0.40		mg/Kg	1	7/30/2013 2:02:27 PM	8568
2,4-Dimethylphenol	ND	0.30		mg/Kg	1	7/30/2013 2:02:27 PM	8568
4,6-Dinitro-2-methylphenol	ND	0.50		mg/Kg	1	7/30/2013 2:02:27 PM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: BKGD-1

Project: MSGP INSPECTION REPORT

Collection Date: 7/22/2013 12:40:00 PM

Lab ID: 1307A80-014

Matrix: SOIL

Received Date: 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES					Analyst: DAM		
2,4-Dinitrophenol	ND	0.40		mg/Kg	1	7/30/2013 2:02:27 PM	8568
2,4-Dinitrotoluene	ND	0.50		mg/Kg	1	7/30/2013 2:02:27 PM	8568
2,6-Dinitrotoluene	ND	0.50		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Fluoranthene	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Fluorene	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Hexachlorobenzene	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Hexachlorobutadiene	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Hexachlorocyclopentadiene	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Hexachloroethane	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Indeno(1,2,3-cd)pyrene	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Isophorone	ND	0.50		mg/Kg	1	7/30/2013 2:02:27 PM	8568
1-Methylnaphthalene	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
2-Methylnaphthalene	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
2-Methylphenol	ND	0.50		mg/Kg	1	7/30/2013 2:02:27 PM	8568
3+4-Methylphenol	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
N-Nitrosodi-n-propylamine	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
N-Nitrosodiphenylamine	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Naphthalene	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
2-Nitroaniline	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
3-Nitroaniline	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
4-Nitroaniline	ND	0.40		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Nitrobenzene	ND	0.50		mg/Kg	1	7/30/2013 2:02:27 PM	8568
2-Nitrophenol	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
4-Nitrophenol	ND	0.25		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Pentachlorophenol	ND	0.40		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Phenanthrene	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Phenol	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Pyrene	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Pyridine	ND	0.50		mg/Kg	1	7/30/2013 2:02:27 PM	8568
1,2,4-Trichlorobenzene	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
2,4,5-Trichlorophenol	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
2,4,6-Trichlorophenol	ND	0.20		mg/Kg	1	7/30/2013 2:02:27 PM	8568
Surr: 2,4,6-Tribromophenol	45.5	36.5-113		%REC	1	7/30/2013 2:02:27 PM	8568
Surr: 2-Fluorobiphenyl	87.1	43.3-111		%REC	1	7/30/2013 2:02:27 PM	8568
Surr: 2-Fluorophenol	65.6	32.2-118		%REC	1	7/30/2013 2:02:27 PM	8568
Surr: 4-Terphenyl-d14	91.9	29.7-111		%REC	1	7/30/2013 2:02:27 PM	8568
Surr: Nitrobenzene-d5	74.0	36.6-132		%REC	1	7/30/2013 2:02:27 PM	8568
Surr: Phenol-d5	73.3	28.5-128		%REC	1	7/30/2013 2:02:27 PM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** BKGD-2

**Project:** MSGP INSPECTION REPORT

**Collection Date:** 7/22/2013 12:50:00 PM

**Lab ID:** 1307A80-015

**Matrix:** SOIL

**Received Date:** 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>					Analyst: JRR		
Chloride	1500	750		mg/Kg	500	7/30/2013 6:37:03 PM	8634
<b>EPA METHOD 8270C: SEMIVOLATILES</b>					Analyst: DAM		
Acenaphthene	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Acenaphthylene	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Aniline	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Anthracene	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Azobenzene	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Benz(a)anthracene	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Benzo(a)pyrene	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Benzo(b)fluoranthene	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Benzo(g,h,i)perylene	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Benzo(k)fluoranthene	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Benzoic acid	ND	1.0		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Benzyl alcohol	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Bis(2-chloroethoxy)methane	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Bis(2-chloroethyl)ether	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Bis(2-chloroisopropyl)ether	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Bis(2-ethylhexyl)phthalate	ND	0.50		mg/Kg	1	7/29/2013 11:20:36 PM	8568
4-Bromophenyl phenyl ether	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Butyl benzyl phthalate	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Carbazole	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
4-Chloro-3-methylphenol	ND	0.50		mg/Kg	1	7/29/2013 11:20:36 PM	8568
4-Chloroaniline	ND	0.50		mg/Kg	1	7/29/2013 11:20:36 PM	8568
2-Chloronaphthalene	ND	0.25		mg/Kg	1	7/29/2013 11:20:36 PM	8568
2-Chlorophenol	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
4-Chlorophenyl phenyl ether	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Chrysene	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Di-n-butyl phthalate	ND	0.50		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Di-n-octyl phthalate	ND	0.40		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Dibenz(a,h)anthracene	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Dibenzofuran	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
1,2-Dichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
1,3-Dichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
1,4-Dichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
3,3'-Dichlorobenzidine	ND	0.25		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Diethyl phthalate	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Dimethyl phthalate	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
2,4-Dichlorophenol	ND	0.40		mg/Kg	1	7/29/2013 11:20:36 PM	8568
2,4-Dimethylphenol	ND	0.30		mg/Kg	1	7/29/2013 11:20:36 PM	8568
4,6-Dinitro-2-methylphenol	ND	0.50		mg/Kg	1	7/29/2013 11:20:36 PM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** BKGD-2

**Project:** MSGP INSPECTION REPORT

**Collection Date:** 7/22/2013 12:50:00 PM

**Lab ID:** 1307A80-015

**Matrix:** SOIL

**Received Date:** 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C: SEMIVOLATILES</b>							Analyst: <b>DAM</b>
2,4-Dinitrophenol	ND	0.40		mg/Kg	1	7/29/2013 11:20:36 PM	8568
2,4-Dinitrotoluene	ND	0.50		mg/Kg	1	7/29/2013 11:20:36 PM	8568
2,6-Dinitrotoluene	ND	0.50		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Fluoranthene	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Fluorene	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Hexachlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Hexachlorobutadiene	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Hexachlorocyclopentadiene	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Hexachloroethane	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Indeno(1,2,3-cd)pyrene	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Isophorone	ND	0.50		mg/Kg	1	7/29/2013 11:20:36 PM	8568
1-Methylnaphthalene	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
2-Methylnaphthalene	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
2-Methylphenol	ND	0.50		mg/Kg	1	7/29/2013 11:20:36 PM	8568
3+4-Methylphenol	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
N-Nitrosodi-n-propylamine	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
N-Nitrosodiphenylamine	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Naphthalene	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
2-Nitroaniline	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
3-Nitroaniline	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
4-Nitroaniline	ND	0.40		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Nitrobenzene	ND	0.50		mg/Kg	1	7/29/2013 11:20:36 PM	8568
2-Nitrophenol	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
4-Nitrophenol	ND	0.25		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Pentachlorophenol	ND	0.40		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Phenanthrene	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Phenol	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Pyrene	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Pyridine	ND	0.50		mg/Kg	1	7/29/2013 11:20:36 PM	8568
1,2,4-Trichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
2,4,5-Trichlorophenol	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
2,4,6-Trichlorophenol	ND	0.20		mg/Kg	1	7/29/2013 11:20:36 PM	8568
Surr: 2,4,6-Tribromophenol	52.4	36.5-113		%REC	1	7/29/2013 11:20:36 PM	8568
Surr: 2-Fluorobiphenyl	93.3	43.3-111		%REC	1	7/29/2013 11:20:36 PM	8568
Surr: 2-Fluorophenol	72.3	32.2-118		%REC	1	7/29/2013 11:20:36 PM	8568
Surr: 4-Terphenyl-d14	85.0	29.7-111		%REC	1	7/29/2013 11:20:36 PM	8568
Surr: Nitrobenzene-d5	80.3	36.6-132		%REC	1	7/29/2013 11:20:36 PM	8568
Surr: Phenol-d5	71.5	28.5-128		%REC	1	7/29/2013 11:20:36 PM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** BKGD-3

**Project:** MSGP INSPECTION REPORT

**Collection Date:** 7/22/2013 1:00:00 PM

**Lab ID:** 1307A80-016

**Matrix:** SOIL

**Received Date:** 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JRR
Chloride	980	30		mg/Kg	20	7/30/2013 6:49:28 PM	8634
<b>EPA METHOD 8270C: SEMIVOLATILES</b>							Analyst: DAM
Acenaphthene	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Acenaphthylene	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Aniline	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Anthracene	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Azobenzene	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Benz(a)anthracene	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Benzo(a)pyrene	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Benzo(b)fluoranthene	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Benzo(g,h,i)perylene	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Benzo(k)fluoranthene	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Benzoic acid	ND	1.0		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Benzyl alcohol	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Bis(2-chloroethoxy)methane	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Bis(2-chloroethyl)ether	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Bis(2-chloroisopropyl)ether	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Bis(2-ethylhexyl)phthalate	ND	0.50		mg/Kg	1	7/29/2013 11:49:25 PM	8568
4-Bromophenyl phenyl ether	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Butyl benzyl phthalate	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Carbazole	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
4-Chloro-3-methylphenol	ND	0.50		mg/Kg	1	7/29/2013 11:49:25 PM	8568
4-Chloroaniline	ND	0.50		mg/Kg	1	7/29/2013 11:49:25 PM	8568
2-Chloronaphthalene	ND	0.25		mg/Kg	1	7/29/2013 11:49:25 PM	8568
2-Chlorophenol	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
4-Chlorophenyl phenyl ether	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Chrysene	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Di-n-butyl phthalate	ND	0.50		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Di-n-octyl phthalate	ND	0.40		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Dibenz(a,h)anthracene	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Dibenzofuran	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
1,2-Dichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
1,3-Dichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
1,4-Dichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
3,3'-Dichlorobenzidine	ND	0.25		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Diethyl phthalate	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Dimethyl phthalate	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
2,4-Dichlorophenol	ND	0.40		mg/Kg	1	7/29/2013 11:49:25 PM	8568
2,4-Dimethylphenol	ND	0.30		mg/Kg	1	7/29/2013 11:49:25 PM	8568
4,6-Dinitro-2-methylphenol	ND	0.50		mg/Kg	1	7/29/2013 11:49:25 PM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307A80

Date Reported: 8/6/2013

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: BKGD-3

Project: MSGP INSPECTION REPORT

Collection Date: 7/22/2013 1:00:00 PM

Lab ID: 1307A80-016

Matrix: SOIL

Received Date: 7/24/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8270C: SEMIVOLATILES</b>							Analyst: DAM
2,4-Dinitrophenol	ND	0.40		mg/Kg	1	7/29/2013 11:49:25 PM	8568
2,4-Dinitrotoluene	ND	0.50		mg/Kg	1	7/29/2013 11:49:25 PM	8568
2,6-Dinitrotoluene	ND	0.50		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Fluoranthene	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Fluorene	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Hexachlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Hexachlorobutadiene	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Hexachlorocyclopentadiene	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Hexachloroethane	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Indeno(1,2,3-cd)pyrene	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Isophorone	ND	0.50		mg/Kg	1	7/29/2013 11:49:25 PM	8568
1-Methylnaphthalene	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
2-Methylnaphthalene	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
2-Methylphenol	ND	0.50		mg/Kg	1	7/29/2013 11:49:25 PM	8568
3+4-Methylphenol	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
N-Nitrosodi-n-propylamine	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
N-Nitrosodiphenylamine	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Naphthalene	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
2-Nitroaniline	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
3-Nitroaniline	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
4-Nitroaniline	ND	0.40		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Nitrobenzene	ND	0.50		mg/Kg	1	7/29/2013 11:49:25 PM	8568
2-Nitrophenol	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
4-Nitrophenol	ND	0.25		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Pentachlorophenol	ND	0.40		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Phenanthrene	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Phenol	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Pyrene	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Pyridine	ND	0.50		mg/Kg	1	7/29/2013 11:49:25 PM	8568
1,2,4-Trichlorobenzene	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
2,4,5-Trichlorophenol	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
2,4,6-Trichlorophenol	ND	0.20		mg/Kg	1	7/29/2013 11:49:25 PM	8568
Surr: 2,4,6-Tribromophenol	46.4	36.5-113		%REC	1	7/29/2013 11:49:25 PM	8568
Surr: 2-Fluorobiphenyl	81.7	43.3-111		%REC	1	7/29/2013 11:49:25 PM	8568
Surr: 2-Fluorophenol	69.3	32.2-118		%REC	1	7/29/2013 11:49:25 PM	8568
Surr: 4-Terphenyl-d14	76.8	29.7-111		%REC	1	7/29/2013 11:49:25 PM	8568
Surr: Nitrobenzene-d5	88.5	36.6-132		%REC	1	7/29/2013 11:49:25 PM	8568
Surr: Phenol-d5	74.9	28.5-128		%REC	1	7/29/2013 11:49:25 PM	8568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1307A80

06-Aug-13

Client: Western Refining Southwest, Gallup

Project: MSGP INSPECTION REPORT

Sample ID	MB-8576		SampType:	MBLK		TestCode:	EPA Method 300.0: Anions				
Client ID:	PBS		Batch ID:	8576		RunNo:	12237				
Prep Date:	7/26/2013		Analysis Date:	7/26/2013		SeqNo:	348052		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	ND	1.5									

Sample ID	LCS-8576		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 8576		RunNo: 12237					
Prep Date:	7/26/2013		Analysis Date: 7/26/2013		SeqNo: 348053		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.6	90	110			

Sample ID	MB-8634		SampType:	MBLK		TestCode:	EPA Method 300.0: Anions				
Client ID:	PBS		Batch ID:	8634		RunNo:	12307				
Prep Date:	7/30/2013		Analysis Date:	7/30/2013		SeqNo:	350015		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	ND	1.5									

Sample ID	LCS-8634		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 8634		RunNo: 12307					
Prep Date:	7/30/2013		Analysis Date: 7/30/2013		SeqNo: 350016		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.0	90	110			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1307A80

06-Aug-13

Client: Western Refining Southwest, Gallup

Project: MSGP INSPECTION REPORT

Sample ID	mb-8568	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBS	Batch ID:	8568	RunNo:	12261					
Prep Date:	7/25/2013	Analysis Date:	7/29/2013	SeqNo:	348582	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	1.0								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.50								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3'-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.50								
2,4-Dinitrophenol	ND	0.40								
2,4-Dinitrotoluene	ND	0.50								

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1307A80

06-Aug-13

Client: Western Refining Southwest, Gallup

Project: MSGP INSPECTION REPORT

Sample ID	mb-8568		SampType: MBLK		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	PBS		Batch ID: 8568		RunNo: 12261					
Prep Date:	7/25/2013		Analysis Date: 7/29/2013		SeqNo: 348582		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.50								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.50								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.50								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.50								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2,4,6-Tribromophenol	0.96		3.330		28.9	36.5	113			S
Surr: 2-Fluorobiphenyl	1.2		1.670		74.7	43.3	111			
Surr: 2-Fluorophenol	2.0		3.330		60.0	32.2	118			
Surr: 4-Terphenyl-d14	1.1		1.670		64.7	29.7	111			
Surr: Nitrobenzene-d5	1.3		1.670		80.6	36.6	132			
Surr: Phenol-d5	2.4		3.330		71.4	28.5	128			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1307A80

06-Aug-13

Client: Western Refining Southwest, Gallup

Project: MSGP INSPECTION REPORT

Sample ID	1307a80-001ams	SampType:	MS	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	POND 6-1	Batch ID:	8568	RunNo:	12294					
Prep Date:	7/25/2013	Analysis Date:	7/30/2013	SeqNo:	349614	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.2	1.0	1.686	0	70.9	25.6	142			
4-Chloro-3-methylphenol	ND	2.5	3.363	0	51.8	63.7	100			S
2-Chlorophenol	1.7	1.0	3.363	0	51.2	22.2	126			
1,4-Dichlorobenzene	1.1	1.0	1.686	0	63.4	12.4	115			
2,4-Dinitrotoluene	ND	2.5	1.686	0	33.6	14.9	142			
N-Nitrosodi-n-propylamine	1.1	1.0	1.686	0	63.9	13.9	136			
4-Nitrophenol	ND	1.3	3.363	0	30.5	36.7	130			S
Pentachlorophenol	ND	2.0	3.363	0	39.9	15.8	113			
Phenol	1.8	1.0	3.363	0	52.5	25.1	124			
Pyrene	ND	1.0	1.686	0	42.4	35.8	124			
1,2,4-Trichlorobenzene	ND	1.0	1.686	0	58.2	30	113			
Surr: 2,4,6-Tribromophenol	1.1		3.363		32.2	36.5	113			S
Surr: 2-Fluorobiphenyl	1.1		1.686		68.0	43.3	111			
Surr: 2-Fluorophenol	1.8		3.363		53.1	32.2	118			
Surr: 4-Terphenyl-d14	0.94		1.686		55.5	29.7	111			
Surr: Nitrobenzene-d5	1.1		1.686		64.9	36.6	132			
Surr: Phenol-d5	1.9		3.363		57.9	28.5	128			

Sample ID	1307a80-001amsd	SampType:	MSD	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	POND 6-1	Batch ID:	8568	RunNo:	12294					
Prep Date:	7/25/2013	Analysis Date:	7/30/2013	SeqNo:	349615	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.1	0.99	1.658	0	63.4	25.6	142	12.8	22	
4-Chloro-3-methylphenol	ND	2.5	3.307	0	52.5	63.7	100	0	27.3	S
2-Chlorophenol	1.7	0.99	3.307	0	50.7	22.2	126	2.75	26.3	
1,4-Dichlorobenzene	ND	0.99	1.658	0	57.7	12.4	115	200	27.4	
2,4-Dinitrotoluene	ND	2.5	1.658	0	34.6	14.9	142	0	27.4	
N-Nitrosodi-n-propylamine	1.2	0.99	1.658	0	71.8	13.9	136	9.96	22.6	
4-Nitrophenol	ND	1.2	3.307	0	30.4	36.7	130	0	20	S
Pentachlorophenol	ND	2.0	3.307	0	38.9	15.8	113	0	27.1	
Phenol	1.9	0.99	3.307	0	56.9	25.1	124	6.48	32.2	
Pyrene	ND	0.99	1.658	0	36.6	35.8	124	0	29.5	
1,2,4-Trichlorobenzene	ND	0.99	1.658	0	55.6	30	113	0	27.8	
Surr: 2,4,6-Tribromophenol	1.1		3.307		32.2	36.5	113	0	0	S
Surr: 2-Fluorobiphenyl	0.90		1.658		54.5	43.3	111	0	0	
Surr: 2-Fluorophenol	2.0		3.307		61.8	32.2	118	0	0	
Surr: 4-Terphenyl-d14	0.86		1.658		52.0	29.7	111	0	0	
Surr: Nitrobenzene-d5	0.98		1.658		59.4	36.6	132	0	0	
Surr: Phenol-d5	2.1		3.307		63.1	28.5	128	0	0	

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1307A80

06-Aug-13

Client: Western Refining Southwest, Gallup

Project: MSGP INSPECTION REPORT

Sample ID	lcs-8568		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS		Batch ID: 8568		RunNo: 12301					
Prep Date:	7/25/2013		Analysis Date: 7/31/2013		SeqNo: 349866		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.7	0.20	1.670	0	99.0	45.8	95.8			S
4-Chloro-3-methylphenol	3.0	0.50	3.330	0	91.3	49.9	103			
2-Chlorophenol	2.9	0.20	3.330	0	88.3	43.4	94			
1,4-Dichlorobenzene	1.3	0.20	1.670	0	78.2	37.3	95.4			
2,4-Dinitrotoluene	1.6	0.50	1.670	0	94.7	51.6	113			
N-Nitrosodi-n-propylamine	1.7	0.20	1.670	0	103	43.4	105			
4-Nitrophenol	2.0	0.25	3.330	0	59.0	45.4	113			
Pentachlorophenol	2.3	0.40	3.330	0	70.2	40	90.2			
Phenol	1.8	0.20	3.330	0	54.2	44.4	99.8			
Pyrene	1.9	0.20	1.670	0	115	48.1	93.1			S
1,2,4-Trichlorobenzene	1.4	0.20	1.670	0	84.1	41.6	103			
Surr: 2,4,6-Tribromophenol	3.4		3.330		102	36.5	113			
Surr: 2-Fluorobiphenyl	1.6		1.670		94.2	43.3	111			
Surr: 2-Fluorophenol	2.7		3.330		81.6	32.2	118			
Surr: 4-Terphenyl-d14	1.9		1.670		115	29.7	111			S
Surr: Nitrobenzene-d5	1.5		1.670		90.1	36.6	132			
Surr: Phenol-d5	1.9		3.330		57.4	28.5	128			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit



# Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1307A80

RcptNo: 1

Received by/date:

AG 07/24/13

Logged By: Anne Thorne

7/24/2013 8:00:00 AM



Completed By: Anne Thorne

7/24/2013



Reviewed By:

IO

07/24/13

## Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? FedEx

## Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH:

(&lt;2 or &gt;12 unless noted)

Adjusted?

Checked by:

## Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

## 18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.5	Good	Yes			





## Chavez, Carl J, EMNRD

---

**From:** Riege, Ed <Ed.Riege@wnr.com>  
**Sent:** Thursday, November 14, 2013 5:09 PM  
**To:** Kieling, John, NMENV  
**Cc:** Cobrain, Dave, NMENV; Dhawan, Neelam, NMENV; De Saillan, Charles, NMENV; Chavez, Carl J, EMNRD; VonGonten, Glenn, EMNRD; king.laurie@epa.gov; VanHorn, Kristen, NMENV; McClain, Jr, Billy; Allen, Ann; Hains, Allen  
**Subject:** Response To Request For SWMU Assessment Report - Hydrocarbon Seep  
**Attachments:** Letter and Table 1.pdf; WestRef-B179 Fig 1 Location Map of SB-Temp Well\_Hand Auger\_Excavation.pdf

Mr. Kieling,

Attached is the response to the request for SWMU Assessment Report - Hydrocarbon Seep. The signed original is in the US mail.

Thanks,

Ed Riege MPH  
Environmental Manager

Western Refining  
Gallup Refinery  
Route 3 Box 7  
Gallup, NM 87301  
(505) 722-0217  
[ed.riege@wnr.com](mailto:ed.riege@wnr.com)

November 14, 2013

***Via Email and Certified Mail 7010 1670 0001 3141 1245, Return Receipt Requested***

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

**RE: RESPONSE TO REQUEST FOR SWMU ASSESSMENT REPORT - HYDROCARBON  
SEEP  
WESTERN REFINING COMPANY, SOUTHWEST, INC., GALLUP REFINERY  
EPA ID # NMD000333211  
AP-111**

Dear Mr. Kieling:

Western Refining Southwest, Gallup Refinery ("Western") submits this letter in response to the New Mexico Environment Department, Hazardous Waste Bureau's, (the "Bureau") letters dated July 31, 2013 and August 14, 2013 that requested a Solid Waste Management Unit (SWMU) Assessment Report under the August 2000 Hazardous Waste Facility Permit (the "Permit") Section IV.B.2.b for the hydrocarbon seep that was discovered to the west of crude tank T-102 and northwest of the marketing tanks (T1-T8). In addition, this letter addresses the Bureau's letter of November 8, 2013 addressed to Ms. Ann Allen. The identification of the hydrocarbon seep was reported on Form C-141 on July 11, 2013. Since the initial discovery, Western Refining Southwest, Gallup Refinery ("Western") has implemented emergency response measures as previously reported in Hydrocarbon Release Notification Reports dated August 20, 2013 and October 18, 2013.

Subsequent to the initial release report and the October 18, 2013 update report, Western has continued efforts to identify the source of the hydrocarbon seep, including installation of additional temporary monitoring wells (Figure 1), collection of groundwater samples, and excavation of portions of the wastewater collection pipeline near the bundle cleaning pad. The results of recent chemical analyses of the groundwater samples that have been received to-date are enclosed. Also, recovery operations continue at the temporary sump locations with the estimated recovery volumes provided in enclosed Table 1.

As reported earlier, the camera survey indicated a potential hole in the wastewater collection pipeline approximately 20 feet south of a surface drain located just west of the bundle cleaning pad (Figure 1). The wastewater pipeline was excavated and the source of the release was confirmed to be the wastewater pipeline (see enclosed photos of excavated section of steel pipeline). The wastewater collection pipeline upstream of the corroded portion of the pipeline was plugged off at the sewer box located west of the I/E shop on October 28, 2013. Additional excavation of the wastewater pipeline is scheduled to be conducted over the next several weeks to gather more information on the extent of the corroded pipe.

As the source of the release is the wastewater collection system, which is already included as SWMU No. 12 – Contact Wastewater Collection System, a SWMU assessment report is not required under Permit section IV.B.2.b., as this provision only applies to “new” SWMUs or AOCs. SWMU No. 12 is also listed in the new RCRA permit Table E-2 as requiring an Investigation Work Plan. (Note that Western is considering an appeal of the newly issued RCRA permit.)

In response to your letter of November 8, 2013, which raises several questions in regards to the sampling effort Western offers the following clarifications.

- As noted in your first sentence on this topic, the soil samples were collected only for waste characterization purposes. Clearly it is not possible to obtain a sample of soils for waste disposal purposes that have been excavated or generated during drilling operations that are “undisturbed samples.” The purpose of these samples is only to characterize the concentrations of potential contaminants in the soils being disposed, not to characterize concentrations of potential contaminants that may be present in in-situ soils. Also, waste analysis using TCLP procedures is a common practice for waste characterization.
- The sampling conducted to-date has been focused on supporting emergency response efforts to; (1) identify the source of the hydrocarbons observed at the seep location and (2) ensure that appropriate emergency measures are implemented to control the seep discharge and any significant migration of potential contaminants in the shallow groundwater. While the information being collected may facilitate preparation of a site investigation report, the sampling effort is not intended to supplant a RCRA facility investigation.

Please note that Western continues to disagree with the Bureau on the other parts of the November 8<sup>th</sup> letter. As always, Western reserves all applicable rights and defenses relevant to this matter.

If there are any questions, then please contact me at 505-722-0202.

Sincerely,



Mr. William Carl McClain, Jr.  
Refinery Manager  
Western Refining Southwest, Inc. – Gallup Refinery

cc     D. Cobrain NMED HWB without enclosure  
       N. Dhawan, NMED HWB without enclosure  
       C. de Saillan, NMED HWB without enclosure  
       Carl Chavez, OCD  
       G. von Gonten, OCD  
       L. King, EPA Region 6  
       A. Allen, Western El Paso  
       Ed Riege, Western Gallup  
       Allen Hains, Western El Paso

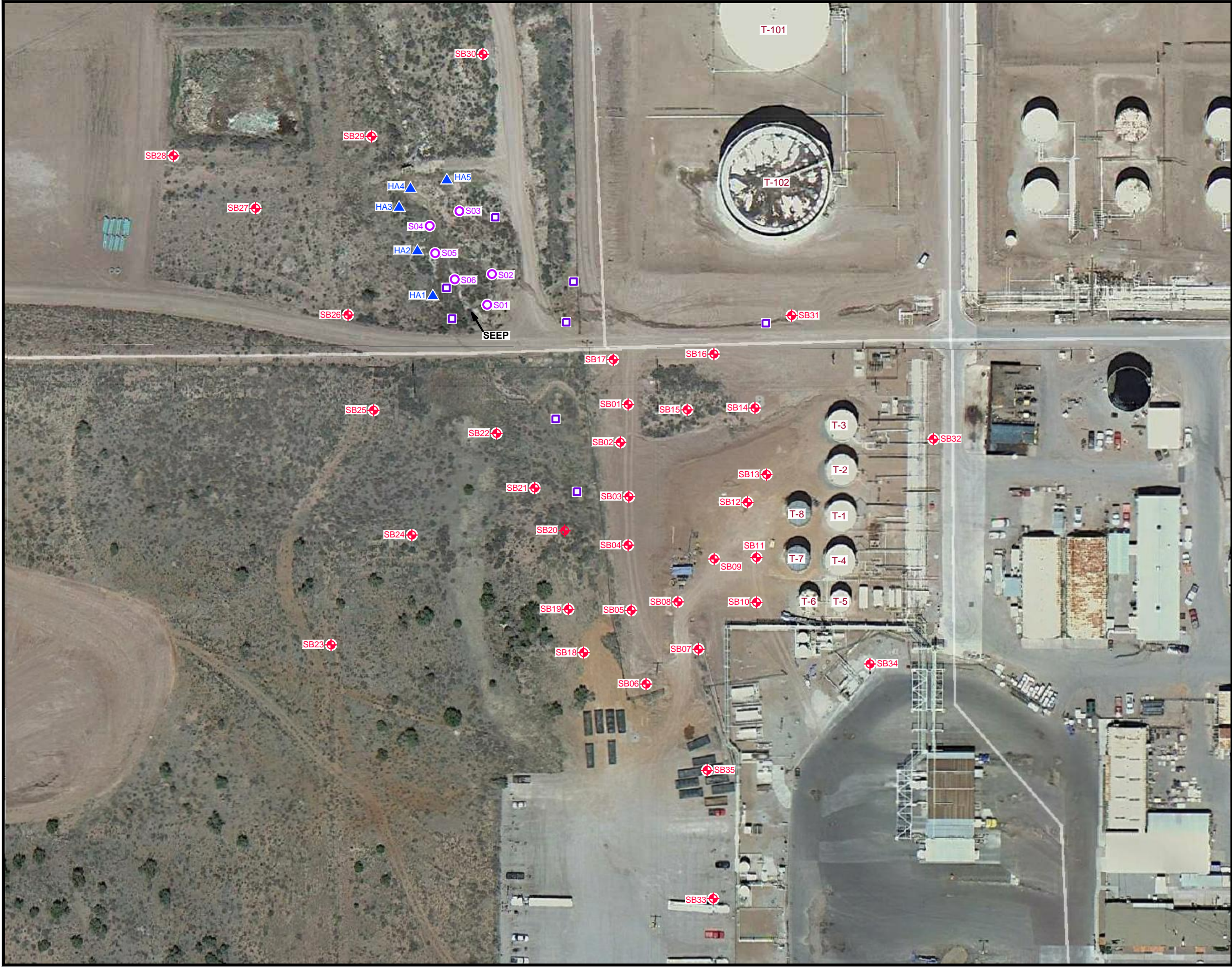
Table 1  
Temporary Sump Recovery Volumes  
September 2013 Hydrocarbon Release  
Western Refining Southwest, Inc., Gallup Refinery

DATE	Hydrocarbon Recovered (gallons)	Water Recovered (gallons)	Total Fluids Recovered (gallons)
6/26/2013 - 8/13/2013	?	?	27,000
9/3/2013 <sup>1</sup>	682	3,818	4,500
9/3/2013 <sup>1</sup>	367	4,133	4,500
9/4/2013	62	3,938	4,000
9/6/2013	62	3,938	4,000
9/9/2013	30	4,470	4,500
9/11/2013	30	4,470	4,500
9/13/2013	62	3,938	4,000
9/16/2013	135	5,140	5,275
9/18/2013	125	4,111	4,236
9/24/2013	58	4742	4800
9/26/2013	16	4220	4236
10/2/2013	29	4918	4947
10/8/2013	30	4569	4599
10/18/2013	109	5059	5168
10/28/2013	199	5379	5578
10/29/2013	63	4,049	4,112
11/12/2013	205	5,275	5,480
total <sup>2</sup>	2,264	76,167	105,431

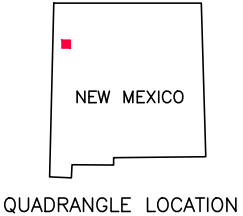
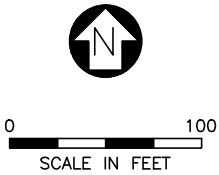
1 - two loads were removed on this date

2 - separate totals for hydrocarbon and water not available for full time period





Aerial Map Source: Google Map, 05/03/2012.




- LEGEND**
- SB01 SOIL BORING / TEMPORARY WELL LOCATION
  - HA1 HAND AUGER LOCATION
  - EXCAVATION LOCATION
  - S01 TEMPORARY SUMP



PROJ. NO.: Western Refining | DATE: 11/12/13 | FILE: WestRef-B179

FIGURE 1  
LOCATION MAP OF  
SOIL BORING / TEMPORARY WELL,  
HAND AUGER AND EXCAVATION



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



October 18, 2013

***Via Email and Certified Mail 7011 2970 0003 9281 8428, Return Receipt Requested***

Mr. Carl Chavez  
New Mexico Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

**RE: HYDROCARBON RELEASE NOTIFICATION REPORT UPDATE  
WESTERN REFINING COMPANY, SOUTHWEST, INC., GALLUP REFINERY  
EPA ID # NMD000333211  
AP-111**

Dear Mr. Chavez:

Western Refining Southwest, Gallup Refinery ("Western") submits an update to our initial Hydrocarbon Release Notification Report (dated August 20, 2013). The following spill response actions have been taken to address a discovery of hydrocarbons found on the land surface to the west of crude tank T-102 and northwest of the marketing tanks (T1-T8), which was reported in Form C-141 on July 11, 2013. We are providing a copy of this report to the New Mexico Environment Department, Hazardous Waste Bureau (the "Bureau"), in satisfaction of the Bureau's requests in letters dated July 31, 2013 and August 14, 2013 for a written notification report describing all investigation and clean-up actions.

Actions Completed To-Date

As reported in the first Hydrocarbon Release Notification Report, a series of 14 excavations were completed in the area of the seep to the west Tank T-102. Six of the excavations were completed as temporary recovery sumps. The groundwater and any hydrocarbons that enter the sumps are removed with a vacuum truck and placed into the wastewater treatment system up-steam of the API Separator. The volume of total liquids (groundwater and hydrocarbons) recovered from June 26, 2013 through October 8, 2013 is estimated to be 85,000 gallons (Table 1). The initial material recovered was estimated to be 50% water and 50% hydrocarbon; however, the percentage of hydrocarbon reduced significantly over the first couple of weeks.

Efforts to identify the source of the hydrocarbons completed through August 20, 2013 were reported in the initial Hydrocarbon Release Notification Report. As discussed in the initial Hydrocarbon Release Notification Report, Western had planned to conduct additional leak detection surveys using methods such as *Tracer Tight*® or *HeliTek*®, but due to safety concerns these techniques could not be used within the subject area of the refinery. Since the August 20<sup>th</sup> report, additional actions as described below have been conducted to identify the source(s) of the hydrocarbons:

1. Additional dye tracer tests were conducted on the process sewer system;

2. Physical inspections of the process sewer system, including a completion of a camera survey identified a hole in the sewer line on the west side of the bundle cleaning pad;
3. Additional site inspections of aboveground equipment were conducted to identify any evidence of possible sources of the hydrocarbon;
4. Elevations of the ground level and top of casing were measured at the temporary well completions and sump locations; and
5. A potentiometric map and cross-sections of the shallow subsurface in the area of the temporary wells were prepared.

Two additional dye tests were conducted in the process sewer system. A yellow/green dye was introduced into the sewer at the transmix unloading area (a short distance northwest of the main product loading racks) on September 23, 2013 and a red dye was introduced at the lab sinks on September 24, 2013. A subsequent fluid level gauging event was conducted at the temporary monitoring wells on September 26, 2013 (Table 2). The red dye has been identified in five of the temporary wells (SB01, SB02, SB16, SB17, and SB22), all of which are located just south of the road that runs east-west along the north side of the marketing tanks. The green/yellow dye appears to be present in nine wells (SB04, SB05, SB06, SB08, SB10, SB11, SB19, SB20, and SB21), which are all located toward the southern portion of the area that has been investigated to-date. Although the dye tests are not conclusive, the separate patterns of the two dyes suggest the possibility of two separate release areas from the sewer lines. The red dye appears to have exited the sewer line from a hole identified near the bundle cleaning pad (see discussion below). The source of the yellow/green dye is not currently known, but appears to be south of the hole recently identified in the sewer line.

A camera survey was conducted on multiple segments of the sewer line in the western portion of the refinery on August 27 and 28. Based on this visual inspection, a hole in the sewer line was identified approximately 20 feet south of the sewer box on the west side of the bundle cleaning pad. The location of the identified release point in the sewer line is shown on the enclosed potentiometric surface map (Figure 1).

On August 19 an operator inspecting aboveground equipment to identify any evidence of possible sources of the hydrocarbon seep, observed hydrocarbon on the land surface in the secondary containment east of tank T-3. The location of the leak, which is just west of the above ground pipeline rack that runs north to south along the east side of the marketing tank farm, is shown on Figure 1. Once the release was discovered, a small earthen containment berm was built approximately 10 ft to the west of the release. A sandpiper pump was then set up to transfer the hydrocarbon (approximately 1.5 barrels) to the process sewer. Operations were then able to isolate the underground pipeline that was leaking. The transmix/slop 6 to 8 inch pipeline is only used during the unloading of transmix trucks at the truck rack, thus it would only have been an intermittent source. Trucks are unloaded at the rack and this line transports the transmix/slop to T-231. The line was taken out of service, cleaned and blanked off. The line is being replaced with an aboveground pipeline.

The impacted soil was removed by Envirotech using hand shovels and placed into a roll-off box. Approximately 15 cubic yards were removed. Soil confirmation samples were collected from the bottom of the excavation and waste characterization samples were also collected during the



week of October 7, 2013. The soils remain on-site pending receipt of the waste characterization analyses.

As reported in our earlier August 20<sup>th</sup> report, waste characterization samples were collected from the soils generated during excavation for the sumps and the drill cuttings from the temporary well installations. The analyses demonstrated the soils were not characteristically hazardous, but did contain petroleum hydrocarbons. The soils from the initial excavations for the sumps and drill cuttings have been disposed off-site as hydrocarbon impacted soils.

Using the new survey data for the temporary monitoring wells, a potentiometric surface map (Figure 1) and cross-sections (Figures 3 and 4) were prepared for the subject investigation area. The potentiometric surface mirrors the land surface topography and slopes to the northwest. Cross-section A-A' runs north-south and extends from the southernmost temporary well SB06 to hand auger location HA4, which is located near the discharge area to the northwest. Two west to east cross-sections B-B' and C-C' are included on Figure 4. All temporary wells appear to be completed in the same hydrogeologic unit, which varies from silty, clayey sand to sandy clay, with the exception of SB10. Temporary well SB10 is completed in a perched zone consisting of silty sand, which may be part of the fill material that is found to overlie native soils over much of the area. A saturated interval of fill composed of clay, sand, and gravel appears at a similar stratigraphic position in SB07 (boring logs provided in August 20<sup>th</sup> report); however, SB07 was completed in the deeper clayey sand interval that does appear to be in direct hydraulic communication with the other temporary wells. The perched zone appears to be of limited aerial extent and does not affect contaminant transport to the northwest as it terminates well short of the currently defined hydrocarbon plume.

In summary, two potential sources have been identified that could have resulted in the discharge of petroleum hydrocarbons at the land surface, as discovered on June 26, 2013. The hole in the sewer line on the west side of the bundle cleaning pad and the leak in the transmix/slop oil transfer line are within approximately 70 feet of each other and are hydraulically up-gradient of the seep area. Dye tests confirm the potential for materials released from the hole in the sewer line near the bundle cleaning pad to migrate to the area of the seep. Separate dye tests suggest the potential for another release point further south.

#### Future Actions

Western will continue efforts to further characterize potential source areas, to recover phase-separated hydrocarbons (PSH) and to delineate the lateral extent of impacts to groundwater. These efforts will be accomplished by the following tasks.

- Sewer line repairs are currently underway. This will provide an opportunity to better examine the nature of the release identified west of the bundle cleaning pad. As possible, some overexcavation during the sewer line repair may be conducted to remove impacted soils. Upon completion of the repairs, potentially additional dye tracer tests will be conducted.
- A total of 26 temporary monitoring wells (22 soil borings and 4 hand-auger locations) were previously completed over a relatively small area west of the marketing tanks. A number of the temporary wells are in locations making them subject to damage due to normal refinery operations in this area. The temporary wells were reviewed based on thickness of higher transmissive sediments (e.g., sand vs. silty clay), measured thickness of phase-separated hydrocarbons, and position of surrounding wells to select wells to be plugged vs. recompleted as permanent monitoring wells. Ten of the 22 soil

boring temporary wells will be plugged and two of the four hand-auger borings will be plugged. The remaining 12 temporary wells will be recompleted as permanent monitoring wells and two of the hand-auger locations will be completed as permanent monitoring wells.

Approximately 12 additional temporary wells are planned in an effort to further define the lateral extent of groundwater impacts and to assess other potential sources to the southeast of the marketing tanks.

- Recovery operations at the six sumps will continue to remove any PSH and impacted groundwater that accumulates in the sumps.

If there are any questions regarding the actions taken to-date or planned further actions, then please contact me at 505-722-0217. Please note Western makes no admissions and reserves all applicable rights and defenses relevant to this matter.

Sincerely,



Ed Riege  
Environmental Manager  
Western Refining Southwest, Inc. – Gallup Refinery

Enclosures

cc G. von Gonten, OCD without enclosure  
J. Kieling, NMED HWB with enclosure  
N. Dhawan, NMED HWB without enclosure  
T. Blaine, NMED without enclosure  
D. Cobrain, NMED HWB without enclosure  
K. Van Horn, NMED HWB with enclosure  
A. Allen, Western El Paso

Table 1  
Temporary Sump Recovery Volumes  
September 2013 Hydrocarbon Release  
Western Refining Southwest, Inc., Gallup Refinery

DATE	Hydrocarbon Recovered (gallons)	Water Recovered (gallons)	Total Fluids Recovered (gallons)
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9/11/2013	30	4,470	4,500
9/13/2013	62	3,938	4,000
9/16/2013	135	5,140	5,275
9/18/2013	125	4,111	4,236
9/24/2013	58	4742	4800
9/26/2013	16	4220	4236
10/2/2013	29	4918	4947
10/8/2013	30	4569	4599
total <sup>2</sup>	1,688	56,405	85,093

1 - two loads were removed on this date

2 - separate totals for hydrocarbon and water not available for full time period

Table 2  
Fluid Level Measurements  
Western Refining Southwest, Inc., Gallup Refinery

Loc.	Date	Top of Casing (ft msl)	Specific Gravity	Depth to HC (ft btoc)	Depth to GW (ft btoc)	Apparent Hydrocarbon Thickness (feet)	Corrected Groundwater Elevation (feet MSL)	Comments
HA1	07/11/13	215.38	0.7970	ND	6.60	0.00	208.78	
	07/12/13	215.38	0.7970	ND	6.60	0.00	208.78	
	07/17/13	215.38	0.7970	ND	6.80	0.00	208.58	
	08/14/13	215.38	0.7970	ND	9.19	0.00	206.19	
	09/25/13	215.38	0.7970	5.44	6.36	0.92	209.75	
HA2	07/12/13	212.86	0.7970	ND	5.51	0.00	207.35	
	07/17/13	212.86	0.7970	ND	5.82	0.00	207.04	
	08/14/13	212.86	0.7970	ND	5.31	0.00	207.55	
	09/25/13	212.86	0.7970	ND	4.80	0.00	208.06	Clear - slight odor detected
HA3	07/12/13	210.84	0.7970	ND	6.40	0.00	204.44	
	07/17/13	210.84	0.7970	ND	6.68	0.00	204.16	
	08/14/13	210.84	0.7970	ND	4.28	0.00	206.56	
	09/25/13	210.84	0.7970	ND	4.01	0.00	206.83	Clear - slight odor detected
HA4	07/12/13	211.26	0.7970	ND	6.41	0.00	204.85	
	07/17/13	211.26	0.7970	ND	6.78	0.00	204.48	
	08/14/13	211.26	0.7970	ND	4.94	0.00	206.32	
	09/26/13	211.26	0.7970	ND	4.50	0.00	206.76	Clear - slight odor detected
HA5	07/12/13	NM	0.7970	ND	5.50	0.00	NA	
	07/17/13	NM	0.7970	NM	NM	NA	NA	well destroyed
SB01	07/17/13	229.84	0.7970	11.50	16.74	5.24	217.28	
	07/25/13	229.84	0.7970	10.85	16.55	5.70	217.83	
	08/14/13	229.84	0.7970	9.88	9.91	0.03	219.95	Has reddish tint - trace of dye?
	09/26/13	229.84	0.7970	9.51	15.19	5.68	219.18	Red - dye - odor
SB02	07/17/13	227.85	0.7970	10.26	10.58	0.32	217.53	
	07/25/13	227.85	0.7970	9.68	9.97	0.29	218.11	
	08/14/13	227.85	0.7970	8.74	9.12	0.38	219.03	
	09/26/13	227.85	0.7970	8.25	8.45	0.20	219.56	red/orange tint - traces of dye
SB03	07/17/13	231.43	0.7970	ND	11.40	0.00	220.03	
	07/25/13	231.43	0.7970	ND	12.84	0.00	218.59	
	08/14/13	231.43	0.7970	ND	12.01	0.00	219.42	
	09/26/13	231.43	0.7970	ND	11.49	0.00	219.94	Clear - slight odor
SB04	07/17/13	232.24	0.7970	ND	13.62	0.00	218.62	
	07/25/13	232.24	0.7970	ND	12.98	0.00	219.26	
	08/14/13	232.24	0.7970	ND	12.19	0.00	220.05	
	09/26/13	232.24	0.7970	11.72	11.79	0.07	220.51	Dark w/traces of yw-grn dye
SB05	07/17/13	234.52	0.7970	14.92	15.95	1.03	219.39	
	07/25/13	234.52	0.7970	14.48	15.40	0.92	219.85	
	08/14/13	234.52	0.7970	13.66	13.75	0.09	220.84	
	09/26/13	234.52	0.7970	13.2	14.25	1.05	221.11	Dark w/traces of yw-grn dye
SB06	07/22/13	235.65	0.7970	14.10	14.11	0.01	221.55	
	07/25/13	235.65	0.7970	14	14.01	0.01	221.65	
	08/14/13	235.65	0.7970	ND	13.07	0.00	222.58	
	09/26/13	235.65	0.7970	12.19	12.4	0.21	223.42	Dark w/traces of yw-grn dye

Table 2  
Fluid Level Measurements  
Western Refining Southwest, Inc., Gallup Refinery

Loc.	Date	Top of Casing (ft msl)	Specific Gravity	Depth to HC (ft btoc)	Depth to GW (ft btoc)	Apparent Hydrocarbon Thickness (feet)	Corrected Groundwater Elevation (feet MSL)	Comments
SB07	07/22/13	239.73	0.7970	14.84	14.85	0.01	224.89	
	07/25/13	239.73	0.7970	14.78	14.79	0.01	224.95	
	08/14/13	239.73	0.7970	ND	13.49	0.00	226.24	
	09/26/13	239.73	0.7970	ND	12.64	0.00	227.09	
SB08	07/22/13	241.29	0.7970	17.88	19.74	1.86	223.03	
	07/25/13	241.29	0.7970	17.80	19.68	1.88	223.11	
	08/14/13	241.29	0.7970	16.65	18.80	2.15	224.20	
	09/26/13	241.29	0.7970	15.96	18.25	2.29	224.87	Dark w/traces of yw-grn dye
SB09	07/22/13	240.69	0.7970	16.64	16.65	0.01	224.05	
	07/25/13	240.69	0.7970	ND	16.65	0.00	224.04	
	08/14/13	240.69	0.7970	ND	14.83	0.00	225.86	
	09/26/13	240.69	0.7970	NM	NM	NA	NA	Bermed area full of water
SB10	07/22/13	241.30	0.7970	ND	8.29	0.00	233.01	
	07/25/13	241.30	0.7970	ND	7.74	0.00	233.56	
	08/14/13	241.30	0.7970	7.57	9.14	1.57	233.41	
	09/26/13	241.30	0.7970	7.35	7.85	0.50	233.85	Dark w/traces of yw-grn dye
SB11	07/22/13	242.26	0.7970	ND	ND	0.00	NA	
	07/25/13	242.26	0.7970	NM	NM	NA	NA	
	08/14/13	242.26	0.7970	14.06	14.08	0.02	228.20	
	09/26/13	242.26	0.7970	13.23	13.45	0.22	228.99	Dark w/traces of yw-grn dye
SB12	07/22/13	241.25	0.7970	14.13	14.14	0.01	227.12	
	07/25/13	241.25	0.7970	ND	14.18	0.00	227.07	
	08/14/13	241.25	0.7970	ND	14.72	0.00	226.53	
	09/26/13	241.25	0.7970	ND	13.15	0.00	228.10	
SB13	07/22/13	241.85	0.7970	ND	15.21	0.00	226.64	
	07/25/13	241.85	0.7970	ND	15.03	0.00	226.82	
	08/14/13	241.85	0.7970	ND	14.75	0.00	227.10	
	09/26/13	241.85	0.7970	ND	13.65	0.00	228.20	
SB14	07/25/13	240.79	0.7970	ND	16.09	0.00	224.70	
	08/14/13	240.79	0.7970	ND	15.70	0.00	225.09	
	09/26/13	240.79	0.7970	ND	15.25	0.00	225.54	
SB15	07/25/13	239.04	0.7970	ND	19.46	0.00	219.58	
	08/14/13	239.04	0.7970	ND	18.54	0.00	220.50	
	09/26/13	239.04	0.7970	ND	17.83	0.00	221.21	
SB16	07/25/13	234.64	0.7970	11.04	14.20	3.16	222.96	
	08/14/13	234.64	0.7970	10.76	11.36	0.60	223.76	Has reddish tint - trace of dye?
	09/26/13	234.64	0.7970	10.34	10.69	0.35	224.23	orange w/red tint - traces of dye
SB17	07/25/13	229.88	0.7970	12.00	12.13	0.13	217.85	
	08/14/13	229.88	0.7970	11.09	11.25	0.16	218.76	
	09/26/13	229.88	0.7970	9.79	13.02	3.23	219.43	orange w/red tint - traces of dye



Table 2  
Fluid Level Measurements  
Western Refining Southwest, Inc., Gallup Refinery

Loc.	Date	Top of Casing (ft msl)	Specific Gravity	Depth to HC (ft btoc)	Depth to GW (ft btoc)	Apparent Hydrocarbon Thickness (feet)	Corrected Groundwater Elevation (feet MSL)	Comments
SB18	07/25/13	238.53	0.7970	ND	18.58	0.00	219.95	
	08/14/13	238.53	0.7970	ND	17.54	0.00	220.99	
	09/26/13	238.53	0.7970	ND	14.6	0.00	223.93	
SB19	07/25/13	237.74	0.7970	ND	19.45	0.00	218.29	
	08/14/13	237.74	0.7970	18.30	18.80	0.50	219.34	
	09/26/13	237.74	0.7970	17.3	21.3	4.00	219.63	Dark w/traces of yw-grn dye
SB20	07/25/13	232.05	0.7970	13.62	16.24	2.62	217.90	
	08/14/13	232.05	0.7970	12.88	16.3	3.42	218.48	
	09/26/13	232.05	0.7970	12.37	15.4	3.03	219.06	Dark w/traces of yw-grn dye
SB21	07/25/13	227.33	0.7970	9.93	12.15	2.22	216.95	
	08/14/13	227.33	0.7970	9.20	9.98	0.78	217.97	
	09/26/13	227.33	0.7970	8.49	9.57	1.08	218.62	Dark w/traces of yw-grn dye
SB22	07/25/13	223.96	0.7970	7.89	10.99	3.10	215.44	
	08/14/13	223.96	0.7970	6.77	7.91	1.14	216.96	
	09/26/13	223.96	0.7970	6.35	9.45	3.10	216.98	red/orange tint - traces of dye
S-1	08/14/13	214.41	0.7970	3.76	3.89	0.13	210.62	
	9/25/2013	214.41	0.7970	2.97	4	1.03	211.23	
S-2	08/14/13	215.55	0.7970	5.90	6.01	0.11	209.63	
	9/25/2013	215.55	0.7970	5.28	5.66	0.38	210.19	
S-3	08/14/13	213.08	0.7970	5.02	5.19	0.17	208.03	
	9/25/2013	213.08	0.7970	4.44	4.69	0.25	208.59	
S-4	08/14/13	211.42	0.7970	3.70	ND	3.70	NA	
	9/25/2013	211.42	0.7970	3.04	3.11	0.07	208.37	
S-5	08/14/13	213.19	0.7970	3.71	3.96	0.25	209.43	
	9/25/2013	213.19	0.7970	3.02	3.48	0.46	210.08	
S-6	08/14/13	214.28	0.7970	3.96	4.37	0.41	210.24	
	9/25/2013	214.28	0.7970	3.3	3.85	0.55	210.87	

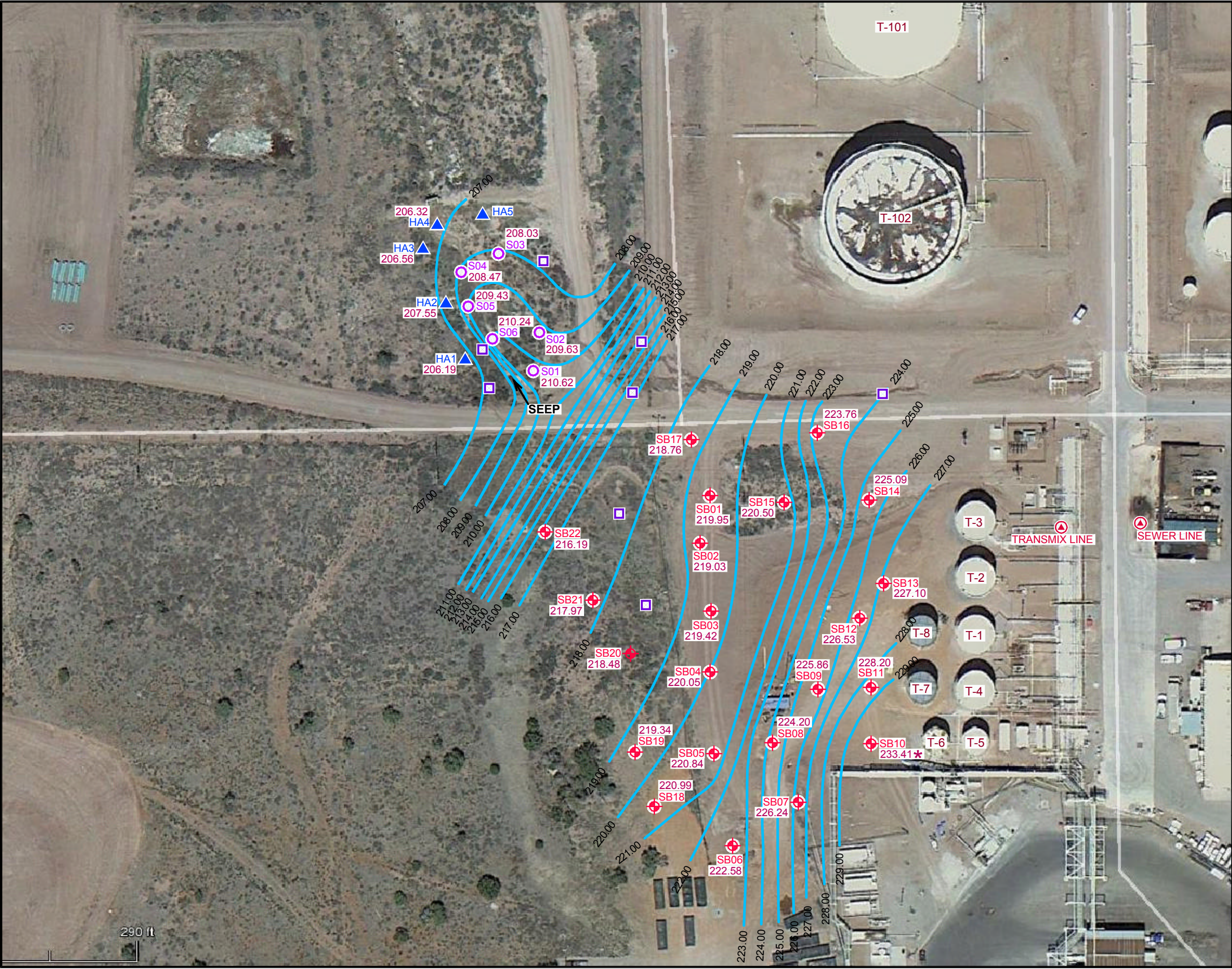
ND - no product detected

NM - not measured

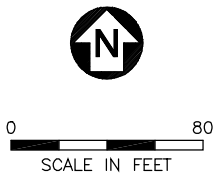
NA - not available

Specific gravity calculated using an API Gravity of 45.7.





Aerial Map Source: Google Map, 05/03/2012.



LEGEND

- SB01 SOIL BORING / TEMPORARY WELL LOCATION
- HA1 HAND AUGER LOCATION
- EXCAVATION LOCATION
- S01 TEMPORARY SUMP
- 219.00 POTENTIOMETRIC CONTOUR (FT)
- 219.95 GROUNDWATER ELEVATION (FT) MEASURED ON AUGUST 14, 2013
- DATA POINT NOT USED FOR CONTOURS
- RELEASE POINT

NOTE:  
ELEVATIONS BASED ON PLANT DATUM,  
WHICH IS 6,707.54 FT ABOVE MEAN SEA LEVEL



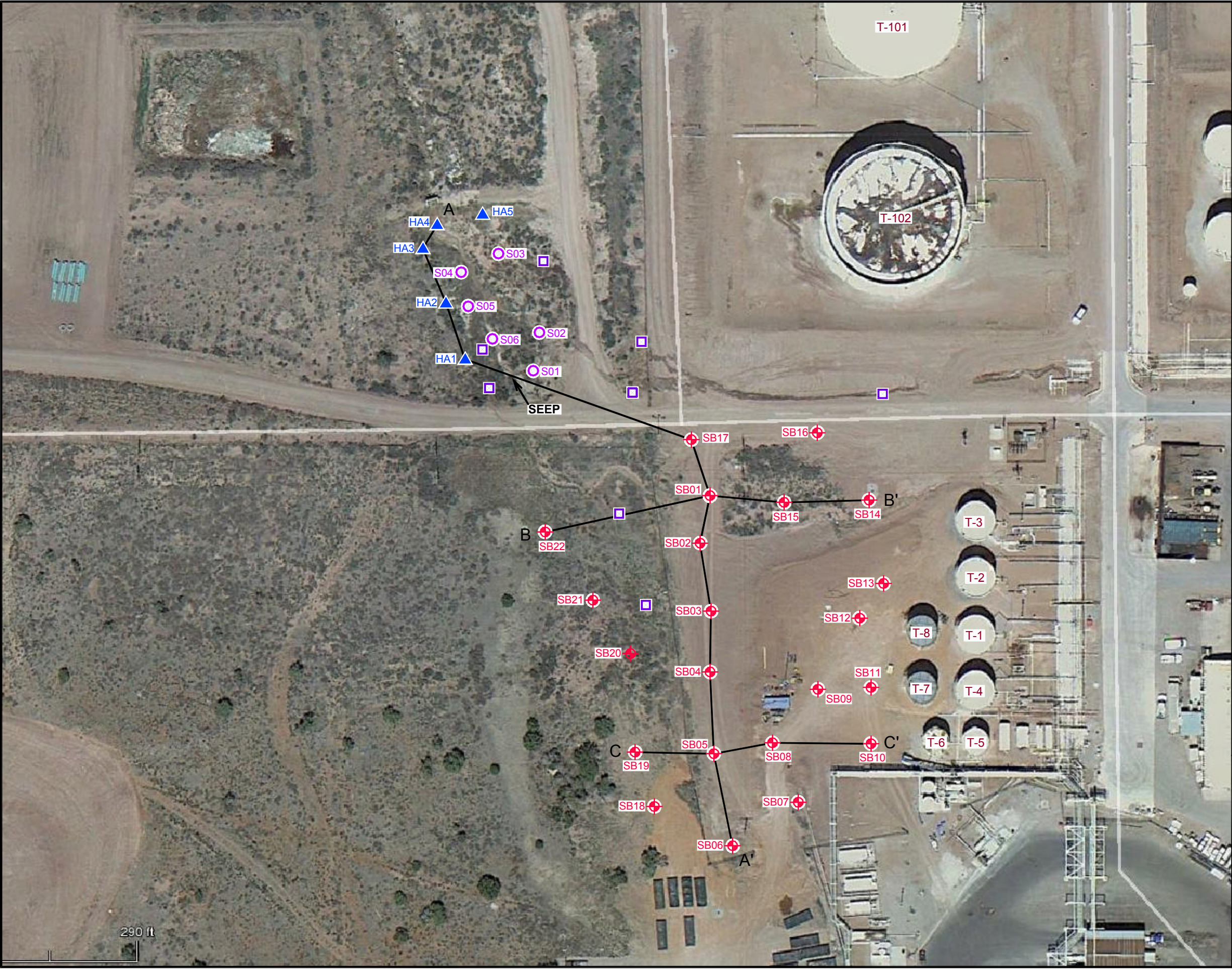
PROJ. NO.: Western Refining | DATE: 09/16/13 | FILE: WestRef-B174

FIGURE 1  
AREA WIDE POTENTIOMETRIC MAP  
AUGUST 2013

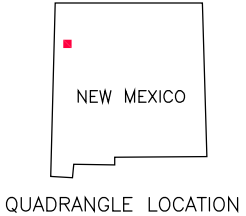
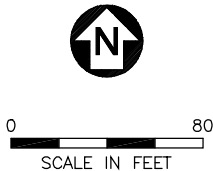


Cielo Center  
1250 S. Capital of Texas Highway  
Building 3, Suite 200  
Austin, Texas 78746  
TBPE No. 1298





Aerial Map Source: Google Map, 05/03/2012.



- LEGEND**
- SB01 SOIL BORING / TEMPORARY WELL LOCATION
  - HA1 HAND AUGER LOCATION
  - EXCAVATION LOCATION
  - S01 TEMPORARY SUMP
  - A — A' LINE OF CROSS-SECTION



PROJ. NO.: Western Refining | DATE: 10/09/13 | FILE: WestRef-B175

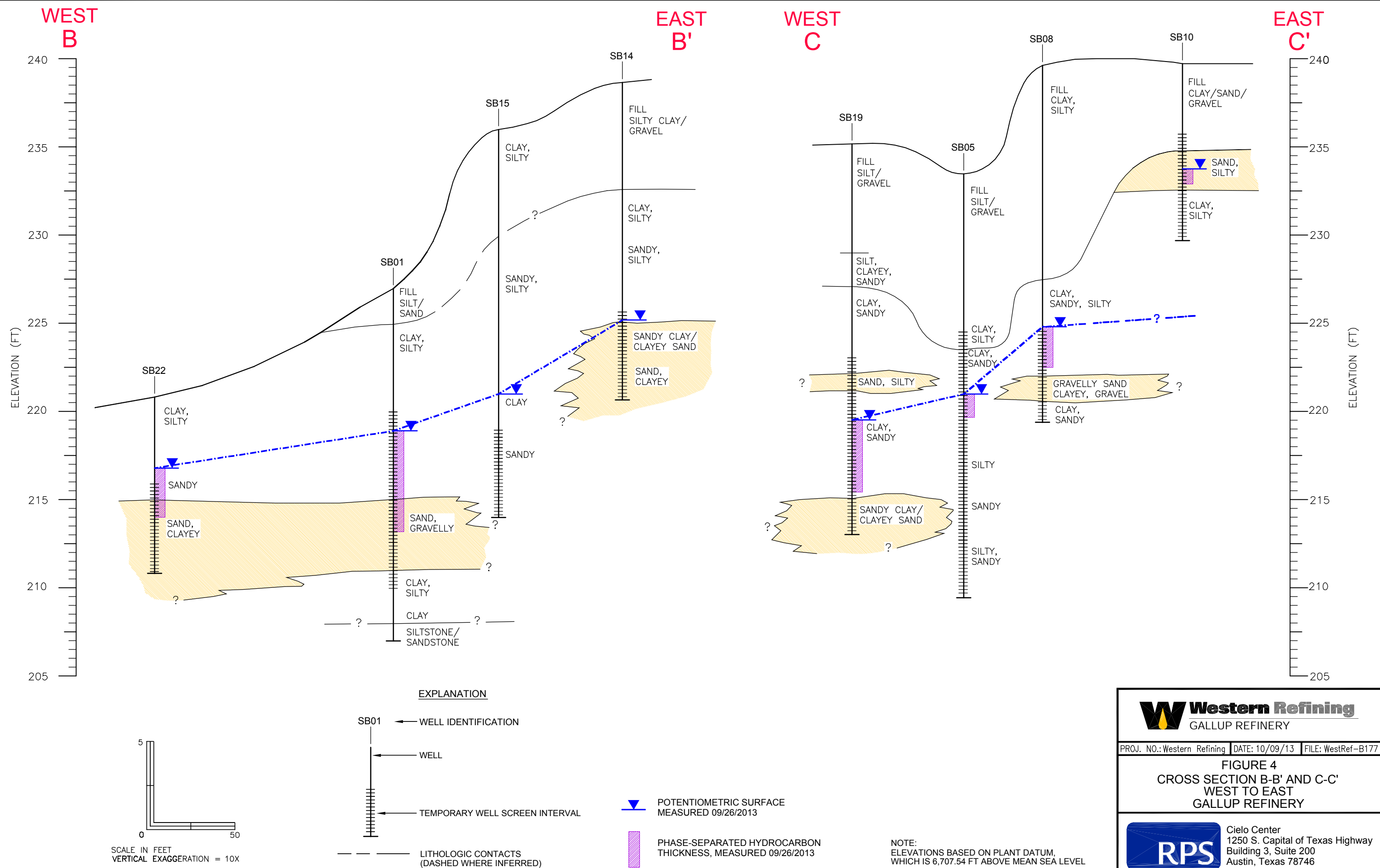
**FIGURE 2**  
CROSS-SECTION LOCATION MAP



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







## Chavez, Carl J, EMNRD

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Thursday, October 17, 2013 9:24 AM  
**To:** 'Larsen, Thurman'  
**Cc:** VanHorn, Kristen, NMENV; Dawson, Scott, EMNRD; Sanchez, Daniel J., EMNRD; VonGonten, Glenn, EMNRD; Powell, Brandon, EMNRD  
**Subject:** RE: C-141 Final Marketing Tank #3 (MT-3 Cleanup and Remediation Project)

Beck:

OCD notices that you marked the C-141 Form "Final"; however, you did not provide any verification to the OCD based on analytical sampling data and photos of excavation to indicated remediation was completed.

Please send the information and/or send a response plan to the OCD for approval of an investigation with verification of remediation within 30 days of receipt of this message.

The refinery has been told that certain documentation is required (photos of excavation, analytical data from base of excavation and sidewalls, diagram to scale of contaminated area, etc. as proof or verification that the operator has completed response action(s) based on a spill or release.

Thank you.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Department Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Drive, Santa Fe, New Mexico 87505

Office: (505) 476-3490

E-mail: [CarlJ.Chavez@State.NM.US](mailto:CarlJ.Chavez@State.NM.US)

Website: <http://www.emnrd.state.nm.us/ocd/> "Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?" To see how, please go to: "Pollution Prevention & Waste Minimization" at <http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>

-----Original Message-----

From: Larsen, Thurman [<mailto:Thurman.Larsen@wnr.com>]  
Sent: Wednesday, October 09, 2013 2:10 PM  
To: Chavez, Carl J, EMNRD; VanHorn, Kristen, NMENV  
Subject: C-141 Final Marketing Tank #3 (MT-3 Cleanup and Remediation Project)

Carl and Kristen,

Here is the Final C-141 for Marketing Tank #3 Cleanup and Remediation Project.

Thanks,  
Beck

## Chavez, Carl J, EMNRD

---

**From:** Larsen, Thurman <Thurman.Larsen@wnr.com>  
**Sent:** Wednesday, October 09, 2013 2:10 PM  
**To:** Chavez, Carl J, EMNRD; VanHorn, Kristen, NMENV  
**Subject:** C-141 Final Marketing Tank #3 (MT-3 Cleanup and Remediation Project)  
**Attachments:** C-141 Final 100913.pdf

Carl and Kristen,

Here is the Final C-141 for Marketing Tank #3 Cleanup and Remediation Project.

Thanks,  
Beck

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in  
accordance with 19.15.29 NMAC.

### Release Notification and Corrective Action

#### OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: WESTERN REFINING	Contact: Beck Larsen	
Address: I-40 / EXIT 39, JAMESTOWN, NM 87347	Telephone No.(505) 722-0258	
Facility Name: WESTERN RENINING (GALLUP REFINERY)	Facility Type: Petroleum Refinery	
Surface Owner	Mineral Owner	API No.

#### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	28	15 N	15 W					MCKINLEY

Latitude 35° 029' 024" Longitude 108° 024' 024"

#### NATURE OF RELEASE

Type of Release: 89 Base Unleaded Gasoline	Volume of Release: 100 bbls	Volume Recovered: 90 -97 bbls (Estimated)
Source of Release: Marketing Tank (T-3) Overflow	Date and Hour of Occurrence: 5/7/13 @ 0645 hrs	Date and Hour of Discovery: 5/07/13 @ 0648 hrs
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? (HWB-R. Horowitz (0715 msg), K Vanhorn (0718 msg)); (OCD -C Chavez (0726), Jonathan Kelly (0733))	
By Whom? Beck Larsen	Date and Hour: 5/07/13 0705 hrs	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	

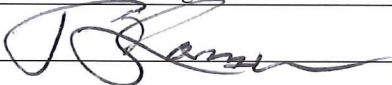
If a Watercourse was Impacted, Describe Fully.\* N/A

Describe Cause of Problem and Remedial Action Taken.\*

At about 0648 Marketing Tank (MT-3) began to overflow with 89 Octane unleaded gasoline. The auto-fill was left in hand position and the high level alarm did not work causing the tank to overflow. Offsite personnel shut off the 89 Base Sales Pump at the Rail Rack and began cleanup. ERT members were dispatched at ~ 0700 hrs. Overflow stopped at 0710 hrs. Pump Truck was dispatched to disperse foam over the area. Onsite vacuum truck was dispatched to remove any excess liquid gasoline from area.

Describe Area Affected and Cleanup Action Taken.\* Liquids were removed and initial samples were collected. Initial soil samples were collected and submitted to an outside laboratory for analysis. An outside contractor was called out in to scrap the contaminated affected area in several stages due to rain events. Confirmation samples were collected and submitted for analysis. On-site back-filled mater was spread to replace the contaminated material that was removed Remediated material was put in a roll-off for disposal. The project was finally concluded on October 8, 2013.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	<b>OIL CONSERVATION DIVISION</b>		
Printed Name: Beck Larsen:	Approved by Environmental Specialist:		
Title: Environmental Engineer	Approval Date:	Expiration Date:	
E-mail Address: Thurman.larsen@wnr.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 10/09/2013	Phone (505) 722-0258		

\* Attach Additional Sheets If Necessary

**Chavez, Carl J, EMNRD**

---

**From:** Larsen, Thurman <Thurman.Larsen@wnr.com>  
**Sent:** Thursday, September 05, 2013 12:49 PM  
**To:** VanHorn, Kristen, NMENV; Chavez, Carl J, EMNRD  
**Subject:** Semi-annual Passive Bio-venting Progress Report #6 for 2013  
**Attachments:** BIO-VENTING SA RPT #6 for 2013 FINAL.pdf; Transmittal of Soil Sampling Results for T-116 Diesel Release area.pdf

Dear Kristen and Carl,

The above attached report is for the Passive Bio-venting Progress Report #6 (2013) for the ULSD Soil Remediation in accordance with the NSR permit No. 0633-M8-R3 (Part A.214). If you should have any questions or comments, please contact me at (505) 722-0258.

Regards,

Beck Larsen  
Environmental Engineer  
Western Refining Southwest (Gallup Refinery)  
Office: (505) 722-0258  
cell: (505) 862-1749



September 5, 2013

New Mexico Environmental Department  
Hazardous Waste Bureau (HWB)  
1301 Siler Road, Building B  
Santa Fe, New Mexico 87507  
Attn: Ms. Kristen Van Horn

New Mexico Energy, Mineral, and Natural Resources  
Oil Conservation Division (OCD)  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505  
Attn: Mr. Carl Chavez

Re: Report #6  
Semi-annual Report: Passive (Bio-ventilation) Project for Ultra Low Sulfur Diesel  
(ULSD) Remediation in Accordance with NSR permit No. 0633-M8-R3, Part  
A.214

Dear Ms. Van Horn and Mr. Chavez,

On October 16, 2010, Western Refining Company, L.P. (Western) – Gallup Refinery (“the facility”) was granted New Source Review (NSR) permit 0633-M8-R3 which, under Part A.214, allowed the installation of a passive bioremediation (bio-ventilation) system for the Ultra-Low Sulphur Diesel (ULSD) fuel spill that occurred at the facility on April 24, 2008. A total of 16 ventilation standpipes were installed in the spill area to a depth of 3 feet below ground surface (bgs)(Figure 1, Attachment 1).

The objective of the bio-ventilation system is to decrease the average volatile organic compound (VOC) concentration over time to a satisfactory standard. Western is required to submit semi-annual reports to the New Mexico Environmental Department and new Mexico Energy, Minerals, and Natural Resources Oil Conservation Division. This semi-annual report includes monitoring data and analytical results from January 1, 2013 through June 28, 2013 in order to meet the requirements of the NSR permit and provides a discussion to the effectiveness of the remediation system. This report includes the following attachments:

- Site Map (Figure 1, Attachment 1)

- VOC concentration trend graphs for the monitoring period for each standpipe (Figure 2, Attachment 1)
- Graph of average total VOC concentration vs. temperature for the monitoring period (Figure 3, Attachment 1)
- Bio-Ventilation Monitoring Log – contains current and historical total VOC measurements for each standpipe (Table 1, Attachment 2)
- Summary of analytical results from the soil sampling that was conducted in May 2013. (Table 2, Attachment 2)

### *Monitoring Schedule*

During the initial stages of the project (December 2010 through January 2011), VOC monitoring was conducted on a bi-weekly basis to establish a baseline concentration. In February 2011, Western reduced the monitoring schedule to monthly and beginning July 2011, the monitoring schedule was further reduced to quarterly with occasional supplemental measurements to verify trends. Two monitoring events have been conducted thus far in 2013; on January 25, 2013 and June 28, 2013.

In addition to the vapor monitoring, Western conducted soil sampling in the Tank 116 Area in May 2013 to assess current levels of constituents of concern (COCs). The results were summarized in a report titled *“Transmittal of Soil Sampling Results for Tank 116 Diesel Release Area, Western Refining Company, LP Gallup, New Mexico Refinery”* submitted to NM-OCD on June 21, 2013. The results of the assessment are summarized below.

### *Vapor Monitoring Results*

VOC measurements are collected quarterly from each of the ventilation standpipes. The VOC monitoring data are summarized on Table 1 (Attachment 2). Trend graphs were prepared from the data for each standpipe for the three-year monitoring period and are shown on Figure 2, (Attachment 1). The data show that VOC concentrations fluctuate over the three-year period. However, despite these fluctuations, the concentration trends for the majority of the standpipes show a downward trend suggesting an overall reduction in VOC concentrations in the vicinity of the standpipes.

To evaluate whether the variability in VOC concentrations is related to changes in ambient temperature, a graph was prepared that plots the average VOC concentration for all standpipes along with ambient temperature for each date over the three-year monitoring period (Figure 3, Attachment 1). No obvious correlation between temperature and VOC concentration was determined.

### *Results of Shallow Soil Sampling*

Soil sampling was conducted in the Tank 116 study area on May 14 and 15, 2013 to assess current soil concentrations in the study area. Ten hand auger borings were conducted and soil samples were collected at 2 to 3 feet bgs. (immediately below the depth of excavation). The locations are shown on Figure 1 (Attachment 1). Samples were analyzed for total petroleum hydrocarbons-diesel range organics (TPH-DRO), BTEX, and semivolatile organic compounds (SVOCs). Analytical results are summarized on Table 2 (Attachment 2).

The data show that none of the detected VOC concentrations exceed regulatory standards. However, 7 of the 10 locations had reported TPH-DRO concentrations exceeded the NMED screening level for construction workers of 1,120 mg/Kg and three samples had reported concentrations of naphthalene exceeded the ground water protection (DAF 20) of 0.071 mg/Kg (Table 2). All other detected TPH and SVOCs were below the screening levels.

### **Conclusions**

The majority of the trend graphs of VOC concentrations measurements from each of the standpipes show a downward trend. The data suggest that VOCs concentrations in the shallow soils should also be on the decline. Recent soil sampling in the area shows that VOC concentrations were below NMED screening levels; however, residual TPH and naphthalene concentrations are present that exceed screening levels. Western will continue to collect vapor concentration measurements on a quarterly basis.

Western appreciates the opportunity to submit this semi-annual report. Should you have any questions, please call me at 505-722-0258 or Mr. Scott Kirby with ERM at 251-706-8567.

Sincerely,



Beck Larsen, CHMM/REM/PG  
Environmental Engineer  
Western Refining Southwest

Direct Line: (505) 722-0258

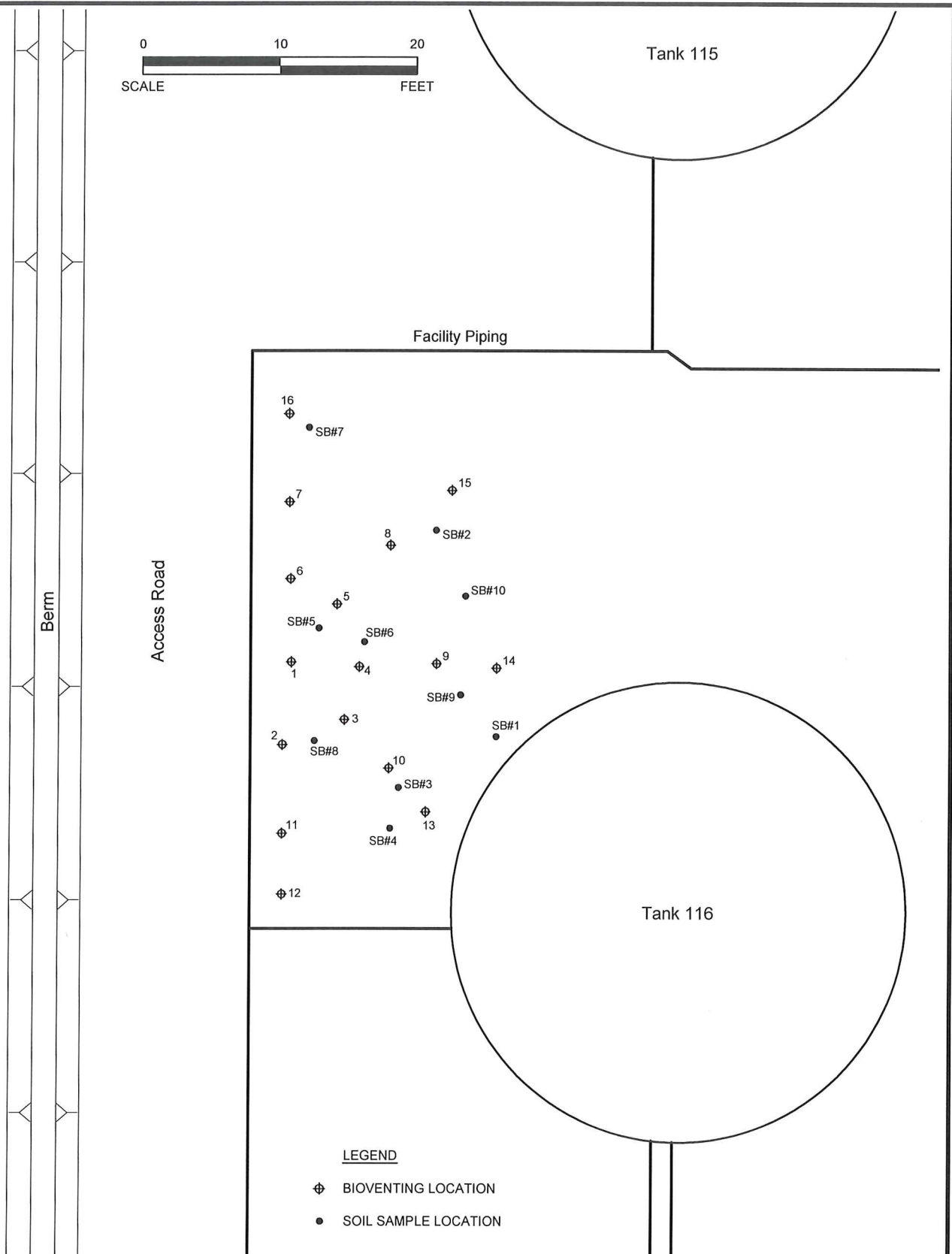
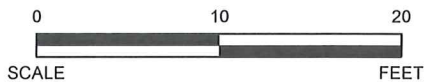
E-mail: [Thurman.larsen@wnr.com](mailto:Thurman.larsen@wnr.com)

*Attachment 1*

*Figures*

*September 5, 2013*





## Environmental Resources Management

DESIGN: DLW	DRAWN: EFC	CHKD.:
DATE: 8/28/2013	SCALE: AS SHOWN	REV.:
W.O. NO.: H:\DWG\H13\0202127a002.dwg, 8/28/2013 10:10:36 AM		

Figure 1  
Site Map  
Tank 116 Diesel Spill Area  
Western Refining - Gallup Refinery  
Gallup, New Mexico

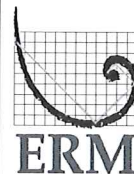


Figure 2

VOC Concentration Trend Graphs  
Bio-Ventilation System Standpipes  
Western Refining, L.P.  
Gallup, New Mexico

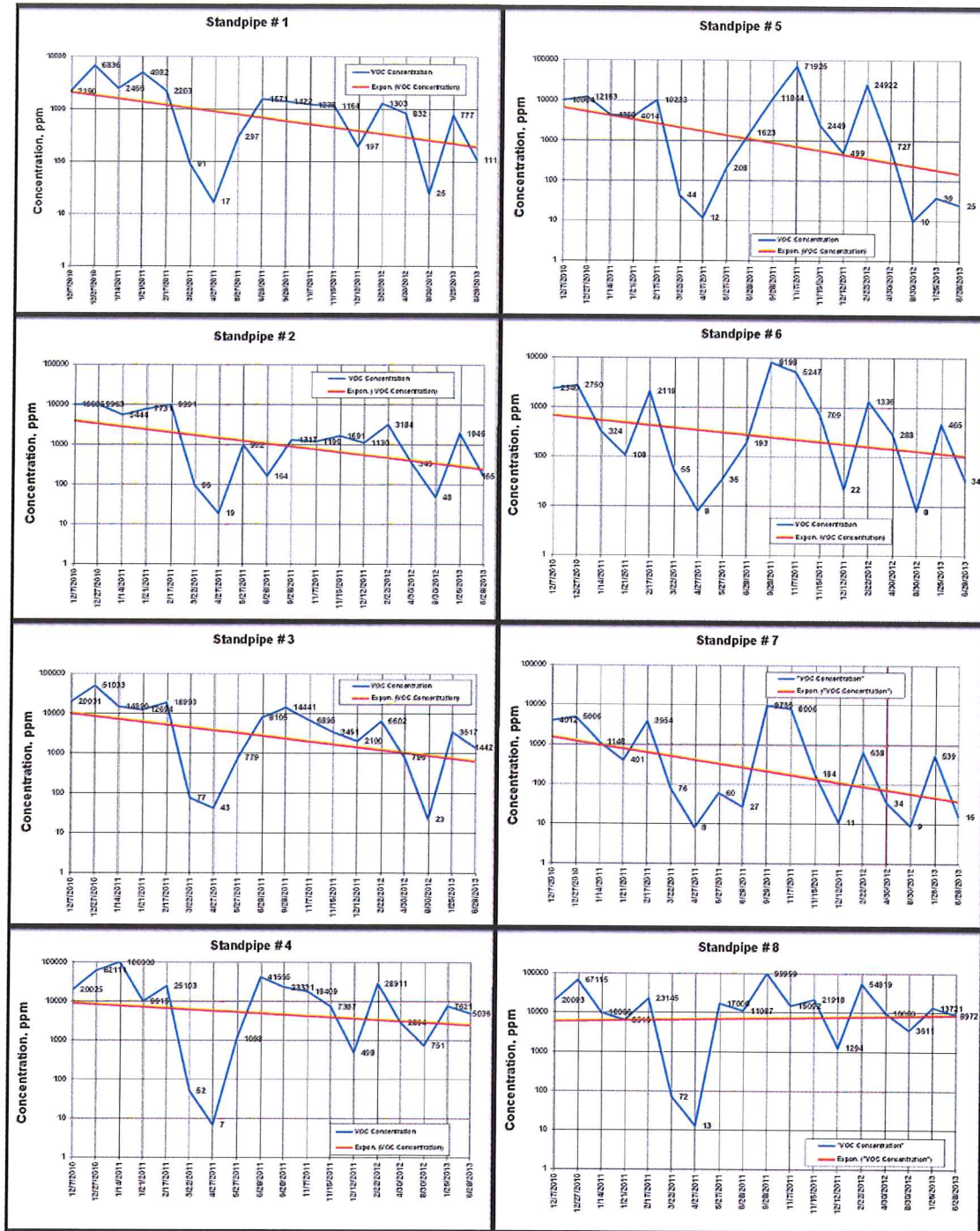
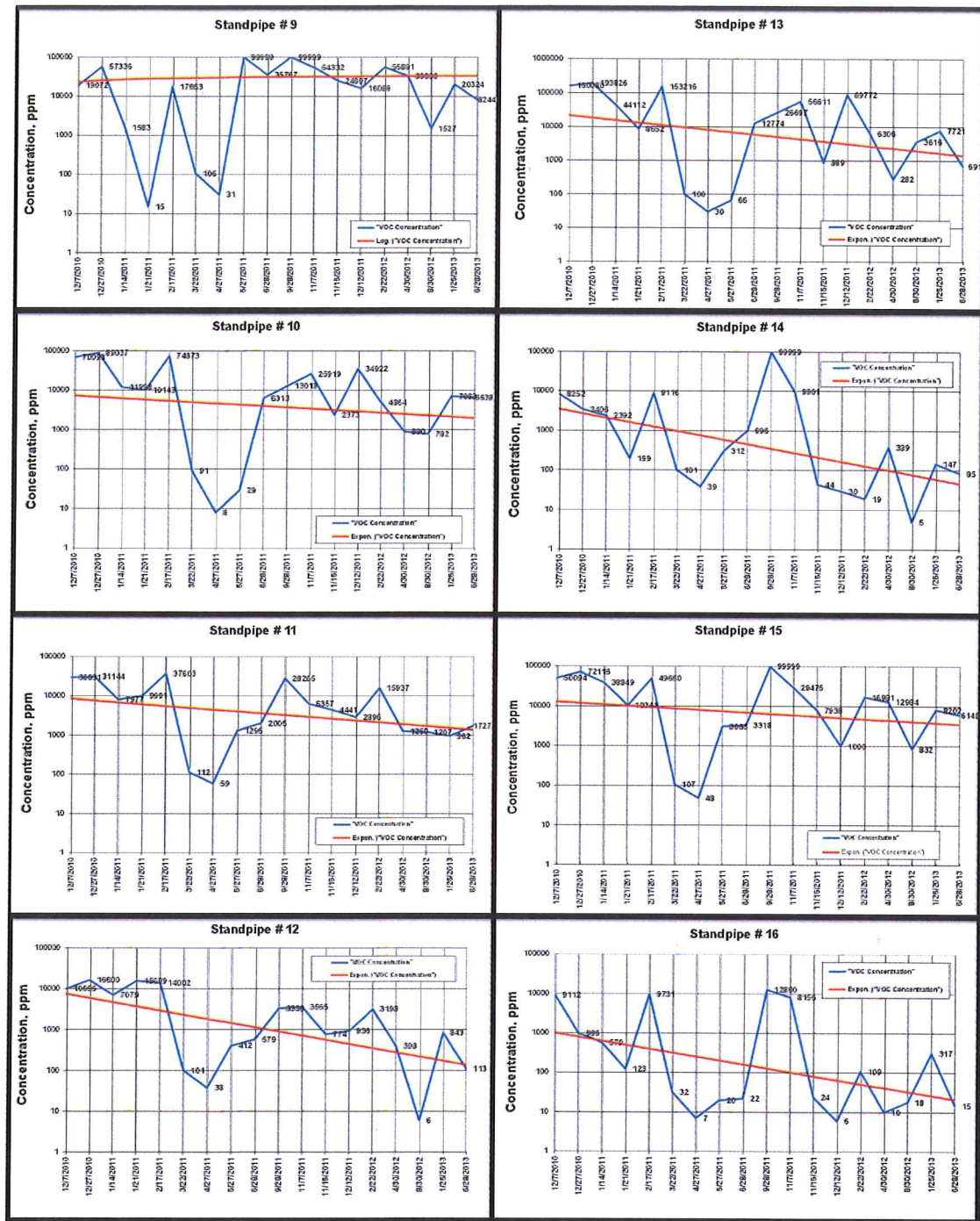


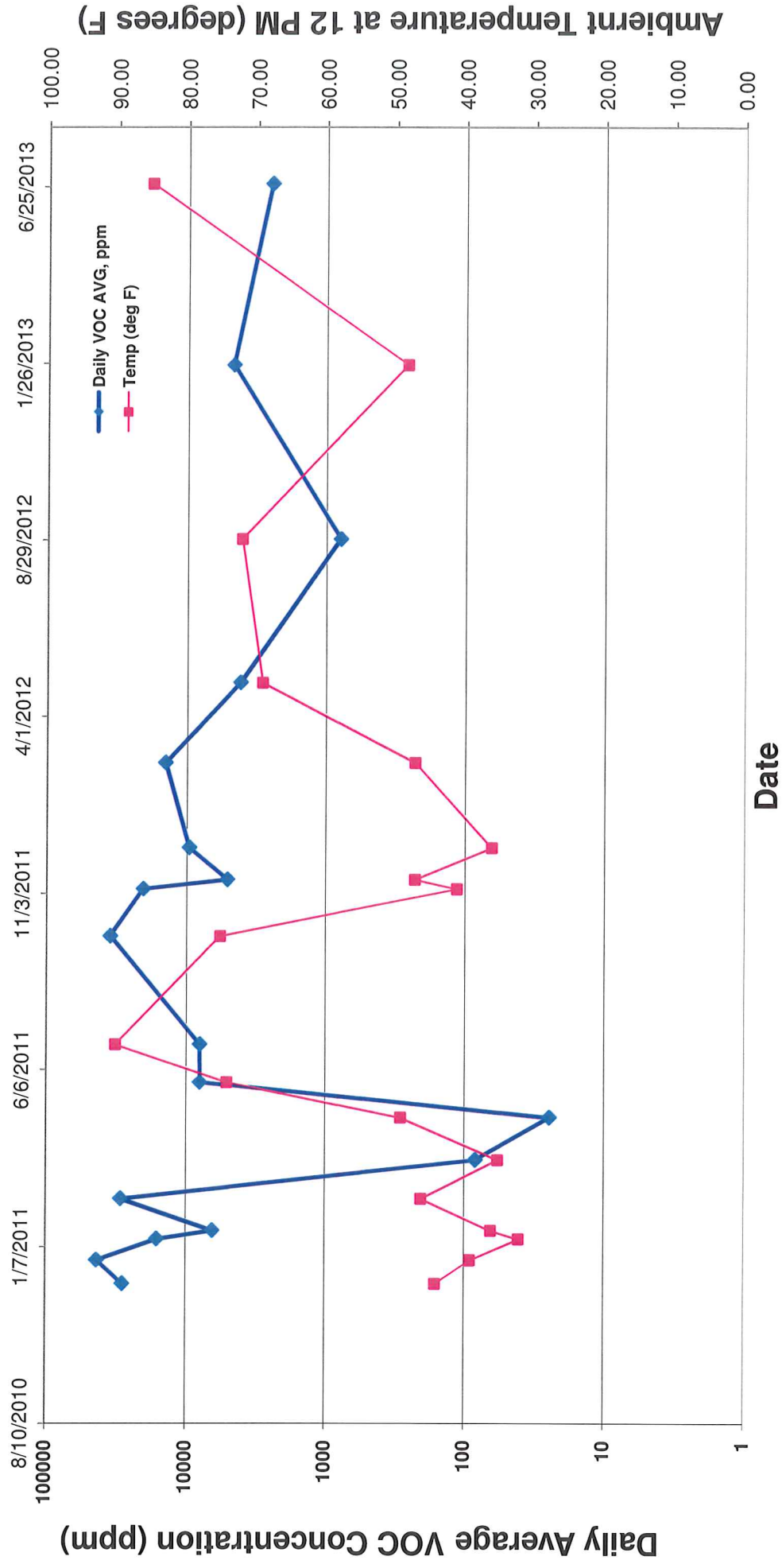
Figure 2

VOC Concentration Trend Graphs  
Bio-Ventilation System Standpipes  
Western Refining, L.P.  
Gallup, New Mexico





**Figure 3**  
**Daily Average VOC Concentration and Temperature versus Time**





*Attachment 2*

*Tables*

*September 5, 2013*

Table 1

## Bioventilation Monitoring Log

Map Location Number	Date:	READING (PPM)																	AVERAGE
		12/27/2010																	
		1/14/2011																	
		2/17/2011																	
Days from Start of Monitoring	0.00	20.00	38.00	45.00	72.00	105.00	141.00	171.00	203.00	295.00	335.00	343.00	370.00	442.00	510.00	632.00	780.00	934.00	
Ambient Temperature at 12 pm (deg F)	44.00	39.00	32.00	36.00	46.00	35.00	49.00	74.00	90.00	75.00	41.00	47.00	47.00	36.00	69.00	72.00	48.20	85.00	
Precipitation during or within 2 days of sampling (In)	0.00	0.00	0.02	0.00	0.00	0.05	0.06	0.00	0.00	0.00	0.25	0.05	0.03	0.00	0.00	0.01			
Tag #																			
C(1)	2190	6836	2466	4982	2203	91	17	297	1571	1422	1236	1164	197	1303	932	25	777	111	
C(2)	22724	9963	5444	7731	9991	96	19	992	164	1317	1199	1691	1130	3184	340	48	1946	165	
C(3)	22725	51033	14990	12694	18993	77	43	779	8105	14441	6895	3451	2100	6602	796	23	3517	1442	
C(4)	22726	20025	62111	9916	25103	52	7	1098	41555	23331	18409	7387	498	28911	2984	751	7621	5036	
C(5)	10064	12163	4290	4014	10223	44	12	208	1623	11844	71925	2449	499	24922	727	10	39	25	
C(6)	2340	2750	324	108	2119	55	8	35	193	8198	5247	709	22	1336	288	8	465	34	
C(7)	22729	5006	1148	401	3954	76	8	60	27	9735	8006	184	11	638	34	9	539	16	
C(8)	22730	20093	67115	10066	23145	72	13	17006	11087	99999	15092	1918	1294	54819	10000	3611	13721	8972	
C(9)	22731	19072	57336	1583	17663	106	31	99999	35767	99999	54332	24897	16088	55881	33000	1527	20324	8244	
C(10)	22732	70093	89037	11998	10143	91	8	29	6313	13018	25919	2373	34922	4864	890	782	7083	6639	
C(11)	22733	30031	31144	7977	9991	37603	112	59	1295	2005	6357	4441	2896	15937	1260	1207	962	1727	
C(12)	22734	10056	16600	7079	15699	14002	101	38	412	579	3338	3565	774	935	3198	6	843	119	
C(13)	160090	193826	44112	8652	153216	100	30	66	12774	26697	56611	889	89772	6306	282	3616	7721	691	
C(14)	8252	3406	2382	199	9116	101	39	312	996	99999	9901	44	30	19	389	5	147	85	
C(15)	22737	50094	72116	38849	48660	107	48	3065	3318	99999	29475	7938	1000	16981	12984	832	8202	6148	
C(16)	22738	9112	579	123	9731	32	7	20	22	12860	8156	24	6	109	10	18	317	15	
OVERALL DAILY AVG (ppm)		27846.9	42589.3	15831.1	6344.9	28458.7	82.1	24.2	7854.6	7881.2	20145.3	5020.8	9462.6	14053.1	4070.3	779.9	4659.0	2666.4	
DAILY GEOMETRIC AVG (ppm)		14556.1	19049.0	5555.3	2193.3	15377.6	77.7	18.6	457.3	16310.0	10850.0	1480.3	644.9	3897.3	1831.0	101.5	1601.5	420.0	
																		12922.5	

**Summary of Analytical Results**  
**Soil Samples from Tank 116 Area**  
**Western Refining Company, LP**  
**Gallup, New Mexico**

NMED Soil Screening Levels (DAF of 20)		NMED Soil Screening Levels (Construction)		NMED Soil Screening Levels (DAF of 20)		NMED Soil Screening Levels (Construction)	
Ground Water		Ground Water		Ground Water		Ground Water	
Protection		Protection		Protection		Protection	
Volatile Organic Constituents (VOCs)		Volatile Organic Constituents (VOCs)		Volatile Organic Constituents (VOCs)		Volatile Organic Constituents (VOCs)	
SB#1 (2'-3')	SB#2 (2'-3')	SB#3 (2'-3')	SB#4 (2'-3')	SB#5 (2'-3')	SB#6 (2'-3')	SB#7 (2'-3')	SB#8 (2'-3')
05/14/2013	05/15/2013	05/14/2013	05/15/2013	05/14/2013	05/15/2013	05/14/2013	05/15/2013
0.0055	<0.00073	<0.00069	0.0043	<0.00064	<0.00075	<0.00065	<0.00065
0.3	<0.0011	<0.0010	0.13	<0.00097	<0.0011	<0.00098	<0.00098
1,830	<0.0012	<0.0011	0.14	<0.0011	<0.0012	<0.0011	<0.0011
2,810	<0.0020	<0.0021	1.7	<0.0018	0.006	<0.0018	<0.0018
705	<0.0012	<0.0011	0.93	<0.0011	0.016	<0.0011	<0.0011
3.13	<0.0012	<0.0011	0.0069	<0.00075	<0.00087	<0.00076	<0.00076
13,400	<0.0082	<0.0080	2.6	<0.0018	0.022	<0.0018	<0.0018
743	<0.0020	<0.0019					
TPH - Diesel Range Organics							
DRO (>C10 - C28)							
1,120	3,900	5,500	3,300	2,800	140	3,600	
Semivolatile Organic Compounds (SVOCs)							
18,600	<0.23	3.8	<0.23	<0.21	<0.25	<0.22	<0.22
66,800	<0.23	1.6	<0.23	<0.21	<0.25	<0.22	<0.22
5,410	<0.23	<0.24	1.6	<0.21	<0.25	<0.22	<0.22
2,430	<0.23	4.9	<0.23	<0.21	<0.25	<0.22	<0.22
8,910	<0.23	0.93	<0.23	<0.21	<0.25	<0.22	<0.22
158	0.071	6.9	<0.23	<0.21	<0.25	<0.22	<0.22
7,150	0.39	2.1	<0.23	<0.21	<0.25	<0.22	<0.22
6,680	<0.23	17.3	1.0	<0.21	<0.25	<0.22	<0.22
1,790						0.94	0.94
Percent Moisture (Wt. %)							
	14.8		12.5	6.9	19.6	8.09	
Volatile Organic Constituents (VOCs)							
SB#9 (2'-3')	SB#10 (2'-3')	SB#11 (2'-3')	SB#12 (2'-3')	SB#13 (2'-3')	SB#14 (2'-3')	SB#15 (2'-3')	SB#16 (2'-3')
05/14/2013	05/15/2013	05/14/2013	05/15/2013	05/14/2013	05/15/2013	05/14/2013	05/15/2013
0.0055	<0.00071	0.0083	<0.00066	<0.00066	<0.00061	<0.00060	<0.00060
0.3	<0.0011	<0.0010	<0.0010	<0.0010	<0.00091	<0.00090	<0.00090
1,830	<0.0012	<0.0011	<0.0011	<0.0011	<0.0010	<0.0010	<0.0010
2,810	<0.0020	0.047	<0.0019	<0.0019	<0.0017	<0.0017	<0.0017
705	<0.0012	0.11	<0.0011	<0.0011	<0.0010	<0.0010	<0.0010
3.13	<0.0083	<0.00077	<0.00077	<0.00077	<0.00071	0.00074	0.00074
13,400	<0.0019	0.16	<0.0019	<0.0019	<0.0017	<0.0017	<0.0017
743							
TPH - Diesel Range Organics							
DRO (>C10 - C28)							
1,120	650	730	2,900		<0.51		
Semivolatile Organic Compounds (SVOCs)							
18,600	<0.022	2.0	<0.022	<0.020	<0.020	<0.020	<0.020
66,800	<0.022	0.87	<0.022	<0.020	<0.020	<0.020	<0.020
5,410	<0.024	0.41	<0.022	<0.020	<0.020	<0.020	<0.020
2,430	<0.024	1.5	<0.022	<0.020	<0.020	<0.020	<0.020
8,910	<0.024		<0.022	<0.020	<0.020	<0.020	<0.020
158	0.071		<0.022	<0.020	<0.020	<0.020	<0.020
7,150	<0.022	8.0	<0.022	<0.020	<0.020	<0.020	<0.020
6,680	<0.022	1.3	<0.022	<0.020	<0.020	<0.020	<0.020
1							
Percent Moisture (Wt. %)							
	9.67	9.67	9.61		1.43		

All concentrations in mg/Kg except where noted

**<0.022** - Constituent not detected above the method detection limit

- Constituent detected below the practical limit of quantitation
- Constituent not detected above the method detection limit

- Concentration exceeds the New Mexico Environmental Designation

- Concentration exceeds the NMED direct contact screening

Screening levels based on NIMED Risk Assessment Guidelines for Children

and Remediation Volume 1 (2006, revised 2012).

100

June 21, 2013

Mr. Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Department  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

Project Number: 0202127

Subject: Transmittal of Soil Sampling Results for Tank 116 Diesel  
Release Area, Western Refining Company, LP Gallup, New  
Mexico Refinery

Dear Mr. Chavez,

On behalf of Western Refining Company, LP. (Western), Environmental Resources Management (ERM) has prepared this summary letter presenting the results of soil sampling conducted May 14 and 15, 2013 in the vicinity of Tank 116 at Western's Gallup, New Mexico refinery. The sampling was conducted in general accordance with the October 11, 2012 Remedial Action Sampling and Analysis Plan (SAP) submitted to the New Mexico Oil Conservation Commission (NM-OCD).

### ***Background***

On April 24, 2008, approximately 1,890 gallons of Ultra Low Sulphur Diesel was released from Tank 116 in the North Tank Farm of the Gallup Refinery. Soils within the tank containment area and an adjacent service road were impacted by the release. Free liquids were removed by vacuum truck and sorbent material. Affected soils within the containment were excavated to a depth of approximately 2 feet below grade (Figure 1). On the roadway, which is partially paved, approximately 3-inches of soil were removed. Excavated soil was disposed of in a permitted landfill. Composite soil samples were collected from the excavation area and the excavations were backfilled with clean soil. Laboratory results for the initial soil samples (collected in 2008) are provided on Table 1.

Following the initial spill response, Western installed a passive bio-venting system as the remedy for the remaining soil. The biovents are constructed using a perforated vent pipe installed to a depth of 3 feet below grade. The first biovent was installed in mid-2008 and an evaluation sample was collected adjacent to the vent approximately one-year later. The results of that evaluation sample indicated lower concentrations (Table 1). Based on that analysis, 15 additional vent pipes were installed in December 2010 in a radial array as illustrated in Figure 2. The bio-ventilation system is operated under NSR Permit 0633-M8-R3. Volatile organic concentrations have been periodically monitored from the array and reported to the NM-OCD. Over the past four years, monitoring of the vents indicated an overall decrease in vapor concentrations. Based on those observations, Western elected to conduct additional soil sampling to further assess the effectiveness of the bio-venting.

Environmental  
Resources  
Management

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Suite 300  
Houston, Texas 77084-5140  
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(281) 600-1001 (fax)



***Field Activities***

Following the approach described in the SAP, the known area of affected soil was gridded and eight soil sample locations were selected at random. Based on the distribution of the randomly selected sample locations, two additional locations were added to fill gaps in the areas to be assessed (Figure 2). Soil borings were conducted at each of these locations using a hand auger. Soil samples were collected for laboratory analysis from 2 to 3 feet below grade (i.e., just beneath the depth of prior excavation).

Samples were collected in laboratory-supplied sample containers for analysis of volatile organic constituents (VOCs), semivolatile organic constituents (SVOCs), and diesel-range organics (TPH-DRO). Excess soil cuttings were placed in a 55-gallon drum for disposal by Western.

Once filled, sample containers were immediately placed in an ice-filled cooler. Samples were shipped by overnight courier to ALS Laboratories of Houston, Texas for analysis. Laboratory results are summarized in Table 2. The full laboratory report is provided as Attachment 1.

According to the laboratory data, reported TPH-DRO concentrations exceed the NMED screening level for construction workers of 1,120 mg/Kg at 7 of the 10 locations (Table 2). In addition, three of the samples had reported concentrations of naphthalene that exceeded ground water protection (DAF 20) of 0.071 mg/Kg. All other detected concentrations of VOCs and SVOCs were below screening levels.

Sincerely,

Environmental Resources Management



Donald L. Whitley, P.G.  
Project Manager

cc: Thurman Larsen, Western Refining Company LP  
Reif Hedgcoxe, Environmental Resources Management (Houston)  
Scott Kirby, Environmental Resources Management (Mobile)

## **Tables**

*June 21, 2013*  
*Project No. 0202127*

### **Environmental Resources Management**

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**Table 1**

**Summary of Analytical Results  
Historical Soil Samples from Tank 116 Area  
Western Refining Company, LP  
Gallup, New Mexico**

		<b>0806295-01</b>	<b>0806295-02</b>	<b>0806295-03</b>	<b>0806295-04</b>	<b>0907508-02</b>
		6/17/2008	6/17/2008	6/17/2008	6/17/2008	7/16/2009
		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
<b>Analyses</b>						
TPH-DRO	1,120	3,100	4,100	4,700	5,200	250
TPH-MRO	----	ND	ND	ND	ND	250
TPH-GRO	----	ND	ND	ND	ND	NA
MTBE	4,690	ND	ND	ND	ND	NA
Benzene	85	ND	ND	ND	ND	NA
Toluene	57,900	ND	ND	ND	ND	NA
Ethylbenzene	385	ND	ND	ND	ND	NA
Xylenes, Total	3,610	ND	ND	ND	ND	NA

**NOTES:**

ND - Constituent not detected above the laboratory reporting limit

NA - Sample not analyzed for this constituent

  - Concentration exceeds the NMED Direct Contact Screening Level



Table 2

**Summary of Analytical Results  
Soil Samples from Tank 116 Area  
Western Refining Company, LP  
Gallup, New Mexico**

Volatile Organic Constituents (VOCs)	NMED Soil Screening Levels	NMED Soil Screening Levels (DAF of 20) Ground Water Protection	SB#1 (2'-3')		SB#2 (2'-3')		SB#3 (2'-3')		SB#4 (2'-3')		SB#5 (2'-3')		SB#6 (2'-3')		SB#7 (2'-3')	
	(Construction)		05/14/2013		05/15/2013		05/14/2013		05/15/2013		05/14/2013		05/14/2013		05/15/2013	
Benzene	138	0.035	<0.00070	U	<0.00073	U	<0.00069	U	<b>0.0043</b>	J	<0.00064	U	<0.00075	U	<0.00065	U
Ethylbenzene	1,830	0.3	<0.0011	U	<0.0011	U	<0.0010	U	<b>0.13</b>		<0.00097	U	<0.0011	U	<0.00098	U
Isopropylbenzene	2,810	17.3	<0.0012	U	<0.0012	U	<0.0011	U	<b>0.14</b>		<0.0011	U	<0.0012	U	<0.0011	U
m,p-Xylene	705	3.1	<0.0020	U	<0.0021	U	<0.0019	U	<b>1.7</b>		<0.0018	U	<b>0.006</b>	J	<0.0018	U
o-Xylene	823	3.13	<0.0012	U	<b>0.054</b>		<0.0011	U	<b>0.93</b>		<0.0011	U	<b>0.016</b>		<0.0011	U
Toluene	13,400	25.3	<0.00082	U	<0.00085	U	<0.00080	U	<b>0.0069</b>		<0.00075	U	<0.00087	U	<0.00076	U
Xylenes, Total	743	3.13	<0.0020	U	<b>0.054</b>		<0.0019	U	<b>2.6</b>		<0.0018	U	<b>0.022</b>		<0.0018	U
<b>TPH - Diesel Range Organics</b>																
DRO (>C10 - C28)	1,120		<b>3,900</b>		<b>5,500</b>		<b>3,300</b>		<b>6,300</b>		<b>2,800</b>		<b>140</b>		<b>3,600</b>	
<b>Semivolatile Organic Compounds (SVOCs)</b>																
Acenaphthene	18,600	338	<0.23	U	<b>3.8</b>		<0.23	U	<0.22	U	<0.21	U	<0.25	U	<0.22	U
Anthracene	66,800	5,410	<0.23	U	<b>1.6</b>	J	<0.23	U	<0.22	U	<0.21	U	<0.25	U	<0.22	U
Fluoranthene	8,910	2,430	<0.23	U	<0.24	U	<b>1.6</b>	J	<0.22	U	<0.21	U	<0.25	U	<0.22	U
Fluorene	8,910	406	<0.23	U	<b>4.9</b>		<0.23	U	<0.22	U	<0.21	U	<0.25	U	<0.22	U
Naphthalene	158	0.071	<0.23	U	<b>0.93</b>	J	<0.23	U	<b>2.7</b>		<0.21	U	<0.25	U	<0.22	U
Phenanthrene	7,150	571	<b>0.39</b>	J	<b>6.9</b>		<0.23	U	<b>0.89</b>	J	<0.21	U	<0.25	U	<0.22	U
Pyrene	6,680	1,790	<0.23	U	<b>2.1</b>		<b>1.0</b>	J	<0.22	U	<0.21	U	<0.25	U	<b>0.94</b>	J
Percent Moisture (Wt. %)			14.8		17.3		12.5		9.72		6.9		19.6		8.09	
<b>TPH - Diesel Range Organics</b>																
DRO (>C10 - C28)	1,120		<b>650</b>		<b>1,500</b>		<b>730</b>		<b>2,900</b>				<0.51	U		
<b>Semivolatile Organic Compounds (SVOCs)</b>																
Acenaphthene	18,600	338	<0.022	U	<0.024	U	<b>2.0</b>		<0.022	U			<0.020	U		
Anthracene	66,800	5,410	<0.022	U	<0.024	U	<b>0.87</b>	J	<0.022	U			<0.020	U		
Fluoranthene	8,910	2,430	<0.022	U	<0.024	U	<b>0.41</b>	J	<0.022	U			<0.020	U		
Fluorene	8,910	406	<0.022	U	<0.024	U	<0.22	U	<0.022	U			<0.020	U		
Naphthalene	158	0.071	<0.022	U	<0.024	U	<b>1.5</b>	J	<0.022	U			<0.020	U		
Phenanthrene	7,150	571	<0.022	U	<b>0.066</b>	J	<b>8.0</b>		<0.022	U			<0.020	U		
Pyrene	6,680	1,790	<0.022	U	<b>0.068</b>	J	<b>1.3</b>	J	<0.022	U			<0.020	U		
Percent Moisture (Wt. %)			9.67		15.9		9.67		9.61				1.43			

## NOTES:

All concentrations in mg/Kg except where noted.

&lt;0.022 - Constituent not detected above the method detection limit

J - Constituent detected below the practical limit of quantitation

Yellow box - Concentration exceeds the New Mexico Environmental Department (NMED) screening level for ground water protection (DAF 20)

Black box - Concentration exceeds the NMED direct contact screening level for a construction worker.

Screening levels based on NMED Risk Assessment Guidance for Site Investigations and Remediation Volume 1 (2006, revised 2012).



## **Figures**

*June 21, 2013*  
*Project No. 0202127*

### **Environmental Resources Management**

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(281) 600-1000



Berm

CS-0806295-03

CS-0907508-02

Access Road

CS-0806295-01

Tank 115

Approximate Excavation Areas

CS-0806295-02

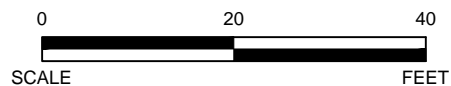
CS-0806295-04

Tank 116

Facility Piping

LEGEND

■ COMPOSITE SAMPLE LOCATION



## Environmental Resources Management

DESIGN: DLW      DRAWN: EFC      CHKD.:

DATE: 6/5/2013      SCALE: AS SHOWN      REV.:

W.O. NO.: H:\DWG\F13\0202127a001.dwg, 6/5/2013 10:23:30 AM

Figure 1  
Historical Sample Locations and Excavation Areas  
Tank 116 Diesel Spill Area  
Western Refining - Gallup Refinery  
Gallup, New Mexico





Berm

Access Road

Facility Piping

Tank 115

Tank 116

LEGEND

- ⊕ BIOVENTING LOCATION
- SOIL SAMPLE LOCATION

## Environmental Resources Management

DESIGN: DLW	DRAWN: EFC	CHKD.:
DATE: 6/5/2013	SCALE: AS SHOWN	REV.:
W.O. NO.: H:\DWG\F13\0202127a002.dwg, 6/5/2013 11:00:02 AM		

Figure 2  
Soil Sample Locations - May 2013 Samples  
Tank 116 Diesel Spill Area  
Western Refining - Gallup Refinery  
Gallup, New Mexico



**Laboratory Reports**  
*Attachment 1*

*June 21, 2013*  
*Project No. 0202127*

**Environmental Resources Management**  
15810 Park Ten Place, Suite 300  
Houston, Texas 77084-5140  
(281) 600-1000



23-May-2013

Don Whitley  
Environmental Resources Management  
15810 Park Ten Place  
Suite 300  
Houston, TX 77084

Tel: (281) 600-1084  
Fax: (281) 600-1001

Re: Gallup NM # PN 0097134

Work Order: **1305777**

Dear Don,

ALS Environmental received 16 samples on 17-May-2013 09:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 60.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in cursive script, reading "Bernadette Fini".

Electronically approved by: Dayna.Fisher

Bernadette A. Fini  
Project Manager



Certificate No: TX: T104704231-13-11

ADDRESS 10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338 | PHONE (281) 530-5656 | FAX (281) 530-5887

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RIGHT SOLUTIONS RIGHT PARTNER

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**Work Order:** 1305777

---

**TRRP Laboratory Data  
Package Cover Page**

---

This data package consists of all or some of the following as applicable:

This signature page, the laboratory review checklist, and the following reportable data:

- R1 Field chain-of-custody documentation;
- R2 Sample identification cross-reference;
- R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - a) Items consistent with NELAC Chapter 5,
  - b) dilution factors,
  - c) preparation methods,
  - d) cleanup methods, and
  - e) if required for the project, tentatively identified compounds (TICs).
- R4 Surrogate recovery data including:
  - a) Calculated recovery (%R), and
  - b) The laboratory's surrogate QC limits.
- R5 Test reports/summary forms for blank samples;
- R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - a) LCS spiking amounts,
  - b) Calculated %R for each analyte, and
  - c) The laboratory's LCS QC limits.
- R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a) Samples associated with the MS/MSD clearly identified,
  - b) MS/MSD spiking amounts,
  - c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d) Calculated %Rs and relative percent differences (RPDs), and
  - e) The laboratory's MS/MSD QC limits.
- R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - a) the amount of analyte measured in the duplicate,
  - b) the calculated RPD, and
  - c) the laboratory's QC limits for analytical duplicates.
- R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- R10 Other problems or anomalies.  
The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

---

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**Work Order:** 1305777

---

**TRRP Laboratory Data  
Package Cover Page**

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory have been identified by the laboratory in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [NA] This laboratory meets an exception under 30 TAC §25.6 and was last inspected by [ ] TCEQ or [ ] \_\_\_\_\_ on (enter date of last inspection). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

*Bernadette A. Fini*

Bernadette A. Fini  
Project Manager

Laboratory Review Checklist: Reportable Data								
Laboratory Name: ALS Laboratory Group					LRC Date: 05/23/2013			
Project Name: Gallup NM # PN 0097134					Laboratory Job Number: 1305777			
Reviewer Name: Bernadette Fini					Prep Batch Number(s): 70112A,70114,70124,R147609,R147658,R147725,R147733			
# <sup>1</sup>	A <sup>2</sup>	Description	Yes	No	NA <sup>3</sup>	NR <sup>4</sup>	ER <sup>5</sup>	
<b>R1</b>	<b>OI</b>	<b>Chain-of-custody (C-O-C)</b>						
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X					
		Were all departures from standard conditions described in an exception report?	X					
<b>R2</b>	<b>OI</b>	<b>Sample and quality control (QC) identification</b>						
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X					
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X					
<b>R3</b>	<b>OI</b>	<b>Test reports</b>						
		Were all samples prepared and analyzed within holding times?	X					
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X					
		Were calculations checked by a peer or supervisor?	X					
		Were all analyte identifications checked by a peer or supervisor?	X					
		Were sample detection limits reported for all analytes not detected?	X					
		Were all results for soil and sediment samples reported on a dry weight basis?	X					
		Were % moisture (or solids) reported for all soil and sediment samples?	X					
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW-846 Method 5035?			X			
		If required for the project, TICs reported?			X			
<b>R4</b>	<b>O</b>	<b>Surrogate recovery data</b>						
		Were surrogates added prior to extraction?	X					
		Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			1	
<b>R5</b>	<b>OI</b>	<b>Test reports/summary forms for blank samples</b>						
		Were appropriate type(s) of blanks analyzed?	X					
		Were blanks analyzed at the appropriate frequency?	X					
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X					
		Were blank concentrations < MQL?	X					
<b>R6</b>	<b>OI</b>	<b>Laboratory control samples (LCS):</b>						
		Were all COCs included in the LCS?	X					
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X					
		Were LCSs analyzed at the required frequency?	X					
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X					
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X					
		Was the LCSD RPD within QC limits?	X					
<b>R7</b>	<b>OI</b>	<b>Matrix spike (MS) and matrix spike duplicate (MSD) data</b>						
		Were the project/method specified analytes included in the MS and MSD?	X					
		Were MS/MSD analyzed at the appropriate frequency?	X					
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			2	
		Were MS/MSD RPDs within laboratory QC limits?	X					
<b>R8</b>	<b>OI</b>	<b>Analytical duplicate data</b>						
		Were appropriate analytical duplicates analyzed for each matrix?	X					
		Were analytical duplicates analyzed at the appropriate frequency?	X					
		Were RPDs or relative standard deviations within the laboratory QC limits?	X					
<b>R9</b>	<b>OI</b>	<b>Method quantitation limits (MQLs):</b>						
		Are the MQLs for each method analyte included in the laboratory data package?	X					
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X					
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X					
<b>R10</b>	<b>OI</b>	<b>Other problems/anomalies</b>						
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X					
		Were all necessary corrective actions performed for the reported data?	X					
		Was applicable and available technology used to lower the SDL and minimize the matrix interference affects on the sample results?	X					
		Is the laboratory NELAC-accredited under the Texas Laboratory Program for the analytes, matrices and methods associated with this laboratory data package?	X					



Laboratory Review Checklist: Reportable Data							
Laboratory Name: ALS Laboratory Group			LRC Date: 05/23/2013				
Project Name: Gallup NM # PN 0097134			Laboratory Job Number: 1305777				
Reviewer Name: Bernadette Fini			Prep Batch Number(s): 70112A,70114,70124,R147609,R147658,R147725,R147733				
# <sup>1</sup>	A <sup>2</sup>	Description	Yes	No	NA <sup>3</sup>	NR <sup>4</sup>	ER# <sup>5</sup>
S1	OI	<b>Initial calibration (ICAL)</b>					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	<b>Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB)</b>					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
S3	O	<b>Mass spectral tuning:</b>					
		Was the appropriate compound for the method used for tuning?	X				
		Were ion abundance data within the method-required QC limits?	X				
S4	O	<b>Internal standards (IS):</b>					
		Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	<b>Raw data</b> (NELAC section 1 appendix A glossary, and section 5.12 or ISO/IEC 17025 section					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	<b>Dual column confirmation</b>					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	<b>Tentatively identified compounds (TICs):</b>					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	<b>Interference Check Sample (ICS) results:</b>					
		Were percent recoveries within method QC limits?			X		
S9	I	<b>Serial dilutions, post digestion spikes, and method of standard additions</b>					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	<b>Method detection limit (MDL) studies</b>					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	<b>Proficiency test reports:</b>					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	<b>Standards documentation</b>					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	<b>Compound/analyte identification procedures</b>					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	<b>Demonstration of analyst competency (DOC)</b>					
		Was DOC conducted consistent with NELAC Chapter 5C or ISO/IEC 4?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	<b>Verification/validation documentation for methods</b> (NELAC Chap 5 or ISO/IEC 17025 Section 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	<b>Laboratory standard operating procedures (SOPs):</b>					
		Are laboratory SOPs current and on file for each method performed?	X				

Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.  
O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);  
NA = Not Applicable;  
NR = Not Reviewed;  
R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review Checklist: Reportable Data	
Laboratory Name: ALS Laboratory Group	LRC Date: 05/23/2013
Project Name: Gallup NM # PN 0097134	Laboratory Job Number: 1305777
Reviewer Name: Bernadette Fini	Prep Batch Number(s): 70112A,70114,70124,R147609,R147658,R147725,R147733
ER# <sup>5</sup>	Description
1	<p>TPH (DRO) – 8015C, Surrogate 2-Fluorobiphenyl recoveries were diluted out in the 100X dilution for various samples.</p> <p>Semivolatile Organics Method 8270, Surrogate: 2, 4, 6-Tribromophenol, Nitrobenzene-d5, and 2-Fluorobiphenyl recoveries were above the control limits for various samples. Results confirmed as matrix interference by re-analysis.</p>
2	<p>Batch 70112A, TPH (DRO) 8015C, Sample SB#11 (2' – 3'): MS/MSD recoveries were outside the control limits for DRO (&gt;C10 – C28) due to high concentration to the background sample. Results are flagged with an O. The associated LCS recoveries and MS/MSD RPD were within the control limits.</p> <p>Batch 70124, TPH (DRO) 8015C, Sample SB#4 (2' – 3'): MS/MSD recoveries were outside the control limits for DRO (&gt;C10 – C28) due to high concentration to the background sample. Results are flagged with an O. The associated LCS recoveries and MS/MSD RPD were within the control limits.</p> <p>Batch R147609, Volatile Organics 8260, Sample SB#1 (2' – 3'): MS/MSD recoveries were outside the control limits for several analytes. The associated LCS recoveries and MS/MSD RPD were within the control limits.</p> <p>Batch R147658, Volatile Organics 8260, Sample 1305709-13: MS/MSD is for an unrelated sample.</p>
<p>Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.</p> <p>O = Organic Analyses; I = Inorganic Analyses (and general chemistry, when applicable);</p> <p>NA = Not Applicable;</p> <p>NR = Not Reviewed;</p> <p>R# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).</p>	

# ALS Environmental

Date: 23-May-13

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**Work Order:** 1305777

## Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1305777-01	SB#1 (2'-3')	Soil		5/14/2013 07:50	5/17/2013 09:00	<input type="checkbox"/>
1305777-02	SB#11 (2'-3')	Soil		5/14/2013 15:00	5/17/2013 09:00	<input type="checkbox"/>
1305777-03	SB#5 (2'-3')	Soil		5/14/2013 08:20	5/17/2013 09:00	<input type="checkbox"/>
1305777-04	SB#5 (4'-5')	Soil		5/14/2013 08:35	5/17/2013 09:00	<input checked="" type="checkbox"/>
1305777-05	SB#8 (2'-3')	Soil		5/14/2013 09:05	5/17/2013 09:00	<input type="checkbox"/>
1305777-06	SB#8 (4'-5')	Soil		5/14/2013 09:09	5/17/2013 09:00	<input checked="" type="checkbox"/>
1305777-07	SB#6 (2'-3')	Soil		5/14/2013 09:25	5/17/2013 09:00	<input type="checkbox"/>
1305777-08	SB#9 (2'-3')	Soil		5/14/2013 09:55	5/17/2013 09:00	<input type="checkbox"/>
1305777-09	SB#3 (2'-3')	Soil		5/14/2013 13:15	5/17/2013 09:00	<input type="checkbox"/>
1305777-10	SB#2 (2'-3')	Soil		5/15/2013 07:50	5/17/2013 09:00	<input type="checkbox"/>
1305777-11	SB#2 (4'-5')	Soil		5/15/2013 08:30	5/17/2013 09:00	<input checked="" type="checkbox"/>
1305777-12	Equipment Blank	Soil		5/15/2013 08:40	5/17/2013 09:00	<input type="checkbox"/>
1305777-13	SB#7 (2'-3')	Soil		5/15/2013 09:35	5/17/2013 09:00	<input type="checkbox"/>
1305777-14	SB#10 (2'-3')	Soil		5/15/2013 10:25	5/17/2013 09:00	<input type="checkbox"/>
1305777-15	SB#4 (2'-3')	Soil		5/15/2013 11:19	5/17/2013 09:00	<input type="checkbox"/>
1305777-16	Trip Blank - Soil	Soil		5/14/2013	5/17/2013 09:00	<input type="checkbox"/>

# ALS Environmental

Date: 23-May-13

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**Sample ID:** SB#1 (2'-3')  
**Collection Date:** 5/14/2013 07:50 AM

**Work Order:** 1305777  
**Lab ID:** 1305777-01  
**Matrix:** SOIL

Analyses	Result	Qual	SDL	ML	Units	Dilution Factor	Date Analyzed
<b>TPH (DRO) - 8015C</b>			Method:SW8015M			Analyst: RPM	
DRO (>C10 - C28)	3,900		59	200	mg/Kg-dry	100	5/21/2013 17:00
Surr: 2-Fluorobiphenyl	0	S		60-135	%REC	100	5/21/2013 17:00
<b>SEMIVOLATILES</b>			Method:SW8270			Prep: SW3541 / 5/20/13	
						Analyst: JLJ	
2,4,5-Trichlorophenol	U		0.23	2.0	mg/Kg-dry	10	5/22/2013 14:39
2,4,6-Trichlorophenol	U		0.23	2.0	mg/Kg-dry	10	5/22/2013 14:39
2,4-Dichlorophenol	U		0.29	2.0	mg/Kg-dry	10	5/22/2013 14:39
2,4-Dimethylphenol	U		0.41	2.0	mg/Kg-dry	10	5/22/2013 14:39
2,4-Dinitrophenol	U		0.23	2.0	mg/Kg-dry	10	5/22/2013 14:39
2-Chlorophenol	U		0.72	2.0	mg/Kg-dry	10	5/22/2013 14:39
Acenaphthene	U		0.23	2.0	mg/Kg-dry	10	5/22/2013 14:39
Anthracene	U		0.23	2.0	mg/Kg-dry	10	5/22/2013 14:39
Benz(a)anthracene	U		0.23	2.0	mg/Kg-dry	10	5/22/2013 14:39
Benzo(a)pyrene	U		0.23	2.0	mg/Kg-dry	10	5/22/2013 14:39
Benzo(b)fluoranthene	U		0.23	2.0	mg/Kg-dry	10	5/22/2013 14:39
Benzo(k)fluoranthene	U		0.23	2.0	mg/Kg-dry	10	5/22/2013 14:39
Chrysene	U		0.23	2.0	mg/Kg-dry	10	5/22/2013 14:39
Dibenz(a,h)anthracene	U		0.23	2.0	mg/Kg-dry	10	5/22/2013 14:39
Fluoranthene	U		0.23	2.0	mg/Kg-dry	10	5/22/2013 14:39
Fluorene	U		0.23	2.0	mg/Kg-dry	10	5/22/2013 14:39
Naphthalene	U		0.23	2.0	mg/Kg-dry	10	5/22/2013 14:39
Nitrobenzene	U		0.23	2.0	mg/Kg-dry	10	5/22/2013 14:39
Pentachlorophenol	U		0.23	2.0	mg/Kg-dry	10	5/22/2013 14:39
Phenanthrene	0.39	J	0.23	2.0	mg/Kg-dry	10	5/22/2013 14:39
Phenol	U		0.81	2.0	mg/Kg-dry	10	5/22/2013 14:39
Pyrene	U		0.23	2.0	mg/Kg-dry	10	5/22/2013 14:39
Surr: 2,4,6-Tribromophenol	216	S		36-126	%REC	10	5/22/2013 14:39
Surr: 2-Fluorobiphenyl	111			43-125	%REC	10	5/22/2013 14:39
Surr: 2-Fluorophenol	77.8			37-125	%REC	10	5/22/2013 14:39
Surr: 4-Terphenyl-d14	115			32-125	%REC	10	5/22/2013 14:39
Surr: Nitrobenzene-d5	146	S		37-125	%REC	10	5/22/2013 14:39
Surr: Phenol-d6	91.6			40-125	%REC	10	5/22/2013 14:39
<b>VOLATILES - SW8260C</b>			Method:SW8260			Analyst: WLR	
Benzene	U		0.00070	0.0059	mg/Kg-dry	1	5/20/2013 11:26
Ethylbenzene	U		0.0011	0.0059	mg/Kg-dry	1	5/20/2013 11:26
Isopropylbenzene	U		0.0012	0.0059	mg/Kg-dry	1	5/20/2013 11:26
m,p-Xylene	U		0.0020	0.012	mg/Kg-dry	1	5/20/2013 11:26
o-Xylene	U		0.0012	0.0059	mg/Kg-dry	1	5/20/2013 11:26

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental**

Date: 23-May-13

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**Sample ID:** SB#1 (2'-3')  
**Collection Date:** 5/14/2013 07:50 AM

**Work Order:** 1305777  
**Lab ID:** 1305777-01  
**Matrix:** SOIL

Analyses	Result	Qual	SDL	ML	Units	Dilution Factor	Date Analyzed
Styrene	U		0.00070	0.0059	mg/Kg-dry	1	5/20/2013 11:26
Toluene	U		0.00082	0.0059	mg/Kg-dry	1	5/20/2013 11:26
Xylenes, Total	U		0.0020	0.012	mg/Kg-dry	1	5/20/2013 11:26
Surr: 1,2-Dichloroethane-d4	95.6			70-128	%REC	1	5/20/2013 11:26
Surr: 4-Bromofluorobenzene	86.2			73-126	%REC	1	5/20/2013 11:26
Surr: Dibromofluoromethane	97.8			71-128	%REC	1	5/20/2013 11:26
Surr: Toluene-d8	102			73-127	%REC	1	5/20/2013 11:26
<b>MOISTURE</b>			Method: <b>SW3550</b>				Analyst: <b>KAH</b>
Percent Moisture	14.8		0.010	0.0100	wt%	1	5/21/2013 14:00

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 23-May-13

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**Sample ID:** SB#11 (2'-3')  
**Collection Date:** 5/14/2013 03:00 PM

**Work Order:** 1305777  
**Lab ID:** 1305777-02  
**Matrix:** SOIL

Analyses	Result	Qual	SDL	ML	Units	Dilution Factor	Date Analyzed
<b>TPH (DRO) - 8015C</b>			Method:SW8015M			Analyst: RPM	
DRO (>C10 - C28)	2,900		55	190	mg/Kg-dry	100	5/21/2013 17:24
Surr: 2-Fluorobiphenyl	0	S		60-135	%REC	100	5/21/2013 17:24
<b>SEMIVOLATILES</b>			Method:SW8270			Prep: SW3541 / 5/20/13 Analyst: JLJ	
2,4,5-Trichlorophenol	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 18:49
2,4,6-Trichlorophenol	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 18:49
2,4-Dichlorophenol	U		0.028	0.18	mg/Kg-dry	1	5/21/2013 18:49
2,4-Dimethylphenol	U		0.039	0.18	mg/Kg-dry	1	5/21/2013 18:49
2,4-Dinitrophenol	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 18:49
2-Chlorophenol	U		0.069	0.18	mg/Kg-dry	1	5/21/2013 18:49
Acenaphthene	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 18:49
Anthracene	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 18:49
Benz(a)anthracene	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 18:49
Benzo(a)pyrene	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 18:49
Benzo(b)fluoranthene	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 18:49
Benzo(k)fluoranthene	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 18:49
Chrysene	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 18:49
Dibenz(a,h)anthracene	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 18:49
Fluoranthene	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 18:49
Fluorene	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 18:49
Naphthalene	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 18:49
Nitrobenzene	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 18:49
Pentachlorophenol	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 18:49
Phenanthrene	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 18:49
Phenol	U		0.076	0.18	mg/Kg-dry	1	5/21/2013 18:49
Pyrene	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 18:49
Surr: 2,4,6-Tribromophenol	73.7			36-126	%REC	1	5/21/2013 18:49
Surr: 2-Fluorobiphenyl	61.6			43-125	%REC	1	5/21/2013 18:49
Surr: 2-Fluorophenol	49.5			37-125	%REC	1	5/21/2013 18:49
Surr: 4-Terphenyl-d14	60.7			32-125	%REC	1	5/21/2013 18:49
Surr: Nitrobenzene-d5	59.9			37-125	%REC	1	5/21/2013 18:49
Surr: Phenol-d6	56.4			40-125	%REC	1	5/21/2013 18:49
<b>VOLATILES - SW8260C</b>			Method:SW8260			Analyst: WLR	
Benzene	U		0.00066	0.0055	mg/Kg-dry	1	5/20/2013 11:50
Ethylbenzene	U		0.0010	0.0055	mg/Kg-dry	1	5/20/2013 11:50
Isopropylbenzene	U		0.0011	0.0055	mg/Kg-dry	1	5/20/2013 11:50
m,p-Xylene	U		0.0019	0.011	mg/Kg-dry	1	5/20/2013 11:50
o-Xylene	U		0.0011	0.0055	mg/Kg-dry	1	5/20/2013 11:50

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental**

Date: 23-May-13

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**Sample ID:** SB#11 (2'-3')  
**Collection Date:** 5/14/2013 03:00 PM

**Work Order:** 1305777  
**Lab ID:** 1305777-02  
**Matrix:** SOIL

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
Styrene	U		0.00066	0.0055	mg/Kg-dry	1	5/20/2013 11:50
Toluene	U		0.00077	0.0055	mg/Kg-dry	1	5/20/2013 11:50
Xylenes, Total	U		0.0019	0.011	mg/Kg-dry	1	5/20/2013 11:50
Surr: 1,2-Dichloroethane-d4	89.1			70-128	%REC	1	5/20/2013 11:50
Surr: 4-Bromofluorobenzene	80.3			73-126	%REC	1	5/20/2013 11:50
Surr: Dibromofluoromethane	94.7			71-128	%REC	1	5/20/2013 11:50
Surr: Toluene-d8	107			73-127	%REC	1	5/20/2013 11:50
<b>MOISTURE</b>			Method: <b>SW3550</b>				Analyst: <b>KAH</b>
Percent Moisture	9.61		0.010	0.0100	wt%	1	5/21/2013 14:00

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 23-May-13

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**Sample ID:** SB#5 (2'-3')  
**Collection Date:** 5/14/2013 08:20 AM

**Work Order:** 1305777  
**Lab ID:** 1305777-03  
**Matrix:** SOIL

Analyses	Result	Qual	SDL	ML	Units	Dilution Factor	Date Analyzed
<b>TPH (DRO) - 8015C</b>			Method:SW8015M			Analyst: RPM	
DRO (>C10 - C28)	2,800		54	180	mg/Kg-dry	100	5/21/2013 17:47
Surr: 2-Fluorobiphenyl	0	S		60-135	%REC	100	5/21/2013 17:47
<b>SEMIVOLATILES</b>			Method:SW8270			Prep: SW3541 / 5/20/13	
						Analyst: JLJ	
2,4,5-Trichlorophenol	U		0.21	1.8	mg/Kg-dry	10	5/22/2013 16:31
2,4,6-Trichlorophenol	U		0.21	1.8	mg/Kg-dry	10	5/22/2013 16:31
2,4-Dichlorophenol	U		0.27	1.8	mg/Kg-dry	10	5/22/2013 16:31
2,4-Dimethylphenol	U		0.37	1.8	mg/Kg-dry	10	5/22/2013 16:31
2,4-Dinitrophenol	U		0.21	1.8	mg/Kg-dry	10	5/22/2013 16:31
2-Chlorophenol	U		0.66	1.8	mg/Kg-dry	10	5/22/2013 16:31
Acenaphthene	U		0.21	1.8	mg/Kg-dry	10	5/22/2013 16:31
Anthracene	U		0.21	1.8	mg/Kg-dry	10	5/22/2013 16:31
Benz(a)anthracene	U		0.21	1.8	mg/Kg-dry	10	5/22/2013 16:31
Benzo(a)pyrene	U		0.21	1.8	mg/Kg-dry	10	5/22/2013 16:31
Benzo(b)fluoranthene	U		0.21	1.8	mg/Kg-dry	10	5/22/2013 16:31
Benzo(k)fluoranthene	U		0.21	1.8	mg/Kg-dry	10	5/22/2013 16:31
Chrysene	U		0.21	1.8	mg/Kg-dry	10	5/22/2013 16:31
Dibenz(a,h)anthracene	U		0.21	1.8	mg/Kg-dry	10	5/22/2013 16:31
Fluoranthene	U		0.21	1.8	mg/Kg-dry	10	5/22/2013 16:31
Fluorene	U		0.21	1.8	mg/Kg-dry	10	5/22/2013 16:31
Naphthalene	U		0.21	1.8	mg/Kg-dry	10	5/22/2013 16:31
Nitrobenzene	U		0.21	1.8	mg/Kg-dry	10	5/22/2013 16:31
Pentachlorophenol	U		0.21	1.8	mg/Kg-dry	10	5/22/2013 16:31
Phenanthrene	U		0.21	1.8	mg/Kg-dry	10	5/22/2013 16:31
Phenol	U		0.74	1.8	mg/Kg-dry	10	5/22/2013 16:31
Pyrene	U		0.21	1.8	mg/Kg-dry	10	5/22/2013 16:31
Surr: 2,4,6-Tribromophenol	208	S		36-126	%REC	10	5/22/2013 16:31
Surr: 2-Fluorobiphenyl	134	S		43-125	%REC	10	5/22/2013 16:31
Surr: 2-Fluorophenol	72.8			37-125	%REC	10	5/22/2013 16:31
Surr: 4-Terphenyl-d14	104			32-125	%REC	10	5/22/2013 16:31
Surr: Nitrobenzene-d5	101			37-125	%REC	10	5/22/2013 16:31
Surr: Phenol-d6	76.0			40-125	%REC	10	5/22/2013 16:31
<b>VOLATILES - SW8260C</b>			Method:SW8260			Analyst: WLR	
Benzene	U		0.00064	0.0054	mg/Kg-dry	1	5/20/2013 12:13
Ethylbenzene	U		0.00097	0.0054	mg/Kg-dry	1	5/20/2013 12:13
Isopropylbenzene	U		0.0011	0.0054	mg/Kg-dry	1	5/20/2013 12:13
m,p-Xylene	U		0.0018	0.011	mg/Kg-dry	1	5/20/2013 12:13
o-Xylene	U		0.0011	0.0054	mg/Kg-dry	1	5/20/2013 12:13

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.



**ALS Environmental**

Date: 23-May-13

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**Sample ID:** SB#5 (2'-3')  
**Collection Date:** 5/14/2013 08:20 AM

**Work Order:** 1305777  
**Lab ID:** 1305777-03  
**Matrix:** SOIL

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
Styrene	U		0.00064	0.0054	mg/Kg-dry	1	5/20/2013 12:13
Toluene	U		0.00075	0.0054	mg/Kg-dry	1	5/20/2013 12:13
Xylenes, Total	U		0.0018	0.011	mg/Kg-dry	1	5/20/2013 12:13
Surr: 1,2-Dichloroethane-d4	86.9			70-128	%REC	1	5/20/2013 12:13
Surr: 4-Bromofluorobenzene	92.8			73-126	%REC	1	5/20/2013 12:13
Surr: Dibromofluoromethane	94.3			71-128	%REC	1	5/20/2013 12:13
Surr: Toluene-d8	105			73-127	%REC	1	5/20/2013 12:13
<b>MOISTURE</b>			Method: <b>SW3550</b>				Analyst: <b>KAH</b>
Percent Moisture	6.90		0.010	0.0100	wt%	1	5/21/2013 14:00

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 23-May-13

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**Sample ID:** SB#8 (2'-3')  
**Collection Date:** 5/14/2013 09:05 AM

**Work Order:** 1305777  
**Lab ID:** 1305777-05  
**Matrix:** SOIL

Analyses	Result	Qual	SDL	ML	Units	Dilution Factor	Date Analyzed
<b>TPH (DRO) - 8015C</b>							
Method: SW8015M				Analyst: RPM			
DRO (>C10 - C28)	650		5.5	19	mg/Kg-dry	10	5/21/2013 18:11
Surr: 2-Fluorobiphenyl	218	S		60-135	%REC	10	5/21/2013 18:11
<b>SEMIVOLATILES</b>							
Method: SW8270				Prep: SW3541 / 5/20/13		Analyst: JLJ	
2,4,5-Trichlorophenol	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 19:11
2,4,6-Trichlorophenol	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 19:11
2,4-Dichlorophenol	U		0.028	0.18	mg/Kg-dry	1	5/21/2013 19:11
2,4-Dimethylphenol	U		0.039	0.18	mg/Kg-dry	1	5/21/2013 19:11
2,4-Dinitrophenol	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 19:11
2-Chlorophenol	U		0.069	0.18	mg/Kg-dry	1	5/21/2013 19:11
Acenaphthene	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 19:11
Anthracene	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 19:11
Benz(a)anthracene	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 19:11
Benzo(a)pyrene	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 19:11
Benzo(b)fluoranthene	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 19:11
Benzo(k)fluoranthene	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 19:11
Chrysene	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 19:11
Dibenz(a,h)anthracene	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 19:11
Fluoranthene	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 19:11
Fluorene	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 19:11
Naphthalene	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 19:11
Nitrobenzene	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 19:11
Pentachlorophenol	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 19:11
Phenanthrene	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 19:11
Phenol	U		0.076	0.18	mg/Kg-dry	1	5/21/2013 19:11
Pyrene	U		0.022	0.18	mg/Kg-dry	1	5/21/2013 19:11
Surr: 2,4,6-Tribromophenol	95.5			36-126	%REC	1	5/21/2013 19:11
Surr: 2-Fluorobiphenyl	67.5			43-125	%REC	1	5/21/2013 19:11
Surr: 2-Fluorophenol	58.5			37-125	%REC	1	5/21/2013 19:11
Surr: 4-Terphenyl-d14	73.1			32-125	%REC	1	5/21/2013 19:11
Surr: Nitrobenzene-d5	70.4			37-125	%REC	1	5/21/2013 19:11
Surr: Phenol-d6	66.7			40-125	%REC	1	5/21/2013 19:11
<b>VOLATILES - SW8260C</b>							
Method: SW8260				Analyst: WLR			
Benzene	U		0.00066	0.0055	mg/Kg-dry	1	5/20/2013 12:37
Ethylbenzene	U		0.0010	0.0055	mg/Kg-dry	1	5/20/2013 12:37
Isopropylbenzene	U		0.0011	0.0055	mg/Kg-dry	1	5/20/2013 12:37
m,p-Xylene	U		0.0019	0.011	mg/Kg-dry	1	5/20/2013 12:37
o-Xylene	U		0.0011	0.0055	mg/Kg-dry	1	5/20/2013 12:37

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental**

Date: 23-May-13

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**Sample ID:** SB#8 (2'-3')  
**Collection Date:** 5/14/2013 09:05 AM

**Work Order:** 1305777  
**Lab ID:** 1305777-05  
**Matrix:** SOIL

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
Styrene	U		0.00066	0.0055	mg/Kg-dry	1	5/20/2013 12:37
Toluene	U		0.00077	0.0055	mg/Kg-dry	1	5/20/2013 12:37
Xylenes, Total	U		0.0019	0.011	mg/Kg-dry	1	5/20/2013 12:37
Surr: 1,2-Dichloroethane-d4	95.2			70-128	%REC	1	5/20/2013 12:37
Surr: 4-Bromofluorobenzene	99.1			73-126	%REC	1	5/20/2013 12:37
Surr: Dibromofluoromethane	96.1			71-128	%REC	1	5/20/2013 12:37
Surr: Toluene-d8	101			73-127	%REC	1	5/20/2013 12:37
<b>MOISTURE</b>			Method: <b>SW3550</b>				Analyst: <b>KAH</b>
Percent Moisture	<b>9.67</b>		<b>0.010</b>	<b>0.0100</b>	wt%	1	5/21/2013 14:00

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 23-May-13

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**Sample ID:** SB#6 (2'-3')  
**Collection Date:** 5/14/2013 09:25 AM

**Work Order:** 1305777  
**Lab ID:** 1305777-07  
**Matrix:** SOIL

Analyses	Result	Qual	SDL	ML	Units	Dilution Factor	Date Analyzed
<b>TPH (DRO) - 8015C</b>			Method:SW8015M			Analyst: RPM	
DRO (>C10 - C28)	140		3.1	11	mg/Kg-dry	5	5/21/2013 18:34
Surr: 2-Fluorobiphenyl	122			60-135	%REC	5	5/21/2013 18:34
<b>SEMIVOLATILES</b>			Method:SW8270			Prep: SW3541 / 5/20/13 Analyst: JLJ	
2,4,5-Trichlorophenol	U		0.25	2.1	mg/Kg-dry	10	5/22/2013 15:23
2,4,6-Trichlorophenol	U		0.25	2.1	mg/Kg-dry	10	5/22/2013 15:23
2,4-Dichlorophenol	U		0.31	2.1	mg/Kg-dry	10	5/22/2013 15:23
2,4-Dimethylphenol	U		0.43	2.1	mg/Kg-dry	10	5/22/2013 15:23
2,4-Dinitrophenol	U		0.25	2.1	mg/Kg-dry	10	5/22/2013 15:23
2-Chlorophenol	U		0.77	2.1	mg/Kg-dry	10	5/22/2013 15:23
Acenaphthene	U		0.25	2.1	mg/Kg-dry	10	5/22/2013 15:23
Anthracene	U		0.25	2.1	mg/Kg-dry	10	5/22/2013 15:23
Benz(a)anthracene	U		0.25	2.1	mg/Kg-dry	10	5/22/2013 15:23
Benzo(a)pyrene	U		0.25	2.1	mg/Kg-dry	10	5/22/2013 15:23
Benzo(b)fluoranthene	U		0.25	2.1	mg/Kg-dry	10	5/22/2013 15:23
Benzo(k)fluoranthene	U		0.25	2.1	mg/Kg-dry	10	5/22/2013 15:23
Chrysene	U		0.25	2.1	mg/Kg-dry	10	5/22/2013 15:23
Dibenz(a,h)anthracene	U		0.25	2.1	mg/Kg-dry	10	5/22/2013 15:23
Fluoranthene	U		0.25	2.1	mg/Kg-dry	10	5/22/2013 15:23
Fluorene	U		0.25	2.1	mg/Kg-dry	10	5/22/2013 15:23
Naphthalene	U		0.25	2.1	mg/Kg-dry	10	5/22/2013 15:23
Nitrobenzene	U		0.25	2.1	mg/Kg-dry	10	5/22/2013 15:23
Pentachlorophenol	U		0.25	2.1	mg/Kg-dry	10	5/22/2013 15:23
Phenanthrene	U		0.25	2.1	mg/Kg-dry	10	5/22/2013 15:23
Phenol	U		0.85	2.1	mg/Kg-dry	10	5/22/2013 15:23
Pyrene	U		0.25	2.1	mg/Kg-dry	10	5/22/2013 15:23
Surr: 2,4,6-Tribromophenol	188	S		36-126	%REC	10	5/22/2013 15:23
Surr: 2-Fluorobiphenyl	108			43-125	%REC	10	5/22/2013 15:23
Surr: 2-Fluorophenol	64.7			37-125	%REC	10	5/22/2013 15:23
Surr: 4-Terphenyl-d14	109			32-125	%REC	10	5/22/2013 15:23
Surr: Nitrobenzene-d5	94.9			37-125	%REC	10	5/22/2013 15:23
Surr: Phenol-d6	70.7			40-125	%REC	10	5/22/2013 15:23
<b>VOLATILES - SW8260C</b>			Method:SW8260			Analyst: WLR	
Benzene	U		0.00075	0.0062	mg/Kg-dry	1	5/20/2013 18:06
Ethylbenzene	U		0.0011	0.0062	mg/Kg-dry	1	5/20/2013 18:06
Isopropylbenzene	U		0.0012	0.0062	mg/Kg-dry	1	5/20/2013 18:06
m,p-Xylene	0.0060	J	0.0021	0.012	mg/Kg-dry	1	5/20/2013 18:06
o-Xylene	0.016		0.0012	0.0062	mg/Kg-dry	1	5/20/2013 18:06

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental**

Date: 23-May-13

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**Sample ID:** SB#6 (2'-3')  
**Collection Date:** 5/14/2013 09:25 AM

**Work Order:** 1305777  
**Lab ID:** 1305777-07  
**Matrix:** SOIL

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
Styrene	U		0.00075	0.0062	mg/Kg-dry	1	5/20/2013 18:06
Toluene	U		0.00087	0.0062	mg/Kg-dry	1	5/20/2013 18:06
<b>Xylenes, Total</b>	<b>0.022</b>		<b>0.0021</b>	<b>0.012</b>	<b>mg/Kg-dry</b>	1	5/20/2013 18:06
Surr: 1,2-Dichloroethane-d4	98.7			70-128	%REC	1	5/20/2013 18:06
Surr: 4-Bromofluorobenzene	85.1			73-126	%REC	1	5/20/2013 18:06
Surr: Dibromofluoromethane	92.4			71-128	%REC	1	5/20/2013 18:06
Surr: Toluene-d8	105			73-127	%REC	1	5/20/2013 18:06
<b>MOISTURE</b>			Method: <b>SW3550</b>				Analyst: <b>KAH</b>
Percent Moisture	19.6		0.010	0.0100	wt%	1	5/21/2013 14:00

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 23-May-13

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**Sample ID:** SB#9 (2'-3')  
**Collection Date:** 5/14/2013 09:55 AM

**Work Order:** 1305777  
**Lab ID:** 1305777-08  
**Matrix:** SOIL

Analyses	Result	Qual	SDL	ML	Units	Dilution Factor	Date Analyzed
<b>TPH (DRO) - 8015C</b>			Method:SW8015M			Analyst: <b>RPM</b>	
<b>DRO (&gt;C10 - C28)</b>	<b>1,500</b>		<b>30</b>	<b>100</b>	<b>mg/Kg-dry</b>	50	5/21/2013 18:58
Surr: 2-Fluorobiphenyl	0	S		60-135	%REC	50	5/21/2013 18:58
<b>SEMIVOLATILES</b>			Method:SW8270			Prep: SW3541 / 5/20/13 Analyst: <b>JLJ</b>	
2,4,5-Trichlorophenol	U		0.024	0.20	mg/Kg-dry	1	5/21/2013 22:11
2,4,6-Trichlorophenol	U		0.024	0.20	mg/Kg-dry	1	5/21/2013 22:11
2,4-Dichlorophenol	U		0.030	0.20	mg/Kg-dry	1	5/21/2013 22:11
2,4-Dimethylphenol	U		0.042	0.20	mg/Kg-dry	1	5/21/2013 22:11
2,4-Dinitrophenol	U		0.024	0.20	mg/Kg-dry	1	5/21/2013 22:11
2-Chlorophenol	U		0.074	0.20	mg/Kg-dry	1	5/21/2013 22:11
Acenaphthene	U		0.024	0.20	mg/Kg-dry	1	5/21/2013 22:11
Anthracene	U		0.024	0.20	mg/Kg-dry	1	5/21/2013 22:11
Benz(a)anthracene	U		0.024	0.20	mg/Kg-dry	1	5/21/2013 22:11
Benzo(a)pyrene	U		0.024	0.20	mg/Kg-dry	1	5/21/2013 22:11
Benzo(b)fluoranthene	U		0.024	0.20	mg/Kg-dry	1	5/21/2013 22:11
Benzo(k)fluoranthene	U		0.024	0.20	mg/Kg-dry	1	5/21/2013 22:11
Chrysene	U		0.024	0.20	mg/Kg-dry	1	5/21/2013 22:11
Dibenz(a,h)anthracene	U		0.024	0.20	mg/Kg-dry	1	5/21/2013 22:11
Fluoranthene	U		0.024	0.20	mg/Kg-dry	1	5/21/2013 22:11
Fluorene	U		0.024	0.20	mg/Kg-dry	1	5/21/2013 22:11
Naphthalene	U		0.024	0.20	mg/Kg-dry	1	5/21/2013 22:11
Nitrobenzene	U		0.024	0.20	mg/Kg-dry	1	5/21/2013 22:11
Pentachlorophenol	U		0.024	0.20	mg/Kg-dry	1	5/21/2013 22:11
<b>Phenanthrene</b>	<b>0.066</b>	J	<b>0.024</b>	<b>0.20</b>	<b>mg/Kg-dry</b>	1	5/21/2013 22:11
Phenol	U		0.082	0.20	mg/Kg-dry	1	5/21/2013 22:11
<b>Pyrene</b>	<b>0.068</b>	J	<b>0.024</b>	<b>0.20</b>	<b>mg/Kg-dry</b>	1	5/21/2013 22:11
Surr: 2,4,6-Tribromophenol	70.1			36-126	%REC	1	5/21/2013 22:11
Surr: 2-Fluorobiphenyl	58.8			43-125	%REC	1	5/21/2013 22:11
Surr: 2-Fluorophenol	51.1			37-125	%REC	1	5/21/2013 22:11
Surr: 4-Terphenyl-d14	63.1			32-125	%REC	1	5/21/2013 22:11
Surr: Nitrobenzene-d5	54.7			37-125	%REC	1	5/21/2013 22:11
Surr: Phenol-d6	58.0			40-125	%REC	1	5/21/2013 22:11
<b>VOLATILES - SW8260C</b>			Method:SW8260			Analyst: <b>WLR</b>	
Benzene	U		0.00071	0.0059	mg/Kg-dry	1	5/20/2013 14:57
Ethylbenzene	U		0.0011	0.0059	mg/Kg-dry	1	5/20/2013 14:57
Isopropylbenzene	U		0.0012	0.0059	mg/Kg-dry	1	5/20/2013 14:57
m,p-Xylene	U		0.0020	0.012	mg/Kg-dry	1	5/20/2013 14:57
o-Xylene	U		0.0012	0.0059	mg/Kg-dry	1	5/20/2013 14:57

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental**

Date: 23-May-13

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**Sample ID:** SB#9 (2'-3')  
**Collection Date:** 5/14/2013 09:55 AM

**Work Order:** 1305777  
**Lab ID:** 1305777-08  
**Matrix:** SOIL

Analyses	Result	Qual	SDL	ML	Units	Dilution Factor	Date Analyzed
Styrene	U		0.00071	0.0059	mg/Kg-dry	1	5/20/2013 14:57
Toluene	U		0.00083	0.0059	mg/Kg-dry	1	5/20/2013 14:57
Xylenes, Total	U		0.0020	0.012	mg/Kg-dry	1	5/20/2013 14:57
Surr: 1,2-Dichloroethane-d4	92.2			70-128	%REC	1	5/20/2013 14:57
Surr: 4-Bromofluorobenzene	95.2			73-126	%REC	1	5/20/2013 14:57
Surr: Dibromofluoromethane	94.8			71-128	%REC	1	5/20/2013 14:57
Surr: Toluene-d8	101			73-127	%REC	1	5/20/2013 14:57
<b>MOISTURE</b>			Method: SW3550				Analyst: KAH
Percent Moisture	15.9		0.010	0.0100	wt%	1	5/21/2013 14:00

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 23-May-13

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**Sample ID:** SB#3 (2'-3')  
**Collection Date:** 5/14/2013 01:15 PM

**Work Order:** 1305777  
**Lab ID:** 1305777-09  
**Matrix:** SOIL

Analyses	Result	Qual	SDL	ML	Units	Dilution Factor	Date Analyzed
<b>TPH (DRO) - 8015C</b>			Method:SW8015M			Analyst: RPM	
<b>DRO (&gt;C10 - C28)</b>	<b>3,300</b>		<b>57</b>	<b>190</b>	<b>mg/Kg-dry</b>	100	5/21/2013 17:00
Surr: 2-Fluorobiphenyl	0	S		60-135	%REC	100	5/21/2013 17:00
<b>SEMIVOLATILES</b>			Method:SW8270			Prep: SW3541 / 5/20/13	
						Analyst: JLJ	
2,4,5-Trichlorophenol	U		0.23	1.9	mg/Kg-dry	10	5/22/2013 16:53
2,4,6-Trichlorophenol	U		0.23	1.9	mg/Kg-dry	10	5/22/2013 16:53
2,4-Dichlorophenol	U		0.29	1.9	mg/Kg-dry	10	5/22/2013 16:53
2,4-Dimethylphenol	U		0.40	1.9	mg/Kg-dry	10	5/22/2013 16:53
2,4-Dinitrophenol	U		0.23	1.9	mg/Kg-dry	10	5/22/2013 16:53
2-Chlorophenol	U		0.71	1.9	mg/Kg-dry	10	5/22/2013 16:53
Acenaphthene	U		0.23	1.9	mg/Kg-dry	10	5/22/2013 16:53
Anthracene	U		0.23	1.9	mg/Kg-dry	10	5/22/2013 16:53
Benz(a)anthracene	U		0.23	1.9	mg/Kg-dry	10	5/22/2013 16:53
Benzo(a)pyrene	U		0.23	1.9	mg/Kg-dry	10	5/22/2013 16:53
Benzo(b)fluoranthene	U		0.23	1.9	mg/Kg-dry	10	5/22/2013 16:53
Benzo(k)fluoranthene	U		0.23	1.9	mg/Kg-dry	10	5/22/2013 16:53
Chrysene	U		0.23	1.9	mg/Kg-dry	10	5/22/2013 16:53
Dibenz(a,h)anthracene	U		0.23	1.9	mg/Kg-dry	10	5/22/2013 16:53
<b>Fluoranthene</b>	<b>1.6</b>	<b>J</b>	<b>0.23</b>	<b>1.9</b>	<b>mg/Kg-dry</b>	10	5/22/2013 16:53
Fluorene	U		0.23	1.9	mg/Kg-dry	10	5/22/2013 16:53
Naphthalene	U		0.23	1.9	mg/Kg-dry	10	5/22/2013 16:53
Nitrobenzene	U		0.23	1.9	mg/Kg-dry	10	5/22/2013 16:53
Pentachlorophenol	U		0.23	1.9	mg/Kg-dry	10	5/22/2013 16:53
Phenanthrene	U		0.23	1.9	mg/Kg-dry	10	5/22/2013 16:53
Phenol	U		0.79	1.9	mg/Kg-dry	10	5/22/2013 16:53
<b>Pyrene</b>	<b>1.0</b>	<b>J</b>	<b>0.23</b>	<b>1.9</b>	<b>mg/Kg-dry</b>	10	5/22/2013 16:53
Surr: 2,4,6-Tribromophenol	197	S		36-126	%REC	10	5/22/2013 16:53
Surr: 2-Fluorobiphenyl	118			43-125	%REC	10	5/22/2013 16:53
Surr: 2-Fluorophenol	74.6			37-125	%REC	10	5/22/2013 16:53
Surr: 4-Terphenyl-d14	109			32-125	%REC	10	5/22/2013 16:53
Surr: Nitrobenzene-d5	100			37-125	%REC	10	5/22/2013 16:53
Surr: Phenol-d6	79.1			40-125	%REC	10	5/22/2013 16:53
<b>VOLATILES - SW8260C</b>			Method:SW8260			Analyst: WLR	
Benzene	U		0.00069	0.0057	mg/Kg-dry	1	5/20/2013 15:21
Ethylbenzene	U		0.0010	0.0057	mg/Kg-dry	1	5/20/2013 15:21
Isopropylbenzene	U		0.0011	0.0057	mg/Kg-dry	1	5/20/2013 15:21
m,p-Xylene	U		0.0019	0.011	mg/Kg-dry	1	5/20/2013 15:21
o-Xylene	U		0.0011	0.0057	mg/Kg-dry	1	5/20/2013 15:21

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.



**ALS Environmental**

Date: 23-May-13

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**Sample ID:** SB#3 (2'-3')  
**Collection Date:** 5/14/2013 01:15 PM

**Work Order:** 1305777  
**Lab ID:** 1305777-09  
**Matrix:** SOIL

Analyses	Result	Qual	SDL	ML	Units	Dilution Factor	Date Analyzed
Styrene	U		0.00069	0.0057	mg/Kg-dry	1	5/20/2013 15:21
Toluene	U		0.00080	0.0057	mg/Kg-dry	1	5/20/2013 15:21
Xylenes, Total	U		0.0019	0.011	mg/Kg-dry	1	5/20/2013 15:21
Surr: 1,2-Dichloroethane-d4	94.5			70-128	%REC	1	5/20/2013 15:21
Surr: 4-Bromofluorobenzene	103			73-126	%REC	1	5/20/2013 15:21
Surr: Dibromofluoromethane	95.4			71-128	%REC	1	5/20/2013 15:21
Surr: Toluene-d8	101			73-127	%REC	1	5/20/2013 15:21
<b>MOISTURE</b>			Method: SW3550				Analyst: KAH
Percent Moisture	12.5		0.010	0.0100	wt%	1	5/21/2013 14:00

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 23-May-13

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**Sample ID:** SB#2 (2'-3')  
**Collection Date:** 5/15/2013 07:50 AM

**Work Order:** 1305777  
**Lab ID:** 1305777-10  
**Matrix:** SOIL

Analyses	Result	Qual	SDL	ML	Units	Dilution Factor	Date Analyzed
<b>TPH (DRO) - 8015C</b>							
Method: SW8015M				Prep: SW3541 / 5/20/13		Analyst: RPM	
DRO (>C10 - C28)	5,500		60	200	mg/Kg-dry	100	5/21/2013 17:24
Surr: 2-Fluorobiphenyl	0	S		60-135	%REC	100	5/21/2013 17:24
<b>SEMIVOLATILES</b>							
Method: SW8270				Prep: SW3541 / 5/20/13		Analyst: JLJ	
2,4,5-Trichlorophenol	U		0.24	2.0	mg/Kg-dry	10	5/22/2013 15:46
2,4,6-Trichlorophenol	U		0.24	2.0	mg/Kg-dry	10	5/22/2013 15:46
2,4-Dichlorophenol	U		0.30	2.0	mg/Kg-dry	10	5/22/2013 15:46
2,4-Dimethylphenol	U		0.42	2.0	mg/Kg-dry	10	5/22/2013 15:46
2,4-Dinitrophenol	U		0.24	2.0	mg/Kg-dry	10	5/22/2013 15:46
2-Chlorophenol	U		0.75	2.0	mg/Kg-dry	10	5/22/2013 15:46
Acenaphthene	3.8		0.24	2.0	mg/Kg-dry	10	5/22/2013 15:46
Anthracene	1.6	J	0.24	2.0	mg/Kg-dry	10	5/22/2013 15:46
Benz(a)anthracene	U		0.24	2.0	mg/Kg-dry	10	5/22/2013 15:46
Benzo(a)pyrene	U		0.24	2.0	mg/Kg-dry	10	5/22/2013 15:46
Benzo(b)fluoranthene	U		0.24	2.0	mg/Kg-dry	10	5/22/2013 15:46
Benzo(k)fluoranthene	U		0.24	2.0	mg/Kg-dry	10	5/22/2013 15:46
Chrysene	U		0.24	2.0	mg/Kg-dry	10	5/22/2013 15:46
Dibenz(a,h)anthracene	U		0.24	2.0	mg/Kg-dry	10	5/22/2013 15:46
Fluoranthene	U		0.24	2.0	mg/Kg-dry	10	5/22/2013 15:46
Fluorene	4.9		0.24	2.0	mg/Kg-dry	10	5/22/2013 15:46
Naphthalene	0.93	J	0.24	2.0	mg/Kg-dry	10	5/22/2013 15:46
Nitrobenzene	U		0.24	2.0	mg/Kg-dry	10	5/22/2013 15:46
Pentachlorophenol	U		0.24	2.0	mg/Kg-dry	10	5/22/2013 15:46
Phenanthrene	6.9		0.24	2.0	mg/Kg-dry	10	5/22/2013 15:46
Phenol	U		0.83	2.0	mg/Kg-dry	10	5/22/2013 15:46
Pyrene	2.1		0.24	2.0	mg/Kg-dry	10	5/22/2013 15:46
Surr: 2,4,6-Tribromophenol	192	S		36-126	%REC	10	5/22/2013 15:46
Surr: 2-Fluorobiphenyl	153	S		43-125	%REC	10	5/22/2013 15:46
Surr: 2-Fluorophenol	62.6			37-125	%REC	10	5/22/2013 15:46
Surr: 4-Terphenyl-d14	90.0			32-125	%REC	10	5/22/2013 15:46
Surr: Nitrobenzene-d5	78.6			37-125	%REC	10	5/22/2013 15:46
Surr: Phenol-d6	63.5			40-125	%REC	10	5/22/2013 15:46
<b>VOLATILES - SW8260C</b>							
Method: SW8260				Analyst: WLR			
Benzene	U		0.00073	0.0060	mg/Kg-dry	1	5/20/2013 15:44
Ethylbenzene	U		0.0011	0.0060	mg/Kg-dry	1	5/20/2013 15:44
Isopropylbenzene	U		0.0012	0.0060	mg/Kg-dry	1	5/20/2013 15:44
m,p-Xylene	U		0.0021	0.012	mg/Kg-dry	1	5/20/2013 15:44
o-Xylene	0.054		0.0012	0.0060	mg/Kg-dry	1	5/20/2013 15:44

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 23-May-13

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**Sample ID:** SB#2 (2'-3')  
**Collection Date:** 5/15/2013 07:50 AM

**Work Order:** 1305777  
**Lab ID:** 1305777-10  
**Matrix:** SOIL

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
Styrene	U		0.00073	0.0060	mg/Kg-dry	1	5/20/2013 15:44
Toluene	U		0.00085	0.0060	mg/Kg-dry	1	5/20/2013 15:44
<b>Xylenes, Total</b>	<b>0.054</b>		<b>0.0021</b>	<b>0.012</b>	<b>mg/Kg-dry</b>	1	5/20/2013 15:44
Surr: 1,2-Dichloroethane-d4	93.1			70-128	%REC	1	5/20/2013 15:44
Surr: 4-Bromofluorobenzene	75.1			73-126	%REC	1	5/20/2013 15:44
Surr: Dibromofluoromethane	92.7			71-128	%REC	1	5/20/2013 15:44
Surr: Toluene-d8	112			73-127	%REC	1	5/20/2013 15:44
<b>MOISTURE</b>			Method: <b>SW3550</b>				Analyst: <b>KAH</b>
Percent Moisture	17.3		0.010	0.0100	wt%	1	5/21/2013 15:00

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 23-May-13

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**Sample ID:** Equipment Blank  
**Collection Date:** 5/15/2013 08:40 AM

**Work Order:** 1305777  
**Lab ID:** 1305777-12  
**Matrix:** SOIL

Analyses	Result	Qual	SDL	ML	Units	Dilution Factor	Date Analyzed
<b>TPH (DRO) - 8015C</b>							
			Method: <b>SW8015M</b>		Prep: SW3541 / 5/20/13		Analyst: <b>RPM</b>
DRO (>C10 - C28)	U		0.51	1.7	mg/Kg-dry	1	5/21/2013 03:15
Surr: 2-Fluorobiphenyl	90.6			60-135	%REC	1	5/21/2013 03:15
<b>SEMIVOLATILES</b>							
			Method: <b>SW8270</b>		Prep: SW3541 / 5/20/13		Analyst: <b>JLJ</b>
2,4,5-Trichlorophenol	U		0.020	0.17	mg/Kg-dry	1	5/22/2013 12:39
2,4,6-Trichlorophenol	U		0.020	0.17	mg/Kg-dry	1	5/22/2013 12:39
2,4-Dichlorophenol	U		0.025	0.17	mg/Kg-dry	1	5/22/2013 12:39
2,4-Dimethylphenol	U		0.035	0.17	mg/Kg-dry	1	5/22/2013 12:39
2,4-Dinitrophenol	U		0.020	0.17	mg/Kg-dry	1	5/22/2013 12:39
2-Chlorophenol	U		0.063	0.17	mg/Kg-dry	1	5/22/2013 12:39
Acenaphthene	U		0.020	0.17	mg/Kg-dry	1	5/22/2013 12:39
Anthracene	U		0.020	0.17	mg/Kg-dry	1	5/22/2013 12:39
Benz(a)anthracene	U		0.020	0.17	mg/Kg-dry	1	5/22/2013 12:39
Benzo(a)pyrene	U		0.020	0.17	mg/Kg-dry	1	5/22/2013 12:39
Benzo(b)fluoranthene	U		0.020	0.17	mg/Kg-dry	1	5/22/2013 12:39
Benzo(k)fluoranthene	U		0.020	0.17	mg/Kg-dry	1	5/22/2013 12:39
Chrysene	U		0.020	0.17	mg/Kg-dry	1	5/22/2013 12:39
Dibenz(a,h)anthracene	U		0.020	0.17	mg/Kg-dry	1	5/22/2013 12:39
Fluoranthene	U		0.020	0.17	mg/Kg-dry	1	5/22/2013 12:39
Fluorene	U		0.020	0.17	mg/Kg-dry	1	5/22/2013 12:39
Naphthalene	U		0.020	0.17	mg/Kg-dry	1	5/22/2013 12:39
Nitrobenzene	U		0.020	0.17	mg/Kg-dry	1	5/22/2013 12:39
Pentachlorophenol	U		0.020	0.17	mg/Kg-dry	1	5/22/2013 12:39
Phenanthrene	U		0.020	0.17	mg/Kg-dry	1	5/22/2013 12:39
Phenol	U		0.070	0.17	mg/Kg-dry	1	5/22/2013 12:39
Pyrene	U		0.020	0.17	mg/Kg-dry	1	5/22/2013 12:39
Surr: 2,4,6-Tribromophenol	75.7			36-126	%REC	1	5/22/2013 12:39
Surr: 2-Fluorobiphenyl	76.0			43-125	%REC	1	5/22/2013 12:39
Surr: 2-Fluorophenol	71.8			37-125	%REC	1	5/22/2013 12:39
Surr: 4-Terphenyl-d14	121			32-125	%REC	1	5/22/2013 12:39
Surr: Nitrobenzene-d5	83.9			37-125	%REC	1	5/22/2013 12:39
Surr: Phenol-d6	73.1			40-125	%REC	1	5/22/2013 12:39
<b>VOLATILES - SW8260C</b>							
			Method: <b>SW8260</b>		Analyst: <b>WLR</b>		
Benzene	U		0.00061	0.0051	mg/Kg-dry	1	5/20/2013 10:40
Ethylbenzene	U		0.00091	0.0051	mg/Kg-dry	1	5/20/2013 10:40
Isopropylbenzene	U		0.0010	0.0051	mg/Kg-dry	1	5/20/2013 10:40
m,p-Xylene	U		0.0017	0.010	mg/Kg-dry	1	5/20/2013 10:40
o-Xylene	U		0.0010	0.0051	mg/Kg-dry	1	5/20/2013 10:40

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental**

Date: 23-May-13

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**Sample ID:** Equipment Blank  
**Collection Date:** 5/15/2013 08:40 AM

**Work Order:** 1305777  
**Lab ID:** 1305777-12  
**Matrix:** SOIL

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
Styrene	U		0.00061	0.0051	mg/Kg-dry	1	5/20/2013 10:40
Toluene	U		0.00071	0.0051	mg/Kg-dry	1	5/20/2013 10:40
Xylenes, Total	U		0.0017	0.010	mg/Kg-dry	1	5/20/2013 10:40
Surr: 1,2-Dichloroethane-d4	97.6			70-128	%REC	1	5/20/2013 10:40
Surr: 4-Bromofluorobenzene	97.4			73-126	%REC	1	5/20/2013 10:40
Surr: Dibromofluoromethane	96.4			71-128	%REC	1	5/20/2013 10:40
Surr: Toluene-d8	98.3			73-127	%REC	1	5/20/2013 10:40
<b>MOISTURE</b>			Method: <b>SW3550</b>				Analyst: <b>KAH</b>
Percent Moisture	1.43		0.010	0.0100	wt%	1	5/21/2013 15:00

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 23-May-13

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**Sample ID:** SB#7 (2'-3')  
**Collection Date:** 5/15/2013 09:35 AM

**Work Order:** 1305777  
**Lab ID:** 1305777-13  
**Matrix:** SOIL

Analyses	Result	Qual	SDL	ML	Units	Dilution Factor	Date Analyzed
<b>TPH (DRO) - 8015C</b>							
Method: <b>SW8015M</b>				Prep: SW3541 / 5/20/13		Analyst: <b>RPM</b>	
<b>DRO (&gt;C10 - C28)</b>	<b>3,600</b>		<b>54</b>	<b>180</b>	<b>mg/Kg-dry</b>	100	5/21/2013 17:47
Surr: 2-Fluorobiphenyl	0	S		60-135	%REC	100	5/21/2013 17:47
<b>SEMIVOLATILES</b>							
Method: <b>SW8270</b>				Prep: SW3541 / 5/20/13		Analyst: <b>JLJ</b>	
2,4,5-Trichlorophenol	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:16
2,4,6-Trichlorophenol	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:16
2,4-Dichlorophenol	U		0.27	1.8	mg/Kg-dry	10	5/22/2013 17:16
2,4-Dimethylphenol	U		0.38	1.8	mg/Kg-dry	10	5/22/2013 17:16
2,4-Dinitrophenol	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:16
2-Chlorophenol	U		0.67	1.8	mg/Kg-dry	10	5/22/2013 17:16
Acenaphthene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:16
Anthracene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:16
Benz(a)anthracene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:16
Benzo(a)pyrene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:16
Benzo(b)fluoranthene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:16
Benzo(k)fluoranthene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:16
Chrysene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:16
Dibenz(a,h)anthracene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:16
Fluoranthene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:16
Fluorene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:16
Naphthalene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:16
Nitrobenzene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:16
Pentachlorophenol	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:16
Phenanthrene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:16
Phenol	U		0.75	1.8	mg/Kg-dry	10	5/22/2013 17:16
<b>Pyrene</b>	<b>0.94</b>	J	<b>0.22</b>	<b>1.8</b>	<b>mg/Kg-dry</b>	10	5/22/2013 17:16
Surr: 2,4,6-Tribromophenol	185	S		36-126	%REC	10	5/22/2013 17:16
Surr: 2-Fluorobiphenyl	116			43-125	%REC	10	5/22/2013 17:16
Surr: 2-Fluorophenol	73.4			37-125	%REC	10	5/22/2013 17:16
Surr: 4-Terphenyl-d14	102			32-125	%REC	10	5/22/2013 17:16
Surr: Nitrobenzene-d5	96.5			37-125	%REC	10	5/22/2013 17:16
Surr: Phenol-d6	79.2			40-125	%REC	10	5/22/2013 17:16
<b>VOLATILES - SW8260C</b>							
Method: <b>SW8260</b>				Analyst: <b>WLR</b>			
Benzene	U		0.00065	0.0054	mg/Kg-dry	1	5/20/2013 16:08
Ethylbenzene	U		0.00098	0.0054	mg/Kg-dry	1	5/20/2013 16:08
Isopropylbenzene	U		0.0011	0.0054	mg/Kg-dry	1	5/20/2013 16:08
m,p-Xylene	U		0.0018	0.011	mg/Kg-dry	1	5/20/2013 16:08
o-Xylene	U		0.0011	0.0054	mg/Kg-dry	1	5/20/2013 16:08

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental**

Date: 23-May-13

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**Sample ID:** SB#7 (2'-3')  
**Collection Date:** 5/15/2013 09:35 AM

**Work Order:** 1305777  
**Lab ID:** 1305777-13  
**Matrix:** SOIL

Analyses	Result	Qual	SDL	MQL	Units	Dilution Factor	Date Analyzed
Styrene	U		0.00065	0.0054	mg/Kg-dry	1	5/20/2013 16:08
Toluene	U		0.00076	0.0054	mg/Kg-dry	1	5/20/2013 16:08
Xylenes, Total	U		0.0018	0.011	mg/Kg-dry	1	5/20/2013 16:08
Surr: 1,2-Dichloroethane-d4	98.3			70-128	%REC	1	5/20/2013 16:08
Surr: 4-Bromofluorobenzene	88.7			73-126	%REC	1	5/20/2013 16:08
Surr: Dibromofluoromethane	96.4			71-128	%REC	1	5/20/2013 16:08
Surr: Toluene-d8	103			73-127	%REC	1	5/20/2013 16:08
<b>MOISTURE</b>			Method: <b>SW3550</b>				Analyst: <b>KAH</b>
Percent Moisture	<b>8.09</b>		<b>0.010</b>	<b>0.0100</b>	wt%	1	5/21/2013 15:00

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 23-May-13

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**Sample ID:** SB#10 (2'-3')  
**Collection Date:** 5/15/2013 10:25 AM

**Work Order:** 1305777  
**Lab ID:** 1305777-14  
**Matrix:** SOIL

Analyses	Result	Qual	SDL	ML	Units	Dilution Factor	Date Analyzed
<b>TPH (DRO) - 8015C</b>							
Method: SW8015M				Prep: SW3541 / 5/20/13		Analyst: RPM	
<b>DRO (&gt;C10 - C28)</b>	<b>730</b>		<b>11</b>	<b>38</b>	<b>mg/Kg-dry</b>	20	5/21/2013 18:11
Surr: 2-Fluorobiphenyl	0	S		60-135	%REC	20	5/21/2013 18:11
<b>SEMIVOLATILES</b>							
Method: SW8270				Prep: SW3541 / 5/20/13		Analyst: JLJ	
2,4,5-Trichlorophenol	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:38
2,4,6-Trichlorophenol	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:38
2,4-Dichlorophenol	U		0.28	1.8	mg/Kg-dry	10	5/22/2013 17:38
2,4-Dimethylphenol	U		0.39	1.8	mg/Kg-dry	10	5/22/2013 17:38
2,4-Dinitrophenol	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:38
2-Chlorophenol	U		0.68	1.8	mg/Kg-dry	10	5/22/2013 17:38
<b>Acenaphthene</b>	<b>2.0</b>		<b>0.22</b>	<b>1.8</b>	<b>mg/Kg-dry</b>	10	5/22/2013 17:38
<b>Anthracene</b>	<b>0.87</b>	J	<b>0.22</b>	<b>1.8</b>	<b>mg/Kg-dry</b>	10	5/22/2013 17:38
Benz(a)anthracene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:38
Benzo(a)pyrene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:38
Benzo(b)fluoranthene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:38
Benzo(k)fluoranthene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:38
Chrysene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:38
Dibenz(a,h)anthracene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:38
<b>Fluoranthene</b>	<b>0.41</b>	J	<b>0.22</b>	<b>1.8</b>	<b>mg/Kg-dry</b>	10	5/22/2013 17:38
Fluorene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:38
<b>Naphthalene</b>	<b>1.5</b>	J	<b>0.22</b>	<b>1.8</b>	<b>mg/Kg-dry</b>	10	5/22/2013 17:38
Nitrobenzene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:38
Pentachlorophenol	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 17:38
<b>Phenanthrene</b>	<b>8.0</b>		<b>0.22</b>	<b>1.8</b>	<b>mg/Kg-dry</b>	10	5/22/2013 17:38
Phenol	U		0.76	1.8	mg/Kg-dry	10	5/22/2013 17:38
<b>Pyrene</b>	<b>1.3</b>	J	<b>0.22</b>	<b>1.8</b>	<b>mg/Kg-dry</b>	10	5/22/2013 17:38
Surr: 2,4,6-Tribromophenol	157	S		36-126	%REC	10	5/22/2013 17:38
Surr: 2-Fluorobiphenyl	87.8			43-125	%REC	10	5/22/2013 17:38
Surr: 2-Fluorophenol	65.4			37-125	%REC	10	5/22/2013 17:38
Surr: 4-Terphenyl-d14	94.5			32-125	%REC	10	5/22/2013 17:38
Surr: Nitrobenzene-d5	66.4			37-125	%REC	10	5/22/2013 17:38
Surr: Phenol-d6	62.8			40-125	%REC	10	5/22/2013 17:38
<b>VOLATILES - SW8260C</b>							
Method: SW8260				Analyst: WLR			
<b>Benzene</b>	<b>0.0033</b>	J	<b>0.00066</b>	<b>0.0055</b>	<b>mg/Kg-dry</b>	1	5/20/2013 16:31
Ethylbenzene	U		0.0010	0.0055	mg/Kg-dry	1	5/20/2013 16:31
Isopropylbenzene	U		0.0011	0.0055	mg/Kg-dry	1	5/20/2013 16:31
<b>m,p-Xylene</b>	<b>0.047</b>		<b>0.0019</b>	<b>0.011</b>	<b>mg/Kg-dry</b>	1	5/20/2013 16:31
<b>o-Xylene</b>	<b>0.11</b>		<b>0.0011</b>	<b>0.0055</b>	<b>mg/Kg-dry</b>	1	5/20/2013 16:31

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.



**ALS Environmental**

Date: 23-May-13

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**Sample ID:** SB#10 (2'-3')  
**Collection Date:** 5/15/2013 10:25 AM

**Work Order:** 1305777  
**Lab ID:** 1305777-14  
**Matrix:** SOIL

Analyses	Result	Qual	SDL	ML	Units	Dilution Factor	Date Analyzed
Styrene	U		0.00066	0.0055	mg/Kg-dry	1	5/20/2013 16:31
Toluene	U		0.00077	0.0055	mg/Kg-dry	1	5/20/2013 16:31
<b>Xylenes, Total</b>	<b>0.16</b>		<b>0.0019</b>	<b>0.011</b>	<b>mg/Kg-dry</b>	1	5/20/2013 16:31
Surr: 1,2-Dichloroethane-d4	95.4			70-128	%REC	1	5/20/2013 16:31
Surr: 4-Bromofluorobenzene	81.6			73-126	%REC	1	5/20/2013 16:31
Surr: Dibromofluoromethane	91.4			71-128	%REC	1	5/20/2013 16:31
Surr: Toluene-d8	110			73-127	%REC	1	5/20/2013 16:31
<b>MOISTURE</b>			Method: SW3550				Analyst: KAH
Percent Moisture	9.67		0.010	0.0100	wt%	1	5/21/2013 15:00

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 23-May-13

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**Sample ID:** SB#4 (2'-3')  
**Collection Date:** 5/15/2013 11:19 AM

**Work Order:** 1305777  
**Lab ID:** 1305777-15  
**Matrix:** SOIL

Analyses	Result	Qual	SDL	ML	Units	Dilution Factor	Date Analyzed
<b>TPH (DRO) - 8015C</b>							
Method: SW8015M				Prep: SW3541 / 5/20/13		Analyst: RPM	
<b>DRO (&gt;C10 - C28)</b>	<b>6,300</b>		<b>110</b>	<b>380</b>	<b>mg/Kg-dry</b>	200	5/21/2013 18:34
Surr: 2-Fluorobiphenyl	0	S		60-135	%REC	200	5/21/2013 18:34
<b>SEMIVOLATILES</b>							
Method: SW8270				Prep: SW3541 / 5/20/13		Analyst: JLJ	
2,4,5-Trichlorophenol	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 16:08
2,4,6-Trichlorophenol	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 16:08
2,4-Dichlorophenol	U		0.28	1.8	mg/Kg-dry	10	5/22/2013 16:08
2,4-Dimethylphenol	U		0.39	1.8	mg/Kg-dry	10	5/22/2013 16:08
2,4-Dinitrophenol	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 16:08
2-Chlorophenol	U		0.69	1.8	mg/Kg-dry	10	5/22/2013 16:08
Acenaphthene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 16:08
Anthracene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 16:08
Benz(a)anthracene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 16:08
Benzo(a)pyrene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 16:08
Benzo(b)fluoranthene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 16:08
Benzo(k)fluoranthene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 16:08
Chrysene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 16:08
Dibenz(a,h)anthracene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 16:08
Fluoranthene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 16:08
Fluorene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 16:08
<b>Naphthalene</b>	<b>2.7</b>		<b>0.22</b>	<b>1.8</b>	<b>mg/Kg-dry</b>	10	5/22/2013 16:08
Nitrobenzene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 16:08
Pentachlorophenol	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 16:08
<b>Phenanthrene</b>	<b>0.89</b>	J	<b>0.22</b>	<b>1.8</b>	<b>mg/Kg-dry</b>	10	5/22/2013 16:08
Phenol	U		0.76	1.8	mg/Kg-dry	10	5/22/2013 16:08
Pyrene	U		0.22	1.8	mg/Kg-dry	10	5/22/2013 16:08
Surr: 2,4,6-Tribromophenol	231	S		36-126	%REC	10	5/22/2013 16:08
Surr: 2-Fluorobiphenyl	136	S		43-125	%REC	10	5/22/2013 16:08
Surr: 2-Fluorophenol	88.4			37-125	%REC	10	5/22/2013 16:08
Surr: 4-Terphenyl-d14	104			32-125	%REC	10	5/22/2013 16:08
Surr: Nitrobenzene-d5	104			37-125	%REC	10	5/22/2013 16:08
Surr: Phenol-d6	95.1			40-125	%REC	10	5/22/2013 16:08
<b>VOLATILES - SW8260C</b>							
Method: SW8260				Analyst: WLR			
<b>Benzene</b>	<b>0.0043</b>	J	<b>0.00066</b>	<b>0.0055</b>	<b>mg/Kg-dry</b>	1	5/20/2013 16:55
<b>Ethylbenzene</b>	<b>0.13</b>		<b>0.0010</b>	<b>0.0055</b>	<b>mg/Kg-dry</b>	1	5/20/2013 16:55
<b>Isopropylbenzene</b>	<b>0.14</b>		<b>0.0011</b>	<b>0.0055</b>	<b>mg/Kg-dry</b>	1	5/20/2013 16:55
<b>m,p-Xylene</b>	<b>1.7</b>		<b>0.019</b>	<b>0.11</b>	<b>mg/Kg-dry</b>	10	5/21/2013 11:09
<b>o-Xylene</b>	<b>0.93</b>		<b>0.011</b>	<b>0.055</b>	<b>mg/Kg-dry</b>	10	5/21/2013 11:09

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 23-May-13

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**Sample ID:** SB#4 (2'-3')  
**Collection Date:** 5/15/2013 11:19 AM

**Work Order:** 1305777  
**Lab ID:** 1305777-15  
**Matrix:** SOIL

Analyses	Result	Qual	SDL	ML	Units	Dilution Factor	Date Analyzed
Styrene	U		0.00066	0.0055	mg/Kg-dry	1	5/20/2013 16:55
<b>Toluene</b>	<b>0.0069</b>		<b>0.00078</b>	<b>0.0055</b>	<b>mg/Kg-dry</b>	1	5/20/2013 16:55
<b>Xylenes, Total</b>	<b>2.6</b>		<b>0.019</b>	<b>0.11</b>	<b>mg/Kg-dry</b>	10	5/21/2013 11:09
Surr: 1,2-Dichloroethane-d4	90.6			70-128	%REC	1	5/20/2013 16:55
Surr: 1,2-Dichloroethane-d4	88.2			70-128	%REC	10	5/21/2013 11:09
Surr: 4-Bromofluorobenzene	91.4			73-126	%REC	1	5/20/2013 16:55
Surr: 4-Bromofluorobenzene	83.1			73-126	%REC	10	5/21/2013 11:09
Surr: Dibromofluoromethane	93.7			71-128	%REC	1	5/20/2013 16:55
Surr: Dibromofluoromethane	93.7			71-128	%REC	10	5/21/2013 11:09
Surr: Toluene-d8	122			73-127	%REC	1	5/20/2013 16:55
Surr: Toluene-d8	102			73-127	%REC	10	5/21/2013 11:09
<b>MOISTURE</b>			Method: SW3550				Analyst: KAH
Percent Moisture	9.72		0.010	0.0100	wt%	1	5/21/2013 15:00

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental**

Date: 23-May-13

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**Sample ID:** Trip Blank - Soil  
**Collection Date:** 5/14/2013

**Work Order:** 1305777  
**Lab ID:** 1305777-16  
**Matrix:** SOIL

Analyses	Result	Qual	SDL	SQL	Units	Dilution Factor	Date Analyzed
<b>VOLATILES - SW8260C</b>			Method: <b>SW8260</b>			Analyst: <b>WLR</b>	
Benzene	U		0.00060	0.0050	mg/Kg	1	5/20/2013 11:03
Ethylbenzene	U		0.00090	0.0050	mg/Kg	1	5/20/2013 11:03
Isopropylbenzene	U		0.0010	0.0050	mg/Kg	1	5/20/2013 11:03
m,p-Xylene	U		0.0017	0.010	mg/Kg	1	5/20/2013 11:03
o-Xylene	U		0.0010	0.0050	mg/Kg	1	5/20/2013 11:03
Styrene	U		0.00060	0.0050	mg/Kg	1	5/20/2013 11:03
<b>Toluene</b>	<b>0.00074</b>	<b>J</b>	<b>0.00070</b>	<b>0.0050</b>	<b>mg/Kg</b>	1	5/20/2013 11:03
Xylenes, Total	U		0.0017	0.010	mg/Kg	1	5/20/2013 11:03
Surr: 1,2-Dichloroethane-d4	94.7			70-128	%REC	1	5/20/2013 11:03
Surr: 4-Bromofluorobenzene	98.1			73-126	%REC	1	5/20/2013 11:03
Surr: Dibromofluoromethane	95.5			71-128	%REC	1	5/20/2013 11:03
Surr: Toluene-d8	98.4			73-127	%REC	1	5/20/2013 11:03

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

Work Order: 1305777  
 Client: Environmental Resources Management  
 Project: Gallup NM # PN 0097134

# DATES REPORT

Sample ID	Client Sample ID	Matrix	Collection Date	TCLP Date	Prep Date	Analysis Date
<b><u>Batch ID 70112A</u>      <u>Test Name: TPH (DRO) - 8015C</u></b>						
1305777-01B	SB#1 (2'-3')	Soil	5/14/2013 7:50:00 AM		5/19/2013 11:30 AM	5/21/2013 05:00 PM
1305777-02B	SB#11 (2'-3')		5/14/2013 3:00:00 PM		5/19/2013 11:30 AM	5/21/2013 05:24 PM
1305777-03B	SB#5 (2'-3')		5/14/2013 8:20:00 AM		5/19/2013 11:30 AM	5/21/2013 05:47 PM
1305777-05B	SB#8 (2'-3')		5/14/2013 9:05:00 AM		5/19/2013 11:30 AM	5/21/2013 06:11 PM
1305777-07B	SB#6 (2'-3')		5/14/2013 9:25:00 AM		5/19/2013 11:30 AM	5/21/2013 06:34 PM
1305777-08B	SB#9 (2'-3')		5/14/2013 9:55:00 AM		5/19/2013 11:30 AM	5/21/2013 06:58 PM
1305777-09B	SB#3 (2'-3')		5/14/2013 1:15:00 PM		5/19/2013 11:30 AM	5/21/2013 05:00 PM
<b><u>Batch ID 70114</u>      <u>Test Name: Semivolatiles</u></b>						
1305777-01B	SB#1 (2'-3')	Soil	5/14/2013 7:50:00 AM		5/20/2013 09:00 AM	5/22/2013 02:39 PM
1305777-02B	SB#11 (2'-3')		5/14/2013 3:00:00 PM		5/20/2013 09:00 AM	5/21/2013 06:49 PM
1305777-03B	SB#5 (2'-3')		5/14/2013 8:20:00 AM		5/20/2013 09:00 AM	5/22/2013 04:31 PM
1305777-05B	SB#8 (2'-3')		5/14/2013 9:05:00 AM		5/20/2013 09:00 AM	5/21/2013 07:11 PM
1305777-07B	SB#6 (2'-3')		5/14/2013 9:25:00 AM		5/20/2013 09:00 AM	5/22/2013 03:23 PM
1305777-08B	SB#9 (2'-3')		5/14/2013 9:55:00 AM		5/20/2013 09:00 AM	5/21/2013 10:11 PM
1305777-09B	SB#3 (2'-3')		5/14/2013 1:15:00 PM		5/20/2013 09:00 AM	5/22/2013 04:53 PM
1305777-10B	SB#2 (2'-3')		5/15/2013 7:50:00 AM		5/20/2013 09:00 AM	5/22/2013 03:46 PM
1305777-12B	Equipment Blank		5/15/2013 8:40:00 AM		5/20/2013 09:00 AM	5/22/2013 12:39 PM
1305777-13B	SB#7 (2'-3')		5/15/2013 9:35:00 AM		5/20/2013 09:00 AM	5/22/2013 05:16 PM
1305777-14B	SB#10 (2'-3')		5/15/2013 10:25:00 AM		5/20/2013 09:00 AM	5/22/2013 05:38 PM
1305777-15B	SB#4 (2'-3')		5/15/2013 11:19:00 AM		5/20/2013 09:00 AM	5/22/2013 04:08 PM

**Work Order:** 1305777  
**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134

**DATES REPORT**

Sample ID	Client Sample ID	Matrix	Collection Date	TCLP Date	Prep Date	Analysis Date
<b><u>Batch ID</u> 70124</b>		<b><u>Test Name:</u> TPH (DRO) - 8015C</b>				
1305777-10B	SB#2 (2'-3')	Soil	5/15/2013 7:50:00 AM		5/20/2013 10:00 AM	5/21/2013 05:24 PM
1305777-12B	Equipment Blank		5/15/2013 8:40:00 AM		5/20/2013 10:00 AM	5/21/2013 03:15 AM
1305777-13B	SB#7 (2'-3')		5/15/2013 9:35:00 AM		5/20/2013 10:00 AM	5/21/2013 05:47 PM
1305777-14B	SB#10 (2'-3')		5/15/2013 10:25:00 AM		5/20/2013 10:00 AM	5/21/2013 06:11 PM
1305777-15B	SB#4 (2'-3')		5/15/2013 11:19:00 AM		5/20/2013 10:00 AM	5/21/2013 06:34 PM
<b><u>Batch ID</u> R147609</b>		<b><u>Test Name:</u> Volatiles - SW8260C</b>				
1305777-01A	SB#1 (2'-3')	Soil	5/14/2013 7:50:00 AM			5/20/2013 11:26 AM
1305777-02A	SB#11 (2'-3')		5/14/2013 3:00:00 PM			5/20/2013 11:50 AM
1305777-03A	SB#5 (2'-3')		5/14/2013 8:20:00 AM			5/20/2013 12:13 PM
1305777-05A	SB#8 (2'-3')		5/14/2013 9:05:00 AM			5/20/2013 12:37 PM
1305777-07A	SB#6 (2'-3')		5/14/2013 9:25:00 AM			5/20/2013 06:06 PM
1305777-08A	SB#9 (2'-3')		5/14/2013 9:55:00 AM			5/20/2013 02:57 PM
1305777-09A	SB#3 (2'-3')		5/14/2013 1:15:00 PM			5/20/2013 03:21 PM
1305777-10A	SB#2 (2'-3')		5/15/2013 7:50:00 AM			5/20/2013 03:44 PM
1305777-12A	Equipment Blank		5/15/2013 8:40:00 AM			5/20/2013 10:40 AM
1305777-13A	SB#7 (2'-3')		5/15/2013 9:35:00 AM			5/20/2013 04:08 PM
1305777-14A	SB#10 (2'-3')		5/15/2013 10:25:00 AM			5/20/2013 04:31 PM
1305777-15A	SB#4 (2'-3')		5/15/2013 11:19:00 AM			5/20/2013 04:55 PM
1305777-16A	Trip Blank - Soil		5/14/2013			5/20/2013 11:03 AM
<b><u>Batch ID</u> R147658</b>		<b><u>Test Name:</u> Volatiles - SW8260C</b>				
1305777-15A	SB#4 (2'-3')	Soil	5/15/2013 11:19:00 AM			5/21/2013 11:09 AM

**Work Order:** 1305777  
**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134

**DATES REPORT**

Sample ID	Client Sample ID	Matrix	Collection Date	TCLP Date	Prep Date	Analysis Date
<b><u>Batch ID R147725</u>    <u>Test Name: Moisture</u></b>						
1305777-01B	SB#1 (2'-3')	Soil	5/14/2013 7:50:00 AM			5/21/2013 02:00 PM
1305777-02B	SB#11 (2'-3')		5/14/2013 3:00:00 PM			5/21/2013 02:00 PM
1305777-03B	SB#5 (2'-3')		5/14/2013 8:20:00 AM			5/21/2013 02:00 PM
1305777-05B	SB#8 (2'-3')		5/14/2013 9:05:00 AM			5/21/2013 02:00 PM
1305777-07B	SB#6 (2'-3')		5/14/2013 9:25:00 AM			5/21/2013 02:00 PM
1305777-08B	SB#9 (2'-3')		5/14/2013 9:55:00 AM			5/21/2013 02:00 PM
1305777-09B	SB#3 (2'-3')		5/14/2013 1:15:00 PM			5/21/2013 02:00 PM
<b><u>Batch ID R147733</u>    <u>Test Name: Moisture</u></b>						
1305777-10B	SB#2 (2'-3')	Soil	5/15/2013 7:50:00 AM			5/21/2013 03:00 PM
1305777-12B	Equipment Blank		5/15/2013 8:40:00 AM			5/21/2013 03:00 PM
1305777-13B	SB#7 (2'-3')		5/15/2013 9:35:00 AM			5/21/2013 03:00 PM
1305777-14B	SB#10 (2'-3')		5/15/2013 10:25:00 AM			5/21/2013 03:00 PM
1305777-15B	SB#4 (2'-3')		5/15/2013 11:19:00 AM			5/21/2013 03:00 PM

**WorkOrder:** 1305777  
**InstrumentID:** Balance1  
**Test Code:** MOIST\_SW3550  
**Test Number:** SW3550  
**Test Name:** Moisture

**METHOD DETECTION /  
REPORTING LIMITS**

**Matrix:** Solid

**Units:** wt%

Type	Analyte	CAS	DCS	MDL	Unadjusted MQL
A	Percent Moisture	MOIST	0	0.010	0.010



WorkOrder: 1305777  
InstrumentID: FID-7  
Test Code: 8015M\_DRO\_S  
Test Number: SW8015M  
Test Name: TPH (DRO) - 8015C

**METHOD DETECTION /  
REPORTING LIMITS**

Matrix: Solid

Units: mg/Kg

Type	Analyte	CAS	DCS	MDL	Unadjusted MQL
A	DRO (>C10 - C28)	TPHDIESEL	0.47	0.50	1.7
S	Surr: 2-Fluorobiphenyl	321-60-8	0	0	0

WorkOrder: 1305777  
InstrumentID: FID-8  
Test Code: 8015M\_DRO\_S  
Test Number: SW8015M  
Test Name: TPH (DRO) - 8015C

**METHOD DETECTION /  
REPORTING LIMITS**

Matrix: Solid

Units: mg/Kg

Type	Analyte	CAS	DCS	MDL	Unadjusted MQL
A	DRO (>C10 - C28)	TPHDIESEL	0.56	0.50	1.7
S	Surr: 2-Fluorobiphenyl	321-60-8	0	0	0

WorkOrder: 1305777

InstrumentID: SV-3

Test Code: 8270\_S

Test Number: SW8270

Test Name: Semivolatiles

**METHOD DETECTION /  
REPORTING LIMITS**

Matrix: Solid

Units: mg/Kg

Type	Analyte	CAS	DCS	MDL	Unadjusted MQL
A	2,4,5-Trichlorophenol	95-95-4	0.075	0.020	0.17
A	2,4,6-Trichlorophenol	88-06-2	0.071	0.020	0.17
A	2,4-Dichlorophenol	120-83-2	0.071	0.025	0.17
A	2,4-Dimethylphenol	105-67-9	0.074	0.035	0.17
A	2,4-Dinitrophenol	51-28-5	0.069	0.020	0.17
A	2-Chlorophenol	95-57-8	0.070	0.062	0.17
A	Acenaphthene	83-32-9	0.077	0.020	0.17
A	Anthracene	120-12-7	0.083	0.020	0.17
A	Benz(a)anthracene	56-55-3	0.082	0.020	0.17
A	Benzo(a)pyrene	50-32-8	0.075	0.020	0.17
A	Benzo(b)fluoranthene	205-99-2	0.060	0.020	0.17
A	Benzo(k)fluoranthene	207-08-9	0.10	0.020	0.17
A	Chrysene	218-01-9	0.084	0.020	0.17
A	Dibenz(a,h)anthracene	53-70-3	0.074	0.020	0.17
A	Fluoranthene	206-44-0	0.085	0.020	0.17
A	Fluorene	86-73-7	0.079	0.020	0.17
A	Naphthalene	91-20-3	0.077	0.020	0.17
A	Nitrobenzene	98-95-3	0.081	0.020	0.17
A	Pentachlorophenol	87-86-5	0.064	0.020	0.17
A	Phenanthrene	85-01-8	0.081	0.020	0.17
A	Phenol	108-95-2	0.063	0.069	0.17
A	Pyrene	129-00-0	0.076	0.020	0.17
S	Surr: 2,4,6-Tribromophenol	118-79-6	0	0	0.17
S	Surr: 2-Fluorobiphenyl	321-60-8	0	0	0.17
S	Surr: 2-Fluorophenol	367-12-4	0	0	0.17
S	Surr: 4-Terphenyl-d14	1718-51-0	0	0	0.17
S	Surr: Nitrobenzene-d5	4165-60-0	0	0	0.17
s	Surr: Phenol-d6	13127-88-3	0	0	0.17

WorkOrder: 1305777

InstrumentID: SV-5

Test Code: 8270\_S

Test Number: SW8270

Test Name: Semivolatiles

**METHOD DETECTION /  
REPORTING LIMITS**

Matrix: Solid

Units: mg/Kg

Type	Analyte	CAS	DCS	MDL	Unadjusted MQL
A	2,4,5-Trichlorophenol	95-95-4	0.069	0.020	0.17
A	2,4,6-Trichlorophenol	88-06-2	0.066	0.020	0.17
A	2,4-Dichlorophenol	120-83-2	0.071	0.025	0.17
A	2,4-Dimethylphenol	105-67-9	0.071	0.035	0.17
A	2,4-Dinitrophenol	51-28-5	0.041	0.020	0.17
A	2-Chlorophenol	95-57-8	0.071	0.062	0.17
A	Acenaphthene	83-32-9	0.073	0.020	0.17
A	Anthracene	120-12-7	0.076	0.020	0.17
A	Benz(a)anthracene	56-55-3	0.077	0.020	0.17
A	Benzo(a)pyrene	50-32-8	0.066	0.020	0.17
A	Benzo(b)fluoranthene	205-99-2	0.062	0.020	0.17
A	Benzo(k)fluoranthene	207-08-9	0.087	0.020	0.17
A	Chrysene	218-01-9	0.079	0.020	0.17
A	Dibenz(a,h)anthracene	53-70-3	0.066	0.020	0.17
A	Fluoranthene	206-44-0	0.071	0.020	0.17
A	Fluorene	86-73-7	0.074	0.020	0.17
A	Naphthalene	91-20-3	0.075	0.020	0.17
A	Nitrobenzene	98-95-3	0.079	0.020	0.17
A	Pentachlorophenol	87-86-5	0.056	0.020	0.17
A	Phenanthrene	85-01-8	0.076	0.020	0.17
A	Phenol	108-95-2	0.069	0.069	0.17
A	Pyrene	129-00-0	0.077	0.020	0.17
S	Surr: 2,4,6-Tribromophenol	118-79-6	0	0	0.17
S	Surr: 2-Fluorobiphenyl	321-60-8	0	0	0.17
S	Surr: 2-Fluorophenol	367-12-4	0	0	0.17
S	Surr: 4-Terphenyl-d14	1718-51-0	0	0	0.17
S	Surr: Nitrobenzene-d5	4165-60-0	0	0	0.17
s	Surr: Phenol-d6	13127-88-3	0	0	0.17

WorkOrder: 1305777

InstrumentID: VOA5

Test Code: 8260\_S

Test Number: SW8260

Test Name: Volatiles - SW8260C

**METHOD DETECTION /  
REPORTING LIMITS**

Matrix: Solid

Units: mg/Kg

Type	Analyte	CAS	DCS	MDL	Unadjusted MQL
A	Benzene	71-43-2	0.0010	0.00060	0.0050
A	Ethylbenzene	100-41-4	0.0010	0.00090	0.0050
A	Isopropylbenzene	98-82-8	0.0010	0.0010	0.0050
A	m,p-Xylene	179601-23-1	0.0021	0.0017	0.010
A	o-Xylene	95-47-6	0.0010	0.0010	0.0050
A	Styrene	100-42-5	0.0010	0.00060	0.0050
A	Toluene	108-88-3	0.0011	0.00070	0.0050
M	Xylenes, Total	1330-20-7	0.0031	0.0017	0.010
S	Surr: 1,2-Dichloroethane-d4	17060-07-0	0	0	0
S	Surr: 4-Bromofluorobenzene	460-00-4	0	0	0
S	Surr: Dibromofluoromethane	1868-53-7	0	0	0
S	Surr: Toluene-d8	2037-26-5	0	0	0

# ALS Environmental

Date: 23-May-13

**Client:** Environmental Resources Management  
**Work Order:** 1305777  
**Project:** Gallup NM # PN 0097134

## QC BATCH REPORT

Batch ID: **70112A** Instrument ID **FID-7** Method: **SW8015M**

<b>MBLK</b>	Sample ID: <b>FBLKS3-130519-70112A</b>					Units: <b>mg/Kg</b>	Analysis Date: <b>5/20/2013 08:58 PM</b>			
Client ID:	Run ID: <b>FID-7_130519B</b>					SeqNo: <b>3225712</b>	Prep Date: <b>5/19/2013</b>		DF: <b>1</b>	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (>C10 - C28)	U	1.7								
<i>Surr: 2-Fluorobiphenyl</i>	3.449	0	3.3	0	105	60-135	0			

<b>LCS</b>	Sample ID: <b>FLCSS3-130519-70112A</b>					Units: <b>mg/Kg</b>	Analysis Date: <b>5/20/2013 09:22 PM</b>			
Client ID:	Run ID: <b>FID-7_130519B</b>					SeqNo: <b>3225713</b>	Prep Date: <b>5/19/2013</b>		DF: <b>1</b>	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (>C10 - C28)	33.96	1.7	33.3	0	102	70-130				
<i>Surr: 2-Fluorobiphenyl</i>	3.583	0	3.3	0	109	60-135	0			

<b>MS</b>	Sample ID: <b>1305777-02BMS</b>					Units: <b>mg/Kg</b>	Analysis Date: <b>5/20/2013 10:09 PM</b>			
Client ID: <b>SB#11 (2'-3')</b>	Run ID: <b>FID-7_130519B</b>					SeqNo: <b>3225716</b>	Prep Date: <b>5/19/2013</b>		DF: <b>1</b>	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (>C10 - C28)	2594	1.7	33.22	2266	987	70-130				SEO
<i>Surr: 2-Fluorobiphenyl</i>	25.05	0	3.292	0	761	60-135	0			S

<b>MSD</b>	Sample ID: <b>1305777-02BMSD</b>					Units: <b>mg/Kg</b>	Analysis Date: <b>5/20/2013 10:33 PM</b>			
Client ID: <b>SB#11 (2'-3')</b>	Run ID: <b>FID-7_130519B</b>					SeqNo: <b>3225717</b>	Prep Date: <b>5/19/2013</b>		DF: <b>1</b>	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (>C10 - C28)	2498	1.7	33.21	2266	699	70-130	2594	3.76	30	SEO
<i>Surr: 2-Fluorobiphenyl</i>	38.19	0	3.291	0	1160	60-135	25.05	41.5	30	SR

The following samples were analyzed in this batch:

1305777-01B	1305777-02B	1305777-03B
1305777-05B	1305777-07B	1305777-08B
1305777-09B		

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

QC Page: 1 of 13

Client: Environmental Resources Management  
 Work Order: 1305777  
 Project: Gallup NM # PN 0097134

## QC BATCH REPORT

Batch ID: **70124** Instrument ID **FID-7** Method: **SW8015M**

<b>MBLK</b>	Sample ID: <b>FBLKS1-130520-70124</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/21/2013 02:04 AM</b>			
Client ID:	Run ID: <b>FID-7_130520A</b>				SeqNo: <b>3225646</b>		Prep Date: <b>5/20/2013</b>		DF: <b>1</b>	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (>C10 - C28)	U	1.7								
<i>Surr: 2-Fluorobiphenyl</i>	3.216	0	3.3	0	97.5	60-135	0			

<b>LCS</b>	Sample ID: <b>FLCSS1-130520-70124</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/21/2013 02:28 AM</b>			
Client ID:	Run ID: <b>FID-7_130520A</b>				SeqNo: <b>3225647</b>		Prep Date: <b>5/20/2013</b>		DF: <b>1</b>	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (>C10 - C28)	36.8	1.7	33.3	0	111	70-130				
<i>Surr: 2-Fluorobiphenyl</i>	3.46	0	3.3	0	105	60-135	0			

<b>MS</b>	Sample ID: <b>1305777-15BMS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/21/2013 02:28 AM</b>			
Client ID: <b>SB#4 (2'-3')</b>	Run ID: <b>FID-7_130520A</b>				SeqNo: <b>3225650</b>		Prep Date: <b>5/20/2013</b>		DF: <b>1</b>	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (>C10 - C28)	4596	1.7	33.24	5104	-1530	70-130				SEO
<i>Surr: 2-Fluorobiphenyl</i>	118.9	0	3.295	0	3610	60-135	0			S

<b>MSD</b>	Sample ID: <b>1305777-15BMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>5/21/2013 02:51 AM</b>			
Client ID: <b>SB#4 (2'-3')</b>	Run ID: <b>FID-7_130520A</b>				SeqNo: <b>3225651</b>		Prep Date: <b>5/20/2013</b>		DF: <b>1</b>	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (>C10 - C28)	6344	1.7	33.23	5104	3730	70-130	4596	32	30	SREO
<i>Surr: 2-Fluorobiphenyl</i>	131.7	0	3.293	0	4000	60-135	118.9	10.2	30	S

The following samples were analyzed in this batch:

1305777-10B	1305777-12B	1305777-13B
1305777-14B	1305777-15B	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Environmental Resources Management  
**Work Order:** 1305777  
**Project:** Gallup NM # PN 0097134

## QC BATCH REPORT

Batch ID: **70114**      Instrument ID **SV-5**      Method: **SW8270**

**MBLK**      Sample ID: **SBLKS2-130519-70114**      Units: **µg/Kg**      Analysis Date: **5/22/2013 09:53 AM**

Client ID:      Run ID: **SV-5\_130522A**      SeqNo: **3225811**      Prep Date: **5/20/2013**      DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	U	170								
2,4,6-Trichlorophenol	U	170								
2,4-Dichlorophenol	U	170								
2,4-Dimethylphenol	U	170								
2,4-Dinitrophenol	U	170								
2-Chlorophenol	U	170								
Acenaphthene	U	170								
Anthracene	U	170								
Benz(a)anthracene	U	170								
Benzo(a)pyrene	U	170								
Benzo(b)fluoranthene	U	170								
Benzo(k)fluoranthene	U	170								
Chrysene	U	170								
Dibenz(a,h)anthracene	U	170								
Fluoranthene	U	170								
Fluorene	U	170								
Naphthalene	U	170								
Nitrobenzene	U	170								
Pentachlorophenol	U	170								
Phenanthrene	U	170								
Phenol	U	170								
Pyrene	U	170								
<i>Surr: 2,4,6-Tribromophenol</i>	2911	170	3333	0	87.3	36-126	0			
<i>Surr: 2-Fluorobiphenyl</i>	2658	170	3333	0	79.7	43-125	0			
<i>Surr: 2-Fluorophenol</i>	2872	170	3333	0	86.2	37-125	0			
<i>Surr: 4-Terphenyl-d14</i>	4149	170	3333	0	124	32-125	0			
<i>Surr: Nitrobenzene-d5</i>	3086	170	3333	0	92.6	37-125	0			
<i>Surr: Phenol-d6</i>	2763	170	3333	0	82.9	40-125	0			

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



**Client:** Environmental Resources Management  
**Work Order:** 1305777  
**Project:** Gallup NM # PN 0097134

## QC BATCH REPORT

Batch ID: **70114**      Instrument ID **SV-5**      Method: **SW8270**

LCS				Sample ID: SLCSS2-130519-70114		Units: µg/Kg		Analysis Date: 5/22/2013 10:15 AM		
Client ID:		Run ID: SV-5_130522A			SeqNo:3225812		Prep Date: 5/20/2013		DF: 1	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	3151	170	3333	0	94.5	55-120				
2,4,6-Trichlorophenol	3056	170	3333	0	91.7	55-120				
2,4-Dichlorophenol	2831	170	3333	0	84.9	55-120				
2,4-Dimethylphenol	2951	170	3333	0	88.5	55-125				
2,4-Dinitrophenol	2772	170	3333	0	83.2	40-125				
2-Chlorophenol	2743	170	3333	0	82.3	55-120				
Acenaphthene	1410	170	1667	0	84.6	55-120				
Anthracene	1372	170	1667	0	82.3	55-120				
Benz(a)anthracene	1414	170	1667	0	84.8	55-125				
Benzo(a)pyrene	1341	170	1667	0	80.4	55-120				
Benzo(b)fluoranthene	1747	170	1667	0	105	55-125				
Benzo(k)fluoranthene	1427	170	1667	0	85.6	55-130				
Chrysene	1526	170	1667	0	91.6	55-125				
Dibenz(a,h)anthracene	1321	170	1667	0	79.2	55-120				
Fluoranthene	1283	170	1667	0	77	55-125				
Fluorene	1665	170	1667	0	99.9	55-120				
Naphthalene	1373	170	1667	0	82.4	55-120				
Nitrobenzene	1489	170	1667	0	89.3	55-120				
Pentachlorophenol	2968	170	3333	0	89	50-135				
Phenanthrene	1583	170	1667	0	95	55-120				
Phenol	2903	170	3333	0	87.1	50-120				
Pyrene	1602	170	1667	0	96.1	55-125				
Surr: 2,4,6-Tribromophenol	3024	170	3333	0	90.7	36-126		0		
Surr: 2-Fluorobiphenyl	3118	170	3333	0	93.6	43-125		0		
Surr: 2-Fluorophenol	3495	170	3333	0	105	37-125		0		
Surr: 4-Terphenyl-d14	4137	170	3333	0	124	32-125		0		
Surr: Nitrobenzene-d5	3104	170	3333	0	93.1	37-125		0		
Surr: Phenol-d6	3079	170	3333	0	92.4	40-125		0		

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Environmental Resources Management  
**Work Order:** 1305777  
**Project:** Gallup NM # PN 0097134

## QC BATCH REPORT

Batch ID: **70114**      Instrument ID **SV-5**      Method: **SW8270**

MS	Sample ID: 1305777-12BMS					Units: µg/Kg		Analysis Date: 5/22/2013 01:01 PM		
Client ID: Equipment Blank			Run ID: SV-5_130522A			SeqNo:3225815		Prep Date: 5/20/2013		DF: 1
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	3065	170	3327	0	92.1	55-120				
2,4,6-Trichlorophenol	2844	170	3327	0	85.5	55-120				
2,4-Dichlorophenol	2692	170	3327	0	80.9	55-120				
2,4-Dimethylphenol	2776	170	3327	0	83.4	55-125				
2,4-Dinitrophenol	2278	170	3327	0	68.5	40-125				
2-Chlorophenol	2587	170	3327	0	77.8	55-120				
Acenaphthene	1346	170	1663	0	80.9	55-120				
Anthracene	1388	170	1663	0	83.4	55-120				
Benz(a)anthracene	1417	170	1663	0	85.2	55-125				
Benzo(a)pyrene	1282	170	1663	0	77.1	55-120				
Benzo(b)fluoranthene	1504	170	1663	0	90.4	55-125				
Benzo(k)fluoranthene	1373	170	1663	0	82.5	55-130				
Chrysene	1475	170	1663	0	88.7	55-125				
Dibenz(a,h)anthracene	1286	170	1663	0	77.3	55-120				
Fluoranthene	1258	170	1663	0	75.6	55-125				
Fluorene	1489	170	1663	0	89.5	55-120				
Naphthalene	1288	170	1663	0	77.4	55-120				
Nitrobenzene	1342	170	1663	0	80.7	55-120				
Pentachlorophenol	2620	170	3327	0	78.8	50-135				
Phenanthrene	1434	170	1663	0	86.2	55-120				
Phenol	2644	170	3327	0	79.5	50-120				
Pyrene	1653	170	1663	0	99.4	55-125				
Surr: 2,4,6-Tribromophenol	2689	170	3327	0	80.8	36-126		0		
Surr: 2-Fluorobiphenyl	2798	170	3327	0	84.1	43-125		0		
Surr: 2-Fluorophenol	3204	170	3327	0	96.3	37-125		0		
Surr: 4-Terphenyl-d14	4113	170	3327	0	124	32-125		0		
Surr: Nitrobenzene-d5	2823	170	3327	0	84.9	37-125		0		
Surr: Phenol-d6	2922	170	3327	0	87.8	40-125		0		

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Environmental Resources Management  
 Work Order: 1305777  
 Project: Gallup NM # PN 0097134

## QC BATCH REPORT

Batch ID: **70114** Instrument ID **SV-5** Method: **SW8270**

MSD				Sample ID: <b>1305777-12BMSD</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>5/22/2013 01:24 PM</b>	
Client ID: <b>Equipment Blank</b>				Run ID: <b>SV-5_130522A</b>			SeqNo: <b>3225816</b>		Prep Date: <b>5/20/2013</b>	
									DF: <b>1</b>	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	2935	170	3328	0	88.2	55-120	3065	4.31	30	
2,4,6-Trichlorophenol	2806	170	3328	0	84.3	55-120	2844	1.33	30	
2,4-Dichlorophenol	2628	170	3328	0	79	55-120	2692	2.41	30	
2,4-Dimethylphenol	2757	170	3328	0	82.9	55-125	2776	0.687	30	
2,4-Dinitrophenol	2565	170	3328	0	77.1	40-125	2278	11.9	30	
2-Chlorophenol	2554	170	3328	0	76.7	55-120	2587	1.29	30	
Acenaphthene	1326	170	1664	0	79.7	55-120	1346	1.47	30	
Anthracene	1510	170	1664	0	90.8	55-120	1388	8.45	30	
Benz(a)anthracene	1386	170	1664	0	83.3	55-125	1417	2.22	30	
Benzo(a)pyrene	1267	170	1664	0	76.1	55-120	1282	1.19	30	
Benzo(b)fluoranthene	1512	170	1664	0	90.9	55-125	1504	0.542	30	
Benzo(k)fluoranthene	1353	170	1664	0	81.3	55-130	1373	1.48	30	
Chrysene	1402	170	1664	0	84.3	55-125	1475	5.06	30	
Dibenz(a,h)anthracene	1253	170	1664	0	75.3	55-120	1286	2.66	30	
Fluoranthene	1370	170	1664	0	82.3	55-125	1258	8.48	30	
Fluorene	1433	170	1664	0	86.1	55-120	1489	3.86	30	
Naphthalene	1286	170	1664	0	77.3	55-120	1288	0.161	30	
Nitrobenzene	1323	170	1664	0	79.5	55-120	1342	1.41	30	
Pentachlorophenol	2870	170	3328	0	86.3	50-135	2620	9.11	30	
Phenanthrene	1543	170	1664	0	92.8	55-120	1434	7.36	30	
Phenol	2519	170	3328	0	75.7	50-120	2644	4.84	30	
Pyrene	1577	170	1664	0	94.8	55-125	1653	4.69	30	
Surr: 2,4,6-Tribromophenol	2718	170	3328	0	81.7	36-126	2689	1.08	30	
Surr: 2-Fluorobiphenyl	2689	170	3328	0	80.8	43-125	2798	3.98	30	
Surr: 2-Fluorophenol	3147	170	3328	0	94.6	37-125	3204	1.79	30	
Surr: 4-Terphenyl-d14	3917	170	3328	0	118	32-125	4113	4.89	30	
Surr: Nitrobenzene-d5	2761	170	3328	0	83	37-125	2823	2.23	30	
Surr: Phenol-d6	2865	170	3328	0	86.1	40-125	2922	1.95	30	

The following samples were analyzed in this batch:

1305777-01B	1305777-02B	1305777-03B
1305777-05B	1305777-07B	1305777-08B
1305777-09B	1305777-10B	1305777-12B
1305777-13B	1305777-14B	1305777-15B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Environmental Resources Management  
 Work Order: 1305777  
 Project: Gallup NM # PN 0097134

## QC BATCH REPORT

Batch ID: **R147609** Instrument ID **VOA5** Method: **SW8260**

<b>MBLK</b>	Sample ID: <b>VBLKS1-052013-R147609</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>5/20/2013 10:17 AM</b>			
Client ID:	Run ID: <b>VOA5_130520A</b>				SeqNo: <b>3221592</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	U	5.0								
Ethylbenzene	U	5.0								
Isopropylbenzene	U	5.0								
m,p-Xylene	U	10								
o-Xylene	U	5.0								
Styrene	U	5.0								
Toluene	U	5.0								
Xylenes, Total	U	10								
Surr: 1,2-Dichloroethane-d4	46.29	0	50	0	92.6	70-128	0			
Surr: 4-Bromofluorobenzene	49.14	0	50	0	98.3	73-126	0			
Surr: Dibromofluoromethane	48.95	0	50	0	97.9	71-128	0			
Surr: Toluene-d8	49.72	0	50	0	99.4	73-127	0			

<b>LCS</b>	Sample ID: <b>VLCSS1-052013-R147609</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>5/20/2013 09:08 AM</b>			
Client ID:	Run ID: <b>VOA5_130520A</b>				SeqNo: <b>3221590</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	54.57	5.0	50	0	109	79-120				
Ethylbenzene	56.12	5.0	50	0	112	80-122				
Isopropylbenzene	57.24	5.0	50	0	114	72-127				
m,p-Xylene	112.7	10	100	0	113	79-122				
o-Xylene	56.87	5.0	50	0	114	80-123				
Styrene	55.51	5.0	50	0	111	78-124				
Toluene	55.56	5.0	50	0	111	79-120				
Xylenes, Total	169.5	10	150	0	113	80-120				
Surr: 1,2-Dichloroethane-d4	47.04	0	50	0	94.1	70-128	0			
Surr: 4-Bromofluorobenzene	50.05	0	50	0	100	73-126	0			
Surr: Dibromofluoromethane	50.55	0	50	0	101	71-128	0			
Surr: Toluene-d8	50.28	0	50	0	101	73-127	0			

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Environmental Resources Management  
 Work Order: 1305777  
 Project: Gallup NM # PN 0097134

## QC BATCH REPORT

Batch ID: **R147609** Instrument ID **VOA5** Method: **SW8260**

LCSD	Sample ID: <b>VLCSDS1-052013-R147609</b>					Units: <b>µg/Kg</b>		Analysis Date: <b>5/20/2013 09:31 AM</b>		
Client ID:	Run ID: <b>VOA5_130520A</b>				SeqNo: <b>3221591</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	55.51	5.0	50	0	111	79-120	54.57	1.72	30	
Ethylbenzene	55.85	5.0	50	0	112	80-122	56.12	0.491	30	
Isopropylbenzene	57.14	5.0	50	0	114	72-127	57.24	0.178	30	
m,p-Xylene	112.5	10	100	0	113	79-122	112.7	0.093	30	
o-Xylene	55.17	5.0	50	0	110	80-123	56.87	3.03	30	
Styrene	56.29	5.0	50	0	113	78-124	55.51	1.39	30	
Toluene	55.14	5.0	50	0	110	79-120	55.56	0.746	30	
Xylenes, Total	167.7	10	150	0	112	79-123	169.5	1.07	30	
<i>Surr: 1,2-Dichloroethane-d4</i>	48.96	0	50	0	97.9	70-128	47.04	3.98	30	
<i>Surr: 4-Bromofluorobenzene</i>	49.41	0	50	0	98.8	73-126	50.05	1.28	30	
<i>Surr: Dibromofluoromethane</i>	49.24	0	50	0	98.5	71-128	50.55	2.63	30	
<i>Surr: Toluene-d8</i>	48.77	0	50	0	97.5	73-127	50.28	3.05	30	

MS	Sample ID: 1305777-01AMS					Units: µg/Kg		Analysis Date: 5/20/2013 01:47 PM		
Client ID: SB#1 (2'-3')		Run ID: VOA5_130520A			SeqNo:3221801		Prep Date:		DF: 1	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	40.84	5.0	50	0	81.7	79-120				
Ethylbenzene	34.29	5.0	50	0	68.6	80-122				S
Isopropylbenzene	32.73	5.0	50	0	65.5	72-127				S
m,p-Xylene	70.18	10	100	0	70.2	79-122				S
o-Xylene	37.18	5.0	50	0	74.4	80-123				S
Styrene	35.11	5.0	50	0	70.2	78-124				S
Toluene	39.54	5.0	50	0	79.1	79-120				
Xylenes, Total	107.4	10	150	0	71.6	80-120				S
Surr: 1,2-Dichloroethane-d4	47.68	0	50	0	95.4	70-128		0		
Surr: 4-Bromofluorobenzene	44.09	0	50	0	88.2	73-126		0		
Surr: Dibromofluoromethane	48.39	0	50	0	96.8	71-128		0		
Surr: Toluene-d8	51.29	0	50	0	103	73-127		0		

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Environmental Resources Management

Work Order: 1305777

Project: Gallup NM # PN 0097134

## QC BATCH REPORT

Batch ID: **R147609**

Instrument ID **VOA5**

Method: **SW8260**

MSD	Sample ID: 1305777-01AMSD				Units: µg/Kg		Analysis Date: 5/20/2013 02:10 PM			
Client ID: SB#1 (2'-3')		Run ID: VOA5_130520A			SeqNo:3221802		Prep Date:		DF: 1	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	39.69	5.0	50	0	79.4	79-120	40.84	2.85	30	
Ethylbenzene	30.35	5.0	50	0	60.7	80-122	34.29	12.2	30	S
Isopropylbenzene	26.57	5.0	50	0	53.1	72-127	32.73	20.8	30	S
m,p-Xylene	59.22	10	100	0	59.2	79-122	70.18	16.9	30	S
o-Xylene	32.14	5.0	50	0	64.3	80-123	37.18	14.6	30	S
Styrene	30.99	5.0	50	0	62	78-124	35.11	12.5	30	S
Toluene	35.62	5.0	50	0	71.2	79-120	39.54	10.4	30	S
Xylenes, Total	91.36	10	150	0	60.9	79-123	107.4	16.1	30	S
Surr: 1,2-Dichloroethane-d4	49.48	0	50	0	99	70-128	47.68	3.72	30	
Surr: 4-Bromofluorobenzene	44.71	0	50	0	89.4	73-126	44.09	1.41	30	
Surr: Dibromofluoromethane	48.77	0	50	0	97.5	71-128	48.39	0.793	30	
Surr: Toluene-d8	50.42	0	50	0	101	73-127	51.29	1.7	30	

The following samples were analyzed in this batch:

1305777-01A	1305777-02A	1305777-03A
1305777-05A	1305777-07A	1305777-08A
1305777-09A	1305777-10A	1305777-12A
1305777-13A	1305777-14A	1305777-15A
1305777-16A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Environmental Resources Management  
 Work Order: 1305777  
 Project: Gallup NM # PN 0097134

## QC BATCH REPORT

Batch ID: **R147658** Instrument ID **VOA5** Method: **SW8260**

<b>MBLK</b>	Sample ID: <b>VBLKS1-052113-R147658</b>			Units: <b>µg/Kg</b>			Analysis Date: <b>5/21/2013 08:51 AM</b>			
Client ID:	Run ID: <b>VOA5_130521A</b>			SeqNo: <b>3222824</b>			Prep Date:		DF: <b>1</b>	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
m,p-Xylene	U	10								
o-Xylene	U	5.0								
Xylenes, Total	U	10								
Surr: 1,2-Dichloroethane-d4	44.52	0	50	0	89	70-128	0			
Surr: 4-Bromofluorobenzene	49.42	0	50	0	98.8	73-126	0			
Surr: Dibromofluoromethane	48.75	0	50	0	97.5	71-128	0			
Surr: Toluene-d8	49.94	0	50	0	99.9	73-127	0			

<b>LCS</b>	Sample ID: <b>VLCSS1-052113-R147658</b>			Units: <b>µg/Kg</b>			Analysis Date: <b>5/21/2013 08:28 AM</b>			
Client ID:	Run ID: <b>VOA5_130521A</b>			SeqNo: <b>3222823</b>			Prep Date:		DF: <b>1</b>	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
m,p-Xylene	105.1	10	100	0	105	79-122				
o-Xylene	53.26	5.0	50	0	107	80-123				
Xylenes, Total	158.4	10	150	0	106	80-120				
Surr: 1,2-Dichloroethane-d4	46.88	0	50	0	93.8	70-128	0			
Surr: 4-Bromofluorobenzene	50.63	0	50	0	101	73-126	0			
Surr: Dibromofluoromethane	49.29	0	50	0	98.6	71-128	0			
Surr: Toluene-d8	50.4	0	50	0	101	73-127	0			

<b>MS</b>	Sample ID: <b>1305709-13AMS</b>			Units: <b>µg/Kg</b>			Analysis Date: <b>5/21/2013 11:32 AM</b>			
Client ID:	Run ID: <b>VOA5_130521A</b>			SeqNo: <b>3223218</b>			Prep Date:		DF: <b>1</b>	
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
m,p-Xylene	79.63	10	100	0	79.6	79-122				
o-Xylene	39.64	5.0	50	0	79.3	80-123				S
Xylenes, Total	119.3	10	150	0	79.5	80-120				S
Surr: 1,2-Dichloroethane-d4	49.17	0	50	0	98.3	70-128	0			
Surr: 4-Bromofluorobenzene	50.53	0	50	0	101	73-126	0			
Surr: Dibromofluoromethane	48.95	0	50	0	97.9	71-128	0			
Surr: Toluene-d8	49.6	0	50	0	99.2	73-127	0			

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Environmental Resources Management  
**Work Order:** 1305777  
**Project:** Gallup NM # PN 0097134

## QC BATCH REPORT

Batch ID: **R147658** Instrument ID **VOA5** Method: **SW8260**

MSD		Sample ID: <b>1305709-13AMSD</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>5/21/2013 11:55 AM</b>		
Client ID:		Run ID: <b>VOA5_130521A</b>				SeqNo: <b>3223219</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
m,p-Xylene	88.38	10	100	0	88.4	79-122	79.63	10.4	30	
o-Xylene	44.2	5.0	50	0	88.4	80-123	39.64	10.9	30	
Xylenes, Total	132.6	10	150	0	88.4	79-123	119.3	10.6	30	
Surr: 1,2-Dichloroethane-d4	49.39	0	50	0	98.8	70-128	49.17	0.427	30	
Surr: 4-Bromofluorobenzene	50.15	0	50	0	100	73-126	50.53	0.774	30	
Surr: Dibromofluoromethane	48.63	0	50	0	97.3	71-128	48.95	0.661	30	
Surr: Toluene-d8	49.84	0	50	0	99.7	73-127	49.6	0.486	30	

The following samples were analyzed in this batch:

1305777-15A

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



**Client:** Environmental Resources Management  
**Work Order:** 1305777  
**Project:** Gallup NM # PN 0097134

## QC BATCH REPORT

Batch ID: **R147725** Instrument ID **Balance1** Method: **SW3550** **(Dissolve)**

**DUP** Sample ID: **1305777-09BDUP** Units: **wt%** Analysis Date: **5/21/2013 02:00 PM**

Client ID: **SB#3 (2'-3')** Run ID: **BALANCE1\_130521C** SeqNo: **3224889** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Percent Moisture	11.95	0.010					12.52	4.68	20	

The following samples were analyzed in this batch:

1305777-01B	1305777-02B	1305777-03B
1305777-05B	1305777-07B	1305777-08B
1305777-09B		

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Environmental Resources Management  
**Work Order:** 1305777  
**Project:** Gallup NM # PN 0097134

## QC BATCH REPORT

Batch ID: **R147733** Instrument ID **Balance1** Method: **SW3550** **(Dissolve)**

**DUP** Sample ID: **1305676-12CDUP** Units: **wt%** Analysis Date: **5/21/2013 03:00 PM**

Client ID: Run ID: **BALANCE1\_130521E** SeqNo: **3225031** Prep Date: DF: **1**

Analyte	Result	MQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Percent Moisture	23.54	0.010					24.04	2.1	20	

The following samples were analyzed in this batch:

1305777-10B	1305777-12B	1305777-13B
1305777-14B	1305777-15B	

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Environmental Resources Management  
**Project:** Gallup NM # PN 0097134  
**WorkOrder:** 1305777

## **QUALIFIERS, ACRONYMS, UNITS**

<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<b><u>Acronym</u></b>	<b><u>Description</u></b>
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
mg/Kg	Milligrams per Kilogram
mg/Kg-dry wt%	Milligrams per Kilogram - Dry weight corrected

Sample Receipt Checklist

Client Name: **ERMSW-HOU**

Date/Time Received: **17-May-13 09:00**

Work Order: **1305777**

Received by: **PMG**

Checklist completed by *Parash M. Ciga*  
eSignature

17-May-13  
Date

Reviewed by: *Bernadette D. Fini*  
eSignature

17-May-13  
Date

Matrices: Soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>0.3c/0.3c C/U</u> <u>IR1</u>		
Cooler(s)/Kit(s):	<u>4082</u>		
Date/Time sample(s) sent to storage:	<u>5/17/13 14:50</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u>-</u>		

Login Notes: Date of collection for Equipment blank logged in from jars. Trip blank received not listed on chain

Client Contacted:

Date Contacted:

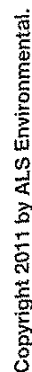
Person Contacted:

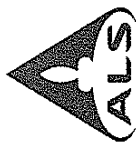
Contacted By:

Regarding:

Comments:

CorrectiveAction:





Cincinnati, OH  
+1 513 733 5336  
Everett, WA  
+1 425 356 2600

Fort Collins, CO  
+1 970 490 1511  
Holland, MI  
+1 616 399 6070

## Chain of Custody Form

Houston, TX  
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Middletown, PA  
+1 717 944 5541

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Salt Lake City, UT  
+1 801 266 7700  
South Charleston, WV  
+1 304 356 3168  
York, PA  
+1 717 505 5280

**Environmental**

Page      of     

COC ID: 81027

Customer Information				Project Information				ALS Project Manager:				ALS Work Order #:					
Purchase Order				Project Name				Gallup NM				Parameter/Method Request for Analysis					
Work Order				Project Number				PN 0097134				VOC (8260) Select					
Company Name				Environmental Resources Management				Environmental Resources Management				SVOC (8270) Select					
Send Report To				Don Whitley				Don Whitley				DRO (8015)					
Address				15810 Park Ten Place Suite 300				15810 Park Ten Place Suite 300				Moisture					
City/State/Zip				Houston, TX 77084				Houston, TX 77084									
Phone				(281) 600-1000				(281) 600-1000									
Fax				(281) 600-1001				(281) 600-1001									
e-Mail Address																	
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	SB # 2 (4'-5')	5-15-2013	8:30am	Soil	N/A	2	X	X	X	X							
2	Equipment Blank		8:40am	Sand	N/A	2											
3	SB # 7 (2'-3')		8:45am	Soil													
4	SB # 10 (2'-3')		10:25am														
5	SB # 4 (2'-3')		11:19am														
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign		Shipment Method		Required Turnaround Time: (Check Box)		Results Due Date:	
Vlad Labovskiy				<input checked="" type="checkbox"/> 5-10 WK Days	<input type="checkbox"/> 2 WK Days	<input type="checkbox"/> 24 Hour	
Relinquished by:		Date:	Time:	Notes: 5/17/13 JSD/JAT			
Vlad Labovskiy		5-16-2013	13:00				
Relinquished by:		Date:	Time:				
Logged by (Laboratory):		Date:	Time:				
Preservative Key:	1-HCl	2-HNO <sub>3</sub>	3-H <sub>2</sub> SO <sub>4</sub>	4-NaOH	5-Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	6-NaHSO <sub>4</sub>	7-Other
							8-4°C
							9-5035

QC Package: (Check One Box Below)		Cooler Temp.		Cooler ID		Cooler Temp.	
<input type="checkbox"/> Level II Std OC	<input type="checkbox"/> Level III Std OC	<input type="checkbox"/> Level II Std OC	<input type="checkbox"/> Level III Std OC	4207-214-5717	4207	4207	4207
<input type="checkbox"/> Level IV SW946/CLP	<input type="checkbox"/> Other / EDD						

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.  
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.  
3. The Chain of Custody is a legal document. All information must be completed accurately.

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FedEx  
Tracking  
Number

8020 3307 1320

1 From  
Date 05-16-2013  
Sender's Name VLAD LABEUSKI Phone 281 639 0652  
Company  
Address  
City Houston State TX ZIP  
Dept./Floor/Suite/Room

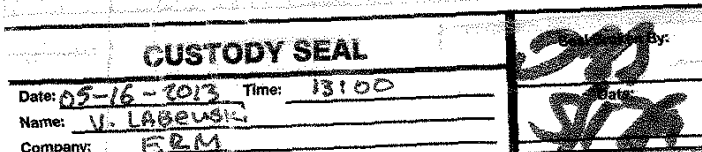
## 2 Your Internal Billing Reference

3 To  
Recipient's Name CLIENT SERVICES Phone 281 530-5456  
Company ALS LABORATORY GROUP  
Address 10450 STANCLIFF RD STE 210  
We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room  
Address  
Use this line for the HLDL location address or for continuation of your shipping address.  
City HOUSTON State TX ZIP 77099-4338



8020 3307 1320

4 Express Package Service \* To most locations.  
NOTE: Service order has changed. Please select carefully.  
Next Business Day  
☒ FedEx First Overnight  
FedEx Priority Overnight  
☒ FedEx Standard Overnight  
2 or 3 Business Days  
☐ FedEx 2Day A.M.  
☐ FedEx 2Day  
☐ FedEx Express Saver  
Packaging \* Declared value limit \$500.  
☐ FedEx Envelope\* ☐ FedEx Pak\* ☐ FedEx Box ☐ FedEx Tube ☒ Other  
Special Handling and Delivery Signature Options  
☐ SATURDAY Delivery  
☒ No Signature Required  
☐ Direct Signature  
☐ Indirect Signature  
Does this shipment contain dangerous goods?  
☒ No ☐ Yes  
Payment Bill to:  
☐ Sender ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check  
Total Packages 2 Total Weight 67 lbs  
Total Packages 2 Total Weight 67 lbs  
Total Packages 2 Total Weight 67 lbs



FedEx  
Tracking  
Number

8020 3307 1320

1 From  
Date 05-16-2013  
Sender's Name VLAD LABEWSKI Phone 281 530 6652  
Company  
Address  
City HOUSTON State TX ZIP 77095-4326

## 2 Your Internal Billing Reference

3 To  
Recipient's Name CLIENT SERVICES Phone 281 530-5456  
Company ALS LABORATORY GROUP  
Address 10450 STANCLIFF RD STE 210  
We cannot deliver to P.O. boxes or P.O. ZIP codes.  
Address  
Use this line for the HOLD location address or for continuation of your shipping address.  
City HOUSTON State TX ZIP 77095-4326

HOLD Weekday  
FedEx location address  
REQUIRED. NOT available for  
FedEx First Overnight.HOLD Saturday  
FedEx location address  
REQUIRED. Available ONLY for  
FedEx Priority Overnight and  
FedEx 2Day to select locations.

8020 3307 1320

## 4 Express Package Service

NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs.  
For packages over 150 lbs. use the  
FedEx Express Freight US Airbill.

Next Business Day  
☒ FedEx First Overnight  
FedEx Priority Overnight  
FedEx Standard Overnight  
Next business morning. \* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.  
Next business afternoon. \* Saturday Delivery NOT available.

2 or 3 Business Days  
☐ FedEx 2Day A.M.  
Second business morning. \* Saturday Delivery NOT available.  
☐ FedEx 2Day  
Second business afternoon. \* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.  
☐ FedEx Express Saver  
Third business day. \* Saturday Delivery NOT available.

5 Packaging \* Declared value limit \$500.  
☐ FedEx Envelope® ☐ FedEx Pak® ☐ FedEx Box ☐ FedEx Tube ☒ Other

## 6 Special Handling and Delivery Signature Options

☐ SATURDAY Delivery  
NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

☒ No Signature Required  
Package may be left without obtaining a signature for delivery.

☐ Direct Signature  
Someone at recipient's address may sign for delivery. Fee applies.

☐ Indirect Signature  
If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Fee applies.

Does this shipment contain dangerous goods?  
☒ No ☐ Yes  
As per attached Shipper's Declaration.

☐ Dry Ice  
Dry Ice 3.0 UN 1845 X kg  
☐ Cargo Aircraft Only

7 Payment Bill to:  
Sender ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check  
Enter FedEx Acct. No. or Credit Card No. below. Obtain recip. Acct. No.  
Total Packages 2 Total Weight 67 lbs. Credit Card Auth.

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ALS Environmental

10450 Stancliff Rd, Suite 210  
Houston, Texas 77099  
Tel. 281 530 6652  
Fax: 281 530 5887

## CUSTODY SEAL

Date: 05-16-2013 Time: 13:00  
Name: V. LABEWSKI  
Company: ERM



## Chavez, Carl J, EMNRD

---

**From:** Larsen, Thurman <Thurman.Larsen@wnr.com>  
**Sent:** Tuesday, August 20, 2013 4:53 PM  
**To:** Chavez, Carl J, EMNRD; VonGonten, Glenn, EMNRD  
**Cc:** Allen, Ann; Hains, Allen; Dhawan, Neelam, NMENV; Kieling, John, NMENV; Blaine, Tom, NMENV; Cobrain, Dave, NMENV  
**Subject:** Gallup Hydrocarbon Seep - Spill Response Update  
**Attachments:** Gallup Hydrocarbon Seep - Spill Response Update.pdf

Carl,

Western Refining Southwest, Inc. – Gallup Refinery provided notice of discovery of an apparent seep of hydrocarbon to the west of Tanks 101 and 102 on June 26, 2013 and submitted a Form C-141 on July 11, 2013 informing of initial spill response actions taken. The attached report provides an update on the on-going spill response actions.

Regards,

Beck Larsen\  
Environmental Engineer  
Western Refining

August 20, 2013

***Via Email and Certified Mail, Return Receipt Requested***

Mr. Carl Chavez  
New Mexico Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, NM 87505

**Re: Hydrocarbon Release Notification Report  
Western Refining Company Southwest, Inc. ("Western")  
Gallup Refinery  
AP-111  
EPA ID #NMD000333211**

Dear Mr. Chavez:

Western Refining Southwest, Inc. – Gallup Refinery provided notice of the discovery of an apparent seep of hydrocarbons to the west of Tanks 101 and 102 on June 26, 2013 and submitted a Form C-141 on July 11, 2013 informing of initial spill response actions taken. This letter report provides an update on the on-going spill response actions, including a map of the subject area (Figure 1) and all currently available information pertaining to the release (e.g., media affected, analytical reports and estimated recovered volumes of groundwater/hydrocarbons).

**Actions Completed To-Date**

As noted in the C-141 Form, a series of 14 excavations were completed in the area of the seep to the west and south of Tanks T-101 and T-102. The hydrocarbons appear to be migrating through silty fine sand deposits that overlie a thick low permeability clay/siltstone, which isolates the underlying uppermost aquifer (Sonsela Aquifer). Six of the excavations were initially left open to facilitate recovery of hydrocarbons and groundwater. Subsequently, a six-inch PVC screen was placed in each of these same six excavations and they were backfilled with coarse gravel to create temporary sumps to allow for safe, continued recovery of liquids. The groundwater and any hydrocarbons that enter the sumps are removed with a vacuum truck and placed into the wastewater treatment system up-stream of the API Separator. The volume of total liquids (groundwater and hydrocarbons) recovered from June 26, 2013 through August 13, 2013 is estimated to be 27,000 gallons. The initial material recovered was estimated to be 50% water and 50% hydrocarbon; however, the percentage of hydrocarbon reduced significantly over the first couple of weeks. Since the area has been receiving significant rainfall, the recovered material is now primarily water.

Efforts to identify the source of the hydrocarbons have included the following actions:

1. Distillation analyses of two hydrocarbon samples collected near the seep (Seep 1 and Seep 2);
2. Dye tracer tests on the process sewer system;
3. Completion of five hand-auger borings to the west and northwest of the seep location with temporary well completions;
4. Installation of 22 soil borings with temporary well completions to the south of the seep location, including in the general vicinity of a recent release of gasoline from marketing tank MT-3, which was reported on May 7, 2013 (Form C-141 submitted May 16, 2013); and
5. Collection and laboratory analysis of one product sample, one soil sample from the exaction stock pile, one soil sample from drill cuttings, and six groundwater samples from temporary well completions.

The results of the two new distillation analyses were plotted on the enclosed graph (Figure 3) and the laboratory reports are also enclosed. The graph indicates that the hydrocarbon recovered at the location of the seep (identified on the graph as Seep Sample 1 and Seep Sample 2 and in the lab report as underground petroleum sample deposit #1 and #2) has a mixture of gasoline through light gas-oil range hydrocarbons, with a majority of the sample consisting of diesel range hydrocarbons. The distillation analysis of a crude sample collected from Tank T-101 in November 2011 is also plotted on Figure 3 and there is a clear distinction between the material found at the seep location and the crude oil processed at the refinery. The hydrocarbon recovered at the seeps and found in the soil borings is a clear liquid and does not resemble crude oil. In addition, the distillation results eliminate Tanks T-101 and T-102 (crude oil storage tanks) as a source of the release.

Two separate dye tests were conducted in the process sewer system. A dye was introduced into the sewer due east of the seep location near the bundle cleaning pad and a second dye was placed in the sewer to the southeast of the marketing tanks at the truck rack. In both instances, it took approximately eight days for the dye to be detected in the area of the seep. The dyes initially were not identified in the soil borings/temporary wells located further south, but only in the area where the seep was originally identified. During the most recent fluid gauging event on August 14<sup>th</sup>, a dye was observed in SB-1 and SB-16. The presence of dye in groundwater in the area of the seep indicates the potential for a release from the sewer system, but additional assessment will be required to confirm a release and locate any actual leaks.

The enclosed map (Figure 1) shows the locations of the five hand auger locations and 22 soil borings, which were completed as temporary monitoring wells to allow gauging of fluid levels and collection of groundwater samples for analysis. The boring logs and a table summarizing fluid level measurements (Table 1) are enclosed. As many of the borings/temporary wells indicate the presence of phase-separated hydrocarbon (PSH), groundwater samples were only collected for analysis from HA-1, HA-2, HA-3, HA-4, SB-18, and SB-19. A map of the measured thickness of PSH is enclosed as Figure 2. The groundwater samples were analyzed for total petroleum hydrocarbons (gasoline range, diesel range, and oil range) by EPA method 8015D. The results are summarized in Table 2. Gasoline range and diesel range organics were detected in all groundwater samples, with gasoline range being the dominant fraction in three of the four hand auger locations. The fourth hand auger location (HA-4) shows equal concentrations of gasoline range and diesel range organics, as does SB-18. A higher

concentration of diesel range organics as compared to gasoline range organics was detected in SB-19.

Waste characterization samples have been collected from the soils generated during excavation for the sumps and the drill cuttings from the temporary well installations. The analyses are enclosed for each and demonstrate the soils generated to-date are not characteristically hazardous, but do contain petroleum hydrocarbons.

#### Future Actions

Western will continue efforts to further characterize potential source areas, to recover PSH and to delineate the lateral extent of impacts to groundwater. These efforts will be accomplished by the following tasks.

- Further testing of the sewer system lines is being conducted to help locate any potential leaks. The results of leak detection surveys (e.g., *Tracer Tight*® and *HeliTek*®) will be used to help locate additional soil borings/temporary wells to define the lateral extent of any releases from the sewer system that may have contributed to the seep.
- Recovery operations at the six sumps will continue to remove any PSH and impacted groundwater that accumulates in the sumps.
- The ground level and top of casing elevations will be surveyed at the temporary well and sump locations. From this information and fluid level measurements, a potentiometric surface map will be prepared. This information will be used to help locate additional soil borings/temporary wells to define the lateral extent of the release.
- Additional soil borings/temporary wells will be installed for characterization and delineation purposes.

If there are any questions regarding the actions taken to-date or planned further actions, then please contact me at 505-722-0217. Please note Western reserves all applicable rights and defenses relevant to this matter.

Sincerely,



Beck Larsen  
Environmental Engineer

SC/BL/

Enclosures  
Copy Distribution List:

G. von Gonten, OCD  
A. Allen, Western  
A. Hains, Western  
L. Gould, Western

N. Dhawan, NMED HWB  
J. Kieling, NMED HWB  
T. Blaine, NMED  
D. Cobrain, NMED HWB

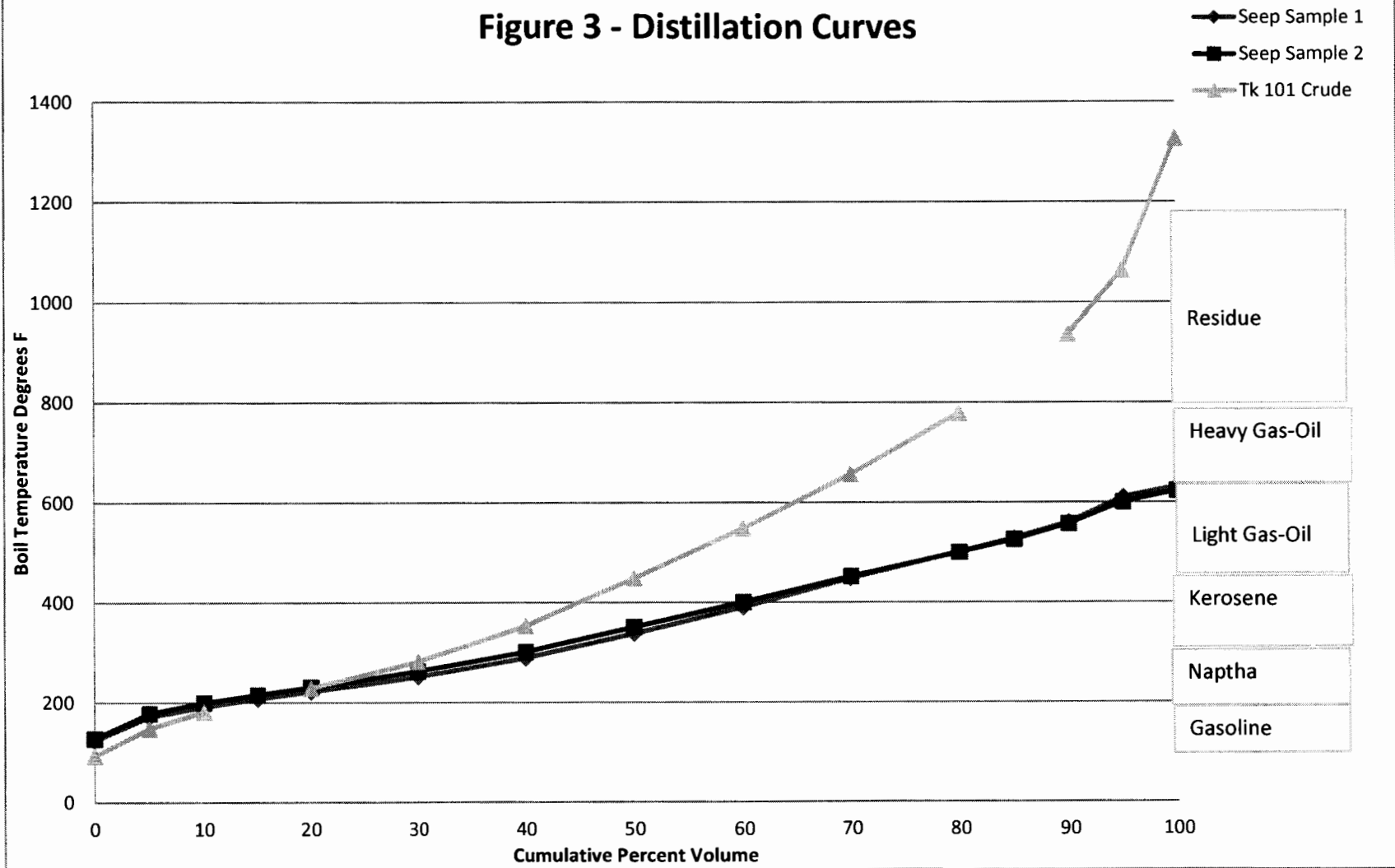
## Figures

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**Figure 3 - Distillation Curves**





## Tables

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Table 1  
Fluid Level Measurements  
Gallup Refinery - Jamestown, New Mexico

LOC.	DATE	DEPTH TO PSH (ft BGL)	DEPTH TO GW (ft BGL)	PSH THICKNESS (feet)	Top of Casing (ft AGL)	COMMENTS
HA1	07/11/13	ND	4.90	0.00	5.80	
	07/12/13	ND	4.90	0.00	NM	
	07/17/13	ND	5.05	0.00	NM	
	08/14/13	ND	9.19	0.00	NM	Odor detected
HA2	07/12/13	ND	4.95	0.00	NM	
	07/17/13	ND	5.32	0.00	NM	
	08/14/13	ND	5.31	0.00	NM	Odor detected
HA3	07/12/13	ND	5.80	0.00	NM	
	07/17/13	ND	5.93	0.00	NM	
	08/14/13	ND	4.28	0.00	NM	Odor detected
HA4	07/12/13	ND	3.40	0.00	NM	PSH OBSERVED ON PROBE
	07/17/13	ND	3.53	0.00	NM	
	08/14/13	ND	4.94	0.00	NM	Odor detected
HA5	07/12/13	ND	5.50	0.00	NM	
	07/17/13	NM	NM		NM	BOREHOLE WAS DESTROYED
SB01	07/17/13	8.75	13.99	5.24	NM	
	07/25/13	8.18	13.88	5.70	2.67	
	08/14/13	9.88	9.91	0.03	2.67	Has reddish tint - trace of dye?
SB02	07/17/13	9.26	9.58	0.32	NM	
	07/25/13	8.85	9.14	0.29	0.83	
	08/14/13	8.74	9.12	0.38	0.83	
SB03	07/17/13	ND	11.40	0.00	NM	
	07/25/13	ND	10.63	0.00	2.21	
	08/14/13	ND	12.01	0.00	2.21	Odor detected
SB04	07/17/13	ND	12.87	0.00	NM	
	07/25/13	ND	12.23	0.00	0.75	
	08/14/13	ND	12.19	0.00	0.75	Odor detected
SB05	07/17/13	13.67	14.70	1.03	NM	
	07/25/13	13.27	14.19	0.92	1.21	
	08/14/13	13.66	13.75	0.09	1.21	
SB06	07/22/13	13.43	13.44	0.01	NM	No PSH observed during drilling
	07/25/13	13.33	13.34	0.01	0.67	
	08/14/13	ND	13.07	0.00	0.67	Odor detected
SB07	07/22/13	13.51	13.52	0.01	NM	No PSH observed during drilling
	07/25/13	13.45	13.46	0.01	1.33	
	08/14/13	ND	13.49	0.00	1.33	Odor detected
SB08	07/22/13	16.00	17.86	1.86	NM	
	07/25/13	15.92	17.80	1.88	1.88	
	08/14/13	16.65	18.80	2.15	1.88	

Table 1  
Fluid Level Measurements  
Gallup Refinery - Jamestown, New Mexico

LOC.	DATE	DEPTH TO PSH (ft BGL)	DEPTH TO GW (ft BGL)	PSH THICKNESS (feet)	Top of Casing (ft AGL)	COMMENTS
SB09	07/22/13	14.39	14.40	0.01	NM	PSH observed during drilling
	07/25/13	ND	14.40	0.00	2.25	
	08/14/13	ND	14.83	0.00	2.25	Odor detected
SB10	07/22/13	ND	8.29	0.00	NM	PSH observed during drilling at 5-6'
	07/25/13	ND	6.16	0.00	1.58	
	08/14/13	7.57	9.14	1.57	1.58	Odor detected
SB11	07/22/13	ND	ND	NA	NM	PSH observed during drilling
	07/25/13				3.00	Reset not measured
	08/14/13	14.06	14.08	0.02	3.00	Odor detected
SB12	07/22/13	11.96	11.97	0.01	NM	PSH observed during drilling
	07/25/13	ND	12.01	0.00	2.17	
	08/14/13	ND	14.72	0.00	2.17	Odor detected
SB13	07/22/13	ND	11.71	0.00	NM	Sheen observed during drilling
	07/25/13	ND	11.53	0.00	3.50	
	08/14/13	ND	14.75	0.00	3.50	Odor detected
SB14	07/25/13	ND	14.09	0.00	2.00	
	08/14/13	ND	15.7	0.00	2.00	Odor detected
SB15	07/25/13	ND	16.46	0.00	3.00	
	08/14/13	ND	18.54	0.00	3.00	Odor detected
SB16	07/25/13	9.54	12.70	3.16	1.50	
	08/14/13	10.76	11.36	0.60	1.50	Has reddish tint - trace of dye?
SB17	07/25/13	9.42	9.55	0.13	2.58	
	08/14/13	11.09	11.25	0.16	2.58	
SB18	07/25/13	ND	15.58	0.00	3.00	Sampled for TPH
	08/14/13	ND	17.54	0.00	3.00	Odor detected
SB19	07/25/13	ND	16.78	0.00	2.67	Sampled for TPH
	08/14/13	18.3	18.8	0.50	2.67	
SB20	07/25/13	10.62	13.24	2.62	3.00	
	08/14/13	12.88	16.3	3.42	3.00	
SB21	07/25/13	7.10	9.32	2.22	2.83	
	08/14/13	9.20	9.98	0.78	2.83	
SB22	07/25/13	4.89	7.99	3.10	3.00	
	08/14/13	6.77	7.91	1.14	3.00	

ND - no product detected

NM - not measured

**Table 2**  
**Groundwater Analytical Results Summary**  
**Gallup Refinery - Jamestown, New Mexico**

Analytes		HA-1	HA-2	HA-3	HA-4	SB-18	SB-19
Sample ID		1307892-001	1307892-002	1307892-003	1307892-004	1012096-01	1009356-02
Sample date		7/17/2013	7/17/2013	7/17/2013	7/17/2013	7/25/2013	7/25/2013
	Units						
<b>Total Petroleum Hydrocarbons</b>							
Gasoline Range Organics (GRO)	mg/L	19	16	25	17	73	19
Diesel Range Organics (DRO)	mg/L	3.3	3.1	4.8	17	73	30
Motor Oil Range Organics (MRO)	mg/L	<5	<5	<5	<5	<5	<5

# Boring Logs

---

**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01809  
**Geologist:** Tracy Payne  
**Driller:** N/A  
**Drilling Rig:** N/A  
**Drilling Method:** Hand Auger  
**Sampling Method:** Auger Head  
**Comments:** N 35°29.346' W 108°25.782'

**LOG OF BORING**

**Boring No.:** HA1  
**Start Date:** 7/10/2013 16:30  
**Finish Date:** 7/10/2013 16:55

**Total Depth:** 7.5' bgl  
**Ground Water:** Saturated @ 5' bgl  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** --  
**Site Coordinates:**  
N E

Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
0								Ground Surface	0
2							100	<b>Silty Clay (CL)</b> Low plasticity, soft, damp, reddish brown to brown, no odor	2
4									4
6							100	<b>Silty Clay/Clayey Silt (CL/ML)</b> Low plasticity, very soft, moist to saturated, brown grading to black, gravelly, bio odor, no phase-separated hydrocarbon	6
8								Total Depth = 7.5' BGL	8
10									10
12									12
14									14
16									16

Set temporary 1" Well  
Screened: 2.5-7.5' bgl  
Filter Pack: 1-7.5' bgl  
Bentonite: 0-1' bgl  
Stickup: 1.75'

**RPS****Client:** Western Refining Southwest, Inc.**Site:** Gallup Refinery - Seep West of Tank 102**Job No.:** UEC01809**Geologist:** Tracy Payne**Driller:** N/A**Drilling Rig:** N/A**Drilling Method:** Hand Auger**Sampling Method:** Auger Head**Comments:** N 35°29.353' W 108°25.785'**LOG OF BORING****Boring No.:** HA2**Start Date:** 7/11/2013 08:40**Finish Date:** 7/11/2013 09:40**Total Depth:** 9' bgl**Ground Water:** Saturated @ 4.75' bgl**Elev., TOC (ft. msl):** --**Elev., PAD (ft. msl):** --**Elev., GL (ft. msl):** --**Site Coordinates:****N****E**

Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
0								Ground Surface	0
2					15.4 86°F		100	<b>Silty Clay (CL)</b> Low plasticity, soft, damp, brown/reddish brown, no odor, damp	2
4				4.75'	15.6 86°F		100	<b>Silty Clay (CL)</b> Similar to above, moist to saturated at 4.75' bgl, gravelly, no odor	4
6					15.3 86°F		100	<b>Silty Clay (CL)</b> Similar to above with saturated sand seams, strong hydrocarbon odor, no phase-separated hydrocarbon	6
8									8
10					1250 86°F			Total Depth = 9' BGL	10
12								Set temporary 1" Well Screened: 5-9' bgl Filter Pack: 2-9' bgl Bentonite: 0-2' bgl Stickup: 0.5'	12
14									14
16									16

**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01809  
**Geologist:** Tracy Payne  
**Driller:** N/A  
**Drilling Rig:** N/A  
**Drilling Method:** Hand Auger  
**Sampling Method:** Auger Head  
**Comments:** N 35°29.360' W 108°25.789'

**LOG OF BORING**

**Boring No.:** HA3  
**Start Date:** 7/11/2013 12:45  
**Finish Date:** 7/11/2013 13:45

**Total Depth:** 10.75' bgl  
**Ground Water:** Saturated @ 9' bgl  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** --  
**Site Coordinates:**  
 N E

Depth (ft.)	Sampling						Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class		
0							Ground Surface	0
2					24.6 98°F	100	<b>Silty Clay (CL)</b> Low plasticity, firm, damp, brown-reddish brown, no odor	2
4					20.1 98°F	100	<b>Silty Clay (CL)</b> Similar to above, odor at 6' bgl with black discolorations	4
6					400 98°F	100		6
8				9'	933 98°F	100	<b>Sandy Clay (CL)</b> Low plasticity, soft, moist to saturated at 9' bgl, hydrocarbon odor, no phase-separated hydrocarbon	8
10					800 98°F	100	<b>Sandy Clay/Clayey Sand (SC/CL)</b> Fine grain, compact, saturated, dark brown, hydrocarbon odor, no phase-separated hydrocarbon	10
12							Total Depth = 10.75' BGL	12
14							Set temporary 1" Well Screened: 5.75-10.75' bgl Filter Pack: 2-10.75' bgl Bentonite: 0-2' bgl Stickup: 0.75'	14
16								16



**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01809  
**Geologist:** Tracy Payne  
**Driller:** N/A  
**Drilling Rig:** N/A  
**Drilling Method:** Hand Auger  
**Sampling Method:** Auger Head  
**Comments:** N 35°29.363' W 108°25.787'

## LOG OF BORING

**Boring No.:** HA4  
**Start Date:** 7/11/2013 14:00  
**Finish Date:** 7/11/2013 15:00

**Total Depth:** 7' bgl  
**Ground Water:** Saturated @ 4' bgl  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** --  
**Site Coordinates:**  
N E

Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
0							100	Ground Surface	0
2							100	<b>Silt (ML)</b> Low plasticity, soft, dry, light brown, no odor	2
4					8.2 384°F		100	<b>Sandy Gravelly Clay (CL)</b> Low plasticity, firm, damp, brown, no odor	4
6					90°F		100	<b>Sandy Gravelly Clay (CL)</b> Similar to above, black, hydrocarbon odor, moist	6
8					394 90°F		100	<b>Sandy Gravelly Clay (CL)</b> Similar to above, saturated, oily, hydrocarbon odor, black to dark brown to brown	8
10								Total Depth = 7' BGL	10
12									12
14									14
16									16

Set temporary 1" Well  
Screened: 2-7' bgl  
Filter Pack: 1-7' bgl  
Bentonite: 0-1' bgl  
Stickup: 3.25'

**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01809  
**Geologist:** Tracy Payne  
**Driller:** N/A  
**Drilling Rig:** N/A  
**Drilling Method:** Hand Auger  
**Sampling Method:** Auger Head  
**Comments:**

**LOG OF BORING**

**Boring No.:** HA5  
**Start Date:** 7/11/2013 15:10  
**Finish Date:** 7/11/2013 16:15

**Total Depth:** 8' bgl  
**Ground Water:** Saturated @ 5.5' bgl  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** --  
**Site Coordinates:**  
**N** **E**

Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
0								Ground Surface	0
2					8.5 80°F		100	<b>Silt (ML)</b> Low plasticity, very dense, dry to damp, brown, no odor	2
4							100	<b>Sandy Clay/Clayey Sand (CL)</b> Low plasticity, fine grain, compact, brown, no odor	4
6				5.5'	19.4 112°F 80°F		100	<b>Clayey Sand (SC)</b> Similar to above, saturated at 5.5' bgl, becomes black, oily, hydrocarbon odor	6
8								Total Depth = 8' BGL	8
10									10
12									12
14									14
16									16

**RPS****Client:** Western Refining Southwest, Inc.**Site:** Gallup Refinery - Seep West of Tank 102**Job No.:** UEC01759**Geologist:** Tracy Payne**Driller:** EDI**Drilling Rig:** CME 75**Drilling Method:** Hollow Stem Auger**Sampling Method:** Split Spoon**Comments:** Approximately 75' from center of road located north of SB01; N 35°29.328' W 108°25.743'**LOG OF BORING****Boring No.:** SB01**Start Date:** 7/12/2013 11:45**Finish Date:** 7/12/2013 15:00**Total Depth:** 20' bgl**Ground Water:** Saturated @ 8' bgl**Elev., TOC (ft. msl):** --**Elev., PAD (ft. msl):** --**Elev., GL (ft. msl):** --**Site Coordinates:****N****E**

Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
0								Ground Surface	0
2					164 80°F		60	<b>Fill (Silt/Sand)</b> Fine grain, loose, dry to damp, brown, no odor	2
4					423 80°F		40	<b>Silty Clay (CL)</b> Low plasticity, firm, damp, brown/reddish brown, no odor	4
6					330 80°F		70	<b>Silty Clay (CL)</b> Similar to above, no odor	6
8					75 80°F		90	<b>Silty Clay (CL)</b> Similar to above, sandy at base from 7.75-8.0' bgl, no odor	8
10					326 80°F		90	<b>Silty Clay (CL)</b> Fine grain sand seams throughout, saturated, phase-separated hydrocarbon, hydrocarbon odor, clear phase-separated hydrocarbon poured out of split spoon	10
12					312 80°F		90	<b>Silty Clay (CL)</b> Similar to above with sand seams, saturated with phase-separated hydrocarbon, hydrocarbon odor, dark brown	12
14					368 80°F		80	<b>Gravelly Sand (SW)</b> Fine to medium to coarse grain, loose, saturated with phase-separated hydrocarbon, black, hydrocarbon odor	14
16					700 80°F		60	<b>Gravelly Sand (SW)</b> Similar to above	16
18							10	<b>Silty Sand/Silty Clay (SM/CL)</b> Low plasticity, firm, moist, brown, faint odor, no phase-separated hydrocarbon	18
								<b>Silty Clay (CL)</b> Poor recovery	

**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01759  
**Geologist:** Tracy Payne  
**Driller:** EDI  
**Drilling Rig:** CME 75  
**Drilling Method:** Hollow Stem Auger  
**Sampling Method:** Split Spoon  
**Comments:** Approximately 75' from center of road located north of SB01; N 35°29.328' W108°25.743'

## LOG OF BORING

**Boring No.:** SB01  
**Start Date:** 7/12/2013 11:45  
**Finish Date:** 7/12/2013 15:00

**Total Depth:** 20' bgl  
**Ground Water:** Saturated @ 8' bgl  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** --  
**Site Coordinates:**  
N E

Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
20					225 80 °F		80	<b>Clay (CH)</b> High plasticity, very dense, damp, light reddish brown, faint odor <b>Siltstone/Sandstone</b> Fine to very fine grain, compact, stiff, friable, damp, greenish gray, faint odor	20
22								Total Depth = 20' BGL	22
24									24
26									26
28									28
30									30
32									32
34									34
36									36

Set 1" Temporary Well  
Screened: 7-17' bgl  
Filter Pack: 5-17' bgl  
Bentonite: 0-5' bgl

**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01759  
**Geologist:** Tracy Payne  
**Driller:** EDI  
**Drilling Rig:** CME 75  
**Drilling Method:** Hollow Stem Auger  
**Sampling Method:** Split Spoon  
**Comments:** N 35°29.321' W 108°25.744'

**LOG OF BORING****Boring No.:** SB02**Start Date:** 7/15/2013 09:30**Finish Date:** 7/15/2013 11:00**Total Depth:** 16' bgl**Ground Water:** Saturated @ 8' bgl**Elev., TOC (ft. msl):** --**Elev., PAD (ft. msl):** --**Elev., GL (ft. msl):** --**Site Coordinates:****N****E**

Depth (ft.)	Sampling						Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class		
0							Ground Surface	0
2					14.2 83 °F		<b>Fill (Silt)</b> Very low plasticity, very dense, dry, reddish brown	2
4							No recovery	4
6					96.9 83 °F		<b>Silty Clay (CL)</b> Low plasticity, soft, damp, reddish brown, no odor, calcareous	6
8					332 83 °F		<b>Silty Clay (CL)</b> Similar to above, faint odor	8
10					515 83 °F		<b>Silty Clay (CL)</b> Similar to above, 3" sand/gravel seam at 8.75-9' bgl, saturated, hydrocarbon odor, phase-separated hydrocarbon present	10
12					650 83 °F		<b>Sandy/Silty Clay (CL)</b> Low plasticity, soft, moist to saturated, reddish brown, hydrocarbon odor, phase-separated hydrocarbon present	12
14					1330 83 °F		<b>Clayey Sand (SC)</b> Fine grain, loose to compact, saturated, hydrocarbon odor, reddish brown	14
16					87 83 °F		<b>Clay (CH)</b> High plasticity, firm to stiff, damp, reddish brown, faint odor	16
							<b>Silt/ Silty Clay (CL)</b> Low plasticity, soft, damp, yellow-greenish gray, no odor	
Total Depth = 16' BGL								

**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01759  
**Geologist:** Tracy Payne  
**Driller:** EDI  
**Drilling Rig:** CME 75  
**Drilling Method:** Hollow Stem Auger  
**Sampling Method:** Split Spoon  
**Comments:** N 35°29.310' W 108°25.742'

**LOG OF BORING**

**Boring No.:** SB03  
**Start Date:** 7/15/2013 11:00  
**Finish Date:** 7/15/2013 16:00

**Total Depth:** 20' bgl  
**Ground Water:** Saturated @ 14' bgl  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** --  
**Site Coordinates:**  
**N** **E**

Depth (ft.)	Sampling						Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class		
0							Ground Surface	0
2					10.2 84°F	90	<b>Fill (Silt/Gravel)</b> Low plasticity, very dense, dry, light brown, no odor	2
4					11.7 84°F	80	<b>Fill (Silt/Gravel)</b> Similar to above, black, dense at base, no odor	4
6					16 84°F	90	<b>Silty Clay (CL)</b> Low plasticity, stiff, damp, reddish brown, no odor, calcareous	6
8					26 84°F	90	<b>Gravelly Sandy Clay (CL)</b> Low plasticity, loose to firm, damp, brown, no odor	8
10					708 84°F	70	<b>Silty Clay (CL)</b> Low plasticity, very soft, damp, reddish brown, hydrocarbon odor	10
12					369 84°F	80	<b>Clay (CH)</b> High plasticity, firm, damp, reddish brown, hydrocarbon odor	12
14					660 84°F	90	<b>Sandy Clay/Clayey Sand (SC/CL)</b> Low plasticity, fine grain, soft, damp, reddish brown, hydrocarbon odor	14
16					85 84°F	90	<b>Sandy Clay (SC)</b> Similar to above, saturated sand seams, hydrocarbon odor, brown	16
					64 84°F	70	<b>Sandy Clay (SC)</b> Similar to above, moist to saturated, hydrocarbon odor, brown	

**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01759  
**Geologist:** Tracy Payne  
**Driller:** EDI  
**Drilling Rig:** CME 75  
**Drilling Method:** Hollow Stem Auger  
**Sampling Method:** Split Spoon  
**Comments:** N 35°29.310' W 108°25.742'

## LOG OF BORING

**Boring No.:** SB03**Start Date:** 7/15/2013 11:00**Finish Date:** 7/15/2013 16:00**Total Depth:** 20' bgl**Ground Water:** Saturated @ 14' bgl**Elev., TOC (ft. msl):** --**Elev., PAD (ft. msl):** --**Elev., GL (ft. msl):** --**Site Coordinates:**

N

E

Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
19					33 84°F		90	<b>Sandy Clay (SC)</b> Low plasticity, fine grain, soft, moist to saturated, light reddish brown, hydrocarbon odor, gravelly at base	19
21								<b>Silty Clay (CL)</b> Low plasticity, stiff, damp, light reddish brown grading to yellowish/greenish gray, becomes more silty at base	21
23								Total Depth = 20' BGL	23
25									25
27									27
29									29
31									31
33									33
35									35

Set 1" Temporary Well  
Screened: 10-20' bgl  
10/20 Filter Pack: 8-20' bgl  
Bentonite: 0-8' bgl

**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01759  
**Geologist:** Tracy Payne  
**Driller:** EDI  
**Drilling Rig:** CME 75  
**Drilling Method:** Hollow Stem Auger  
**Sampling Method:** Split Spoon  
**Comments:** N 35°29.303' W 108°25.742'

**LOG OF BORING**

**Boring No.:** SB04  
**Start Date:** 7/16/2013 08:30  
**Finish Date:** 7/16/2013 11:00

**Total Depth:** 24' bgl  
**Ground Water:** Saturated @ 17' bgl  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** --  
**Site Coordinates:**  
**N E**

Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
0								Ground Surface	0
2					5.4 70°F		90	<b>Fill (Silty Clay (CL))</b> Low plasticity, very stiff, damp to dry, reddish brown, no odor, calcareous, gravelly	2
4					574 70°F		20	<b>Fill (Silty Sand (SM))</b> Fine grain, loose, damp, black, hydrocarbon odor	4
6					532 70°F		50	<b>Fill (Silty Clay (CL))</b> Low plasticity, soft, damp, reddish brown, hydrocarbon odor, gravel present	6
8					383 70°F		80	<b>Silty Clay (CL)</b> Similar to above, hydrocarbon odor, brown, gravel present	8
10					560 70°F		60	<b>Silty Clay (CL)</b> Similar to above, hydrocarbon odor	10
12					1050 70°F		60	<b>Silty Clay (CL)</b> Low plasticity, soft, damp to moist, brown, hydrocarbon odor	12
14					784 70°F		80	<b>Sandy Silty Clay (CL)</b> Similar to above, hydrocarbon odor, fine grain sand throughout in thin lenses, moist	14
16					851 70°F		90	<b>Sandy Clay (CL)</b> Low plasticity, firm to soft, moist, dark brown, hydrocarbon odor	16
				17'	572 70°F		80	<b>Sandy Clay (CL)</b> Similar to above	



**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01759  
**Geologist:** Tracy Payne  
**Driller:** EDI  
**Drilling Rig:** CME 75  
**Drilling Method:** Hollow Stem Auger  
**Sampling Method:** Split Spoon  
**Comments:** N 35°29.303' W 108°25.742'

## LOG OF BORING

**Boring No.:** SB04**Start Date:** 7/16/2013 08:30**Finish Date:** 7/16/2013 11:00**Total Depth:** 24' bgl**Ground Water:** Saturated @ 17' bgl**Elev., TOC (ft. msl):** --**Elev., PAD (ft. msl):** --**Elev., GL (ft. msl):** --**Site Coordinates:****N****E**

Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
19					640 70 °F		80	<b>Sandy Clay (CL)</b> Low plasticity, firm to soft, hydrocarbon odor, moist to slightly saturated	19
21					150 70 °F		70	<b>Sandy Clay (CL)</b> Similar to above, hydrocarbon odor, moist to saturated, saturated sand/gravel lense 21.75-22' bgl	21
23					69 70 °F		80	<b>Clay (CH)</b> High plasticity, stiff, damp, light yellowish brown, odor	23
25								Total Depth = 24' BGL	25
27									27
29									29
31									31
33									33
35									35

Set 1" Temporary Well  
Screened: 9-24' bgl  
10/20 Filter Pack: 7-24' bgl  
Bentonite: 0-7' bgl

**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01759  
**Geologist:** Tracy Payne  
**Driller:** EDI  
**Drilling Rig:** CME 75  
**Drilling Method:** Hollow Stem Auger  
**Sampling Method:** Split Spoon  
**Comments:** N 35°29.294' W 108°25.742'

**LOG OF BORING**

**Boring No.:** SB05  
**Start Date:** 7/16/2013 11:15  
**Finish Date:** 7/16/2013 14:00

**Total Depth:** 24' bgl  
**Ground Water:** Saturated @ 12' bgl  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** --  
**Site Coordinates:**  
**N E**

Depth (ft.)	Sampling						Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class		
0							Ground Surface	0
2					6.8 90°F	60	<b>Fill (Silt/Gravel)</b> Loose, damp to dry, brown, no odor	2
4					9.3 90°F	60	<b>Fill (Silt/Gravel)</b> Similar to above, no odor	4
6					21.3 90°F	70	<b>Fill (Silty Clay/Gravel)</b> Low plasticity, very stiff, dry, no odor, brown	6
8					80.5 90°F	70	<b>Fill (Silty Clay/Gravel)</b> Similar to above, faint hydrocarbon odor, damp	8
10					137 90°F	60	<b>Fill (Silty Clay)</b> Similar to above, hydrocarbon odor	10
12				12'	1255 90°F	40	<b>Silty Clay (CL)</b> Low plasticity, firm, damp, dark brown, hydrocarbon odor	12
14					784 90°F	70	<b>Sandy Silty Clay (CL)</b> Low plasticity, soft, damp to saturated in sand seams, brown to dark brown, hydrocarbon odor	14
16					1107 90°F	70	<b>Sandy Clay (CL)</b> Similar to above, moist to saturated, hydrocarbon odor	16
					632 90°F	90	<b>Silty Clay (CL)</b> Low to moderate plasticity, firm, damp to moist, reddish brown, hydrocarbon odor	

**RPS****Client:** Western Refining Southwest, Inc.**Site:** Gallup Refinery - Seep West of Tank 102**Job No.:** UEC01759**Geologist:** Tracy Payne**Driller:** EDI**Drilling Rig:** CME 75**Drilling Method:** Hollow Stem Auger**Sampling Method:** Split Spoon**Comments:** N 35°29.294' W 108°25.742'**Total Depth:** 24' bgl**Ground Water:** Saturated @ 12' bgl**Elev., TOC (ft. msl):** --**Elev., PAD (ft. msl):** --**Elev., GL (ft. msl):** --**Site Coordinates:****N****E****LOG OF BORING****Boring No.:** SB05**Start Date:** 7/16/2013 11:15**Finish Date:** 7/16/2013 14:00

Depth (ft.)	Sampling						Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class		
19					1415 90°F		<b>Sandy Clay (CL)</b> Low plasticity, soft, moist to saturated in sand seams, dark brown, hydrocarbon odor	19
21					225 90°F		<b>Sandy Clay (CL)</b> Similar to above, saturated, dark brown to black, hydrocarbon odor, gravelly at base	21
23					45 90°F		<b>Sandy Silty Clay (CL)</b> Similar to above, decrease in sand, hydrocarbon odor, saturated, sheen observed in split spoon	23
25							<b>Sandy Silty Clay (CL)</b> Similar to above, hydrocarbon odor, moist, dark brown grading to brown, faint odor at base	25
27							Total Depth = 24' BGL	27
29								29
31								31
33								33
35								35

Set 1" Temporary Well  
 Screened: 9-24' bgl  
 10/20 Filter Pack: 7-24' bgl  
 Bentonite: 0-7' bgl

**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01809  
**Geologist:** Tracy Payne  
**Driller:** Precision Sampling  
**Drilling Rig:** Geoprobe 6625 CPT  
**Drilling Method:** Direct Push  
**Sampling Method:** Split Spoon  
**Comments:** N 35°29.282' W 108°25.739'

**LOG OF BORING**

**Boring No.:** SB06  
**Start Date:** 7/18/2013 10:00  
**Finish Date:** 7/18/2013 10:45

**Total Depth:** 14' bgl  
**Ground Water:** Saturated @ 10' bgl  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** --  
**Site Coordinates:**  
**N E**

Depth (ft.)	Sampling						Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class		
0							Ground Surface	0
2					52.6 75°F	60	<b>Fill (Silty Clay/Gravel)</b> Low plasticity, firm, damp, brown, faint odor	2
4					180 75°F	100	<b>Silty Clay (CL)</b> Low plasticity, firm, damp, reddish brown, odor, calcareous	4
6					224 75°F	90	<b>Sandy Clay/Clayey Sand (CL/SC)</b> Low plasticity, fine grain, damp, dark brown, hydrocarbon odor, sand seams present	6
8					1202 75°F	90	<b>Sandy Clay/Clayey Sand (CL)</b> Similar to above	8
10					1228 75°F	90	<b>Sandy Silty Clay (CL)</b> Low plasticity, soft, damp, dark brown, hydrocarbon odor	10
12					1525 75°F	90	<b>Sandy Clay (CL)</b> Similar to above, with moist to saturated sand seams, hydrocarbon odor	12
14					377 75°F	90	<b>Clayey Sand (SC)</b> Fine grain, loose to compact, saturated, hydrocarbon odor, dark brown	14
16							<b>Sandy Clay (CL)</b> Low plasticity, soft to firm, moist, dark brown, hydrocarbon odor	16
Total Depth = 14' BGL								
Set 1" Temporary Well Screened: 9-14' bgl 10/20 Filter Pack: 6-14' bgl Bentonite: 0-6' bgl								

**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01809  
**Geologist:** Tracy Payne  
**Driller:** Precision Sampling  
**Drilling Rig:** Geoprobe 6625 CPT  
**Drilling Method:** Direct Push  
**Sampling Method:** Split Spoon  
**Comments:** N 35°29.287' W 108°25.728'

**LOG OF BORING**

**Boring No.:** SB07  
**Start Date:** 7/18/2013 10:55  
**Finish Date:** 7/18/2013 12:45

**Total Depth:** 16' bgl  
**Ground Water:** Saturated @ 14' bgl  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** --  
**Site Coordinates:**  
**N** **E**

Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
0								Ground Surface	0
2					163 83°F		90	<b>Fill (Silty Clay/Gravel)</b> Low plasticity, firm, dry to damp, brown, hydrocarbon odor	2
4					1811 83°F		90	<b>Fill (Silty Clay/Gravel)</b> Similar to above, hydrocarbon odor	4
6					2134 83°F		60	<b>Fill (Gravel/Sand/Clay)</b> Low plasticity, moist to saturated at base, dark brown to black, hydrocarbon odor	6
8					299 83°F		90	<b>Silty Clay (CL)</b> Low plasticity, firm to stiff, light brown/brown, damp, faint hydrocarbon odor	8
10					413 83°F		90	<b>Silty Clay (CL)</b> Similar to above	10
12					336 83°F		50	<b>Sandy Clay (CL)</b> Low plasticity, firm, brown, damp, hydrocarbon odor, gravelly at base, fine to medium grain sand, tripped in auger to seal off fill (4-6") from sloughing into borehole	12
14					2186 86°F		70	<b>Sandy Clay (CL)</b> Similar to above, moist, hydrocarbon odor, dark brown	14
16					1290 86°F		90	<b>Clayey Sand (SC)</b> Fine grain, compact, very moist to saturated, hydrocarbon odor, dark brown	16
								Total Depth = 16' BGL	

**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01809  
**Geologist:** Tracy Payne  
**Driller:** Precision Sampling  
**Drilling Rig:** Geoprobe 6625 CPT  
**Drilling Method:** Direct Push  
**Sampling Method:** Split Spoon  
**Comments:** N 35°29.295' W 108°25.732'

**LOG OF BORING****Boring No.:** SB08**Start Date:** 7/18/2013 13:40**Finish Date:** 7/19/2013 09:40**Total Depth:** 20' bgl**Ground Water:** Saturated @ 17.5' bgl**Elev., TOC (ft. msl):** --**Elev., PAD (ft. msl):** --**Elev., GL (ft. msl):** --**Site Coordinates:****N****E**

Depth (ft.)	Sampling						Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class		
0							Ground Surface	0
					15.9 78°F	70	<b>Fill (Silt/Silty Clay)</b> Low plasticity, stiff, dry, light brown, no odor	
2					228 78°F	60	<b>Fill (Silty Clay/Gravel)</b> Similar to above, dry, no odor	2
4					177 78°F	60	<b>Fill (Silty Clay)</b> (7/19/2013 08:45 - continued sampling) Similar to above, damp, no odor	4
6					264 78°F	40	<b>Fill (Silty Clay)</b> Low plasticity, soft, damp, brown, gravel and wood debris	6
8							No recovery	8
10					90 78°F	10	<b>Fill (Silty Clay/Gravel)</b> Similar to above	10
12								12
14					660 78°F	100	<b>Sandy Silty Clay (CL)</b> Low plasticity, soft, damp to moist at base, brown, hydrocarbon odor	14
16					1115 78°F	100	<b>Sandy Silty Clay (CL)</b> Similar to above, moist, oily, hydrocarbon odor	16
				17.5'			<b>Gravelly Sandy Clay (CL)</b> Low plasticity, firm, moist, oily, 1" gravel, strong hydrocarbon odor	

**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01809  
**Geologist:** Tracy Payne  
**Driller:** Precision Sampling  
**Drilling Rig:** Geoprobe 6625 CPT  
**Drilling Method:** Direct Push  
**Sampling Method:** Split Spoon  
**Comments:** N 35°29.295' W 108°25.732'

**LOG OF BORING****Boring No.:** SB08**Start Date:** 7/18/2013 13:40**Finish Date:** 7/19/2013 09:40**Total Depth:** 20' bgl**Ground Water:** Saturated @ 17.5' bgl**Elev., TOC (ft. msl):** --**Elev., PAD (ft. msl):** --**Elev., GL (ft. msl):** --**Site Coordinates:**

N

E

Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
19					225		100	<b>Clayey Gravel Sand (SC)</b> Fine to medium grain, loose, saturated, phase-separated hydrocarbon present, black, hydrocarbon odor	19
21					78°F		100	<b>Sandy Clay (CL)</b> Low plasticity, firm, moist, black hydrocarbon odor	21
23								Total Depth = 20' BGL	23
25									25
27									27
29									29
31									31
33									33
35									35

Set 1" Temporary Well  
Screened: 15-20' bgl  
10/20 Filter Pack: 13-20' bgl  
Bentonite: 0-13' bgl

**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01809  
**Geologist:** Tracy Payne  
**Driller:** Precision Sampling  
**Drilling Rig:** Geoprobe 6625 CPT  
**Drilling Method:** Direct Push  
**Sampling Method:** Split Spoon  
**Comments:** N 35°29.302' W 108°25.723'

**Total Depth:** 18' bgl  
**Ground Water:** Saturated @ 14' bgl  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** --  
**Site Coordinates:**

**N** **E**

**LOG OF BORING**

**Boring No.:** SB09  
**Start Date:** 7/19/2013 09:50  
**Finish Date:** 7/19/2013 10:50

Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
0								Ground Surface	0
2					763 86°F		100	<b>Fill (Silty Clay)</b> Low plasticity, firm, damp, dark brown, hydrocarbon odor	2
4					400 86°F		50	<b>Fill (Silty Clay)</b> Similar to above, hydrocarbon odor	4
6					515 86°F		50	<b>Silty Clay (CL)</b> Low plasticity, firm to soft, damp, reddish brown, hydrocarbon odor	6
8					734 86°F		90	<b>Silty Clay (CL)</b> Similar to above, soft, hydrocarbon odor	8
10					645 86°F		100	<b>Silty Clay (CL)</b> Low plasticity, firm, damp, reddish brown, hydrocarbon odor, gravel present, calcareous	10
12					1221 86°F		70	<b>Gravelly Clayey Sand (SC)</b> Fine grain, loose to compact, damp, brown, 1/2" gravel, hydrocarbon odor	12
14					602 86°F		60	<b>Clayey Gravelly Sand (SC)</b> Similar to above, moist, hydrocarbon odor	14
16					621 86°F		70	<b>Gravelly Sand (SW)</b> Fine to medium grain, loose, saturated, phase-separated hydrocarbon, strong hydrocarbon odor	16
18					835 86°F		90	<b>Gravelly Sand (SW)</b> Similar to above, saturated, hydrocarbon odor	18
								Total Depth = 18' BGL	



**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01809  
**Geologist:** Tracy Payne  
**Driller:** Precision Sampling  
**Drilling Rig:** Geoprobe 6625 CPT  
**Drilling Method:** Direct Push  
**Sampling Method:** Split Spoon  
**Comments:** N 35°29.295' W 108°25.710'

**LOG OF BORING****Boring No.:** SB10**Start Date:** 7/19/2013 10:55**Finish Date:** 7/19/2013 12:00**Total Depth:** 10' bgl**Ground Water:** Saturated @ 5' bgl**Elev., TOC (ft. msl):** --**Elev., PAD (ft. msl):** --**Elev., GL (ft. msl):** --**Site Coordinates:****N****E**

Depth (ft.)	Sampling						Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class		
0							Ground Surface	0
2					132 88°F	90	<b>Fill (Silty Clay)</b> Low plasticity, firm, dry to damp, brown, faint odor	2
4					235 88°F	90	<b>Fill (Clay/Sand/Gravel)</b> Damp, hydrocarbon odor	4
6				5	1202 88°F	50	<b>Fill (Clay/Caliche Rock)</b> Odor	6
8					372 88°F	90	<b>Silty Sand (SM)</b> Fine grain, loose, saturated, phase-separated hydrocarbon, oily, brown to dark brown, hydrocarbon odor	8
10						--	<b>Silty Sand (SM)</b> Similar to above, saturated	10
12							<b>Silty Clay (CL)</b> Low plasticity, firm, damp, brown, hydrocarbon odor	12
14							No recovery	14
16							Total Depth = 10' BGL	16

Set 1" Temporary Well  
 Screened: 4-9' bgl  
 10/20 Filter Pack: 2-9' bgl  
 Bentonite: 0-2' bgl

**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01809  
**Geologist:** Tracy Payne  
**Driller:** Precision Sampling  
**Drilling Rig:** Geoprobe 6625 CPT  
**Drilling Method:** Direct Push  
**Sampling Method:** Split Spoon  
**Comments:** N 35°29.302' W 108°25.716'

**LOG OF BORING****Boring No.:** SB11**Start Date:** 7/19/2013 12:15**Finish Date:** 7/19/2013 13:10**Total Depth:** 14' bgl**Ground Water:** Saturated @ 10.5' bgl**Elev., TOC (ft. msl):** --**Elev., PAD (ft. msl):** --**Elev., GL (ft. msl):** --**Site Coordinates:****N****E**

Depth (ft.)	Sampling						Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class		
0							Ground Surface	0
2					85 95°F	90	<b>Fill (Silty Clay/Gravel)</b> Low plasticity, firm, dry to damp, odor	2
4					273 95°F	80	<b>Fill (Silty Clay/Gravel)</b> Similar to above	4
6					86 95°F	90	<b>Clay (CH)</b> High plasticity, stiff, damp, brown with light brown pockets of silt, odor	6
8					308 95°F	90	<b>Silty Clay (CL)</b> Low plasticity, soft/crumblly, dry to damp, brown, hydrocarbon odor	8
10					1126 95°F	80	<b>Silty Clay (CL)</b> Low plasticity, soft, damp, brown, hydrocarbon odor	10
12					789 95°F	80	<b>Silty Clay (CL)</b> Similar to above, moist	12
14					558 95°F	90	<b>Silty Clay (CL)</b> Medium grain, loose, saturated, phase-separated hydrocarbon, hydrocarbon odor, brown	14
							<b>Sandy Silty Clay (CL)</b> Low plasticity, soft to firm, moist, hydrocarbon odor	
							<b>Sandy Clay (CL)</b> Low plasticity, soft to compact, saturated, phase-separated hydrocarbon, hydrocarbon odor	
16							Set 1" Temporary Well Screened: 9-14' bgl 10/20 Filter Pack: 7-14' bgl Bentonite: 0-7' bgl	16

Total Depth = 14' BGL

**RPS****Client:** Western Refining Southwest, Inc.**Site:** Gallup Refinery - Seep West of Tank 102**Job No.:** UEC01809**Geologist:** Tracy Payne**Driller:** Precision Sampling**Drilling Rig:** Geoprobe 6625 CPT**Drilling Method:** Direct Push**Sampling Method:** Split Spoon**Comments:** N 35°29.311' W 108°25.718'**Total Depth:** 16' bgl**Ground Water:** Saturated @ 12' bgl**Elev., TOC (ft. msl):** --**Elev., PAD (ft. msl):** --**Elev., GL (ft. msl):** --**Site Coordinates:**

N

E

**LOG OF BORING****Boring No.:** SB12**Start Date:** 7/19/2013 13:15**Finish Date:** 7/19/2013 14:20

Depth (ft.)	Sampling						Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class		
0							Ground Surface	0
2					116 95°F		<b>Fill (Silty Clay)</b> Low plasticity, firm, dry to damp, trace gravel, no odor, brown	2
4					231 95°F		<b>Fill (Silty Clay)</b> Similar to above, wood debris, faint odor	4
6					235 95°F		<b>Silty Clay (CL)</b> Low plasticity, soft/crumbly, damp, brown, odor, calcareous, gravel present	6
8					237 95°F		<b>Sandy Silty Clay (CL)</b> Low plasticity, soft, damp to moist, hydrocarbon odor, brown	8
10					360 95°F		<b>Silty Clay (CL)</b> Similar to above, hydrocarbon odor	10
12					1070 95°F		<b>Silty Clay (CL)</b> Similar to above with fine grain sand seams, phase-separated hydrocarbon in sand seams, hydrocarbon odor	12
14					373 95°F		<b>Sandy Clay/Clayey Sand (CL/SC)</b> Low plasticity, fine grain, compact, saturated, phase-separated hydrocarbon present, dark brown to black, hydrocarbon odor	14
16					275 95°F		<b>Silty Sand (SM)</b> Medium grain, compact, saturated, phase-separated hydrocarbon, odor, dark brown	16
							Total Depth = 16' BGL	

**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01809  
**Geologist:** Tracy Payne  
**Driller:** Precision Sampling  
**Drilling Rig:** Geoprobe 6625 CPT  
**Drilling Method:** Direct Push  
**Sampling Method:** Split Spoon  
**Comments:** N 35°29.316' W 108°25.715'

**Total Depth:** 16' bgl  
**Ground Water:** Saturated @ 12' bgl  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** --  
**Site Coordinates:**

N E

**LOG OF BORING****Boring No.:** SB13**Start Date:** 7/19/2013 14:30**Finish Date:** 7/19/2013 16:00

Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
0								Ground Surface	0
2					21.9 95°F		90	<b>Fill (Silty Clay)</b> Low plasticity, stiff, dry to damp, no odor, brown	2
4					32.7 95°F		90	<b>Fill (Silty Clay)</b> Similar to above, gravel	4
6					36.1 95°F		90	<b>Silty Clay (CL)</b> Low plasticity, soft, damp, brown, faint odor	6
8					37 95°F		90	<b>Silty Clay (CL)</b> Similar to above	8
10					533 95°F		90	<b>Silty Clay (CL)</b> Similar to above	10
12					314 95°F		90	<b>Sandy Clay (CL)</b> Similar to above, increase in sand and moisture	12
14					651 95°F		90	<b>Sandy Clay (CL)</b> Similar to above, moist, hydrocarbon odor, dark brown	14
16					587 95°F		90	<b>Sandy Clay/Clayey Sand (CL/SC)</b> Fine to medium grain, compact, moist to saturated, hydrocarbon odor	16
								<b>Sandy Clay/Clayey Sand (CL/SC)</b> Similar to above, saturated, sheen observed on split spoon, black, hydrocarbon odor	
								Total Depth = 16' BGL	

**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01809  
**Geologist:** Tracy Payne  
**Driller:** Precision Sampling  
**Drilling Rig:** Geoprobe 6625 CPT  
**Drilling Method:** Direct Push  
**Sampling Method:** Split Spoon  
**Comments:** N 35°29.327' W 108°25.716'

**LOG OF BORING****Boring No.:** SB14**Start Date:** 7/23/2013 08:55**Finish Date:** 7/23/2013 10:25**Total Depth:** 18' bgl**Ground Water:** Saturated @ 14' bgl**Elev., TOC (ft. msl):** --**Elev., PAD (ft. msl):** --**Elev., GL (ft. msl):** --**Site Coordinates:****N****E**

Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
0								Ground Surface	0
2					10.4 86°F		90	<b>Fill (Silty Clay/Gravel)</b> Low plasticity, stiff, damp to dry, brown, no odor	2
4					11.3 86°F		90	<b>Fill (Silty Clay/Gravel)</b> Similar to above, odor	4
6					34.6 86°F		90	<b>Fill (Silty Clay/Gravel)</b> Similar to above, odor	6
8					94 86°F		90	<b>Silty Clay (CL)</b> Low plasticity, firm, damp, brown	8
10					129 86°F		90	<b>Silty Clay/Clayey Silt (CL/ML)</b> Low plasticity, soft, crumbly, damp, brown, odor	10
12					143 86°F		90	<b>Sandy Silty Clay (CL)</b> Similar to above, with fine grain sand, increase in moisture, faint odor	12
14					1225 86°F		90	<b>Sandy Silty Clay (CL)</b> Similar to above, hydrocarbon odor	14
16					1314 86°F		90	<b>Sandy Clay/Clayey Sand (CL/SC)</b> Low plasticity, soft, fine grain, moist to saturated, hydrocarbon odor, dark brown	16
18					745 86°F		90	<b>Clayey Sand (SC)</b> Similar to above, saturated, hydrocarbon odor	18
								Total Depth = 18' BGL	

**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01809  
**Geologist:** Tracy Payne  
**Driller:** Precision Sampling  
**Drilling Rig:** Geoprobe 6625 CPT  
**Drilling Method:** Direct Push  
**Sampling Method:** Split Spoon  
**Comments:** N 35°29.327' W 108°25.730'

**Total Depth:** 22' bgl  
**Ground Water:** Saturated @ 18' bgl  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** --  
**Site Coordinates:**

N

E

**LOG OF BORING****Boring No.:** SB15**Start Date:** 7/23/2013 10:40**Finish Date:** 7/23/2013 12:35

Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
0								Ground Surface	0
2					6 81 °F		50	<b>Silty Clay (CL)</b> Low plasticity, stiff, damp, brown	2
4					6.3 81 °F		90	<b>Silty Clay (CL)</b> Similar to above	4
6					8 81 °F		90	<b>Silty Clay (CL)</b> Low plasticity, soft/crumblly, damp, light brown	6
8							--	No recovery	8
10					14.9 81 °F		90	<b>Silty Sandy Clay (CL)</b> Low plasticity, soft/crumblly, damp, brown	10
12					30.5 81 °F		90	<b>Silty Sandy Clay (CL)</b> Similar to above	12
14					50.8 81 °F		90	<b>Sandy Clay (CL)</b> Low plasticity, soft, damp to moist, brown	14
16					218 81 °F		90	<b>Clay (CH)</b> High plasticity, soft, moist, brown, odor	16
					453 81 °F		90	<b>Clay (CH)</b> Similar to above, odor	

**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01809  
**Geologist:** Tracy Payne  
**Driller:** Precision Sampling  
**Drilling Rig:** Geoprobe 6625 CPT  
**Drilling Method:** Direct Push  
**Sampling Method:** Split Spoon  
**Comments:** N 35°29.327' W 108°25.730'

## LOG OF BORING

**Boring No.:** SB15  
**Start Date:** 7/23/2013 10:40  
**Finish Date:** 7/23/2013 12:35

**Total Depth:** 22' bgl  
**Ground Water:** Saturated @ 18' bgl  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** --  
**Site Coordinates:**  
N E

Depth (ft.)	Sampling						Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class		
19					850 81 °F		<b>Sandy Clay (CL)</b> Low plasticity, soft, moist to saturated, dark brown, hydrocarbon odor	19
21					1504 81 °F		<b>Sandy Clay (CL)</b> Similar to above, saturated, hydrocarbon odor	21
23							Total Depth = 22' BGL	23
25								25
27								27
29								29
31								31
33								33
35								35

Set 1" Temporary Well  
Screened: 17-22' bgl  
10/20 Filter Pack: 15-22' bgl  
Bentonite: 0-15' bgl

**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01809  
**Geologist:** Tracy Payne  
**Driller:** Precision Sampling  
**Drilling Rig:** Geoprobe 6625 CPT  
**Drilling Method:** Direct Push  
**Sampling Method:** Split Spoon  
**Comments:** N 35°29.336' W 108°25.724'

**Total Depth:** 14' bgl  
**Ground Water:** Saturated @ 9' bgl  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** --  
**Site Coordinates:**  
**N** **E**

**LOG OF BORING**

**Boring No.:** SB16  
**Start Date:** 7/23/2013 13:25  
**Finish Date:** 7/23/2013 17:00

Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
0								Ground Surface	0
2					90 94°F		90	<b>Fill (Silt/Gravel)</b> Low plasticity, loose, dry, light brown	2
4					14 94°F		90	<b>Fill (Silty Clay/Gravel)</b> Similar to above	4
6					431 94°F		90	<b>Silty Clay (CL)</b> Low plasticity, stiff, dry, reddish brown, odor, calcareous	6
8					448 94°F		60	<b>Sand (SP)</b> Fine grain, loose, dry, reddish brown, odor	8
10					654 94°F		60	<b>Sand (SP)</b> Similar to above, saturated at 9' bgl, phase-separated hydrocarbon, hydrocarbon odor	10
12					1559 94°F		90	<b>Clayey Sand (SC)</b> Fine grain, soft, saturated, phase-separated hydrocarbon, brown to black, hydrocarbon odor	12
14					713 94°F		90	<b>Clayey Sand/Sandy Clay (SC/CL)</b> Low plasticity, firm to stiff, moist to saturated, hydrocarbon odor, dark brown	14
16								Total Depth = 14' BGL	16
								Set 1" Temporary Well Screened: 8-13' bgl 10/20 Filter Pack: 6-13' bgl Bentonite: 0-6' bgl	



**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01809  
**Geologist:** Tracy Payne  
**Driller:** Precision Sampling  
**Drilling Rig:** Geoprobe 6625 CPT  
**Drilling Method:** Direct Push  
**Sampling Method:** Split Spoon  
**Comments:** N 35°29.336' W 108°25.739'

**LOG OF BORING****Boring No.:** SB17**Start Date:** 7/23/2013 17:11**Finish Date:** 7/24/2013 09:30**Total Depth:** 16' bgl**Ground Water:** Saturated @ 12' bgl**Elev., TOC (ft. msl):** --**Elev., PAD (ft. msl):** --**Elev., GL (ft. msl):** --**Site Coordinates:****N****E**

Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
0								Ground Surface	0
2					14 90°F		60	<b>Fill (Silty Clay/Gravel)</b> Low plasticity, stiff, dry, light brown	2
4					36 90°F		70	<b>Fill (Silty Clay)</b> Similar to above	4
6					80 90°F		90	<b>Silty Clay (CL)</b> Low plasticity, firm, damp, brown, calcareous	6
8					125 90°F		80	<b>Silty Clay (CL)</b> Similar to above (rain, shut down @ 1730 continued on 7/24/2013)	8
10					1259 83°F		80	<b>Silty Clay (CL)</b> Low plasticity, firm, damp, oily, hydrocarbon odor, dark brown	10
12					860 83°F		70	<b>Silty Clay (CL)</b> Similar to above, moist, hydrocarbon odor, oily, phase-separated hydrocarbon	12
14					1716 83°F		60	<b>Sandy Clay (CL)</b> Low plasticity, soft, moist to saturated, hydrocarbon odor, dark brown	14
16					1050 83°F		70	<b>Silty Sand (SM)</b> Medium grain, loose, saturated, hydrocarbon odor, dark brown to black	16
								<b>Sandy/Silty Clay (CL)</b> Low plasticity, firm, saturated, dark brown to black, hydrocarbon odor	
								Total Depth = 16' BGL	

**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01809  
**Geologist:** Tracy Payne  
**Driller:** Precision Sampling  
**Drilling Rig:** Geoprobe 6625 CPT  
**Drilling Method:** Direct Push  
**Sampling Method:** Split Spoon  
**Comments:** N 35°29.286' W 108°25.751'

**LOG OF BORING**

**Boring No.:** SB18  
**Start Date:** 7/24/2013 10:05  
**Finish Date:** 7/24/2013 11:20

**Total Depth:** 20' bgl  
**Ground Water:** Saturated @ 18' bgl  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** --  
**Site Coordinates:**  
**N** **E**

Depth (ft.)	Sampling						Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class		
0							Ground Surface	0
2					70 87°F	90	<b>Silt/Gravel (ML)</b> Low plasticity, soft, damp to dry, no odor, brown	2
4					36 87°F	90	<b>Silt (ML)</b> Similar to above, gravel present, dry	4
6					15 87°F	80	<b>Silt (ML)</b> Similar to above, gravel, calcareous, dry, trace fine grain sand, brown	6
8					35 87°F	90	<b>Clayey Sandy Silt (ML)</b> Very fine grain, compact, dry, brown, no odor	8
10					9 87°F	90	<b>Sandy Clay (CL)</b> Low plasticity, firm, damp, brown, calcareous, no odor	10
12					90 87°F	90	<b>Sandy Clay (CL)</b> Similar to above, damp, no odor	12
14					2731 87°F	90	<b>Clayey Silty Sand (SC)</b> Fine to medium grain, compact to loose, damp, brown, hydrocarbon odor	14
16						--	No recovery - Gravel jammed inside split spoon, wet	16
					418 87°F	40	<b>Sandy Clay (CL)</b> Low plasticity, soft, moist, dark brown, hydrocarbon odor	

**RPS****LOG OF BORING**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01809  
**Geologist:** Tracy Payne  
**Driller:** Precision Sampling  
**Drilling Rig:** Geoprobe 6625 CPT  
**Drilling Method:** Direct Push  
**Sampling Method:** Split Spoon  
**Comments:** N 35°29.286' W 108°25.751'

**Total Depth:** 20' bgl  
**Ground Water:** Saturated @ 18' bgl  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** --  
**Site Coordinates:**  
N E

**Boring No.:** SB18**Start Date:** 7/24/2013 10:05**Finish Date:** 7/24/2013 11:20

Depth (ft.)	Sampling						Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class		
19					206 87 °F		<b>Silty Sand (SM)</b> Medium grain, loose, saturated, brown, hydrocarbon odor	19
21							<b>Clay (CH)</b> High plasticity, firm, damp, brown, odor	21
23							Total Depth = 20' BGL	23
25								25
27								27
29								29
31								31
33								33
35								35

Set 1" Temporary Well  
Screened: 9-19' bgl  
10/20 Filter Pack: 8-20' bgl  
Bentonite: 0-8' bgl

**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01809  
**Geologist:** Tracy Payne  
**Driller:** Precision Sampling  
**Drilling Rig:** Geoprobe 6625 CPT  
**Drilling Method:** Direct Push  
**Sampling Method:** Split Spoon  
**Comments:** N 35°29.294' W 108°25.754'

**LOG OF BORING**

**Boring No.:** SB19  
**Start Date:** 7/24/2013 11:51  
**Finish Date:** 7/24/2013 13:10

**Total Depth:** 22' bgl  
**Ground Water:** Saturated @ 14' bgl  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** --  
**Site Coordinates:**  
**N E**

Depth (ft.)	Sampling						Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class		
0							Ground Surface	0
2					8.7 86°F	90	<b>Silt/Gravel (ML)</b> Low plasticity, soft, dry/damp, no odor, brown	2
4					54 86°F	80	<b>Silt/Gravel (ML)</b> Similar to above	4
6					7 86°F	70	<b>Gravel/Silt (GW)</b> 1/2 to 1" gravel, loose, compact, dry, no odor	6
8					7.5 86°F	70	<b>Clayey Sandy Silt (ML)</b> Very fine grain, compact, dry to damp, brown, no odor	8
10					5.5 86°F	60	<b>Sandy Clay (CL)</b> Low plasticity, firm, damp, light brown, no odor	10
12					5.8 86°F	70	<b>Sandy Clay (CL)</b> Similar to above, brown, no odor	12
14					10 86°F	70	<b>Sandy Clay (CL)</b> Similar to above <b>Silty Sand (SM)</b> Fine to medium grain, loose, damp, brown, no odor	14
16					225 86°F	50	<b>Sandy Clay (CL)</b> Low plasticity, firm, moist to saturated in sand seams, hydrocarbon odor, dark brown	16
					319 86°F	70	<b>Sandy Clay (CL)</b> Similar to above, moist, hydrocarbon odor	

**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01809  
**Geologist:** Tracy Payne  
**Driller:** Precision Sampling  
**Drilling Rig:** Geoprobe 6625 CPT  
**Drilling Method:** Direct Push  
**Sampling Method:** Split Spoon  
**Comments:** N 35°29.294' W 108°25.754'

**LOG OF BORING****Boring No.:** SB19**Start Date:** 7/24/2013 11:51**Finish Date:** 7/24/2013 13:10**Total Depth:** 22' bgl**Ground Water:** Saturated @ 14' bgl**Elev., TOC (ft. msl):** --**Elev., PAD (ft. msl):** --**Elev., GL (ft. msl):** --**Site Coordinates:**

N

E

Depth (ft.)	Sampling					Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class		
19					400 86°F		<b>Sandy Clay (CL)</b> Similar to above, moist, hydrocarbon odor	19
21					532 86°F		<b>Sandy Clay/Clayey Sand (CL)</b> Very fine grain, compact, moist to saturated, sheen observed in split spoon, hydrocarbon odor	21
23							Total Depth = 22' BGL	23
25								25
27								27
29								29
31								31
33								33
35								35

Set 1" Temporary Well  
 Screened: 12-22' bgl  
 10/20 Filter Pack: 10-22' bgl  
 Bentonite: 0-10' bgl

**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01809  
**Geologist:** Tracy Payne  
**Driller:** Precision Sampling  
**Drilling Rig:** Geoprobe 6625 CPT  
**Drilling Method:** Direct Push  
**Sampling Method:** Split Spoon  
**Comments:** N 35°29.307' W 108°25.755'

**LOG OF BORING****Boring No.:** SB20**Start Date:** 7/24/2013 14:10**Finish Date:** 7/24/2013 15:45**Total Depth:** 14' bgl**Ground Water:** Saturated @ 10' bgl**Elev., TOC (ft. msl):** --**Elev., PAD (ft. msl):** --**Elev., GL (ft. msl):** --**Site Coordinates:****N****E**

Depth (ft.)	Sampling						Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class		
0							Ground Surface	0
2					8 80°F	90	<b>Silt (ML)</b> Low plasticity, soft, damp, brown, no odor	2
4					12.7 80°F	90	<b>Silt (ML)</b> Similar to above, trace gravel	4
6					13 80°F	80	<b>Sandy Clay (CL)</b> Low plasticity, stiff, dry, brown, calcareous	6
8					17 80°F	90	<b>Silty Sand/Sandy Silt (SM/ML)</b> Very fine grain, loose to compact, dry, calcareous, brown	8
10					59 80°F	90	<b>Sandy Silt (ML)</b> Similar to above, no odor	10
12					1165 80°F	90	<b>Sandy Clay/Clayey Sand (SC/CL)</b> Medium grain, compact, moist to saturated, hydrocarbon odor, brown	12
14					1200 80°F	90	<b>Clayey Sand (SC)</b> Similar to above, saturated, hydrocarbon odor	14
16							Total Depth = 14' BGL	16
							Set 1" Temporary Well Screened: 9-14' bgl 10/20 Filter Pack: 7-14' bgl Bentonite: 0-7' bgl	

**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01809  
**Geologist:** Tracy Payne  
**Driller:** Precision Sampling  
**Drilling Rig:** Geoprobe 6625 CPT  
**Drilling Method:** Direct Push  
**Sampling Method:** Split Spoon  
**Comments:** N 35°29.314' W 108°25.761'

**LOG OF BORING****Boring No.:** SB21**Start Date:** 7/24/2013 15:55**Finish Date:** 7/24/2013 16:20**Total Depth:** 10' bgl**Ground Water:** Saturated @ 6' bgl**Elev., TOC (ft. msl):** --**Elev., PAD (ft. msl):** --**Elev., GL (ft. msl):** --**Site Coordinates:**

N

E

Depth (ft.)	Sampling						Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class		
0							Ground Surface	0
2					15.2 80°F	60	<b>Silty Clay (CL)</b> Low plasticity, stiff, dry to damp, brown	2
4					88 80°F	50	<b>Sandy Clay (CL)</b> Low plasticity, very stiff, dry to damp, brown	4
6					1170 80°F	80	<b>Sandy Clay (CL)</b> Similar to above, hydrocarbon odor, sand at base	6
8					1200 80°F	90	<b>Silty Sand (SM)</b> Medium grain, loose, moist to saturated, phase-separated hydrocarbon, brown, hydrocarbon odor	8
10					1350 80°F	90	<b>Sandy Clayey Gravel (GW)</b> Compact, saturated, phase-separated hydrocarbon, hydrocarbon odor, gray	10
12							Total Depth = 10' BGL	12
14								14
16								16

Set 1" Temporary Well  
 Screened: 5-10' bgl  
 10/20 Filter Pack: 3-10' bgl  
 Bentonite: 0-3' bgl

**RPS**

**Client:** Western Refining Southwest, Inc.  
**Site:** Gallup Refinery - Seep West of Tank 102  
**Job No.:** UEC01809  
**Geologist:** Tracy Payne  
**Driller:** Precision Sampling  
**Drilling Rig:** Geoprobe 6625 CPT  
**Drilling Method:** Direct Push  
**Sampling Method:** Split Spoon  
**Comments:** N 35°29.323' W 108°25.769'

**LOG OF BORING**

**Boring No.:** SB22  
**Start Date:** 7/24/2013 16:30  
**Finish Date:** 7/24/2013 17:15

**Total Depth:** 10' bgl  
**Ground Water:** Saturated @ 6' bgl  
**Elev., TOC (ft. msl):** --  
**Elev., PAD (ft. msl):** --  
**Elev., GL (ft. msl):** --  
**Site Coordinates:**  
**N E**

Depth (ft.)	Sampling						Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class		
0							Ground Surface	0
2					18 80°F		<b>Silty Clay (CL)</b> Low plasticity, soft, damp, brown	2
4					308 80°F		<b>Silty Clay (CL)</b> Similar to above, odor	4
6					793 80°F		<b>Sandy Clay (CL)</b> Low plasticity, firm, moist, oily, brown, trace gravel	6
8					504 80°F		<b>Clayey Sand (SC)</b> Medium grain, loose to compact, saturated, phase-separated hydrocarbon, hydrocarbon odor, black	8
10					760 80°F		<b>Clayey Sand (SC)</b> Similar to above, silty clay at base	10
12							Total Depth = 10' BGL	12
14								14
16								16

Set 1" Temporary Well  
 Screened: 5-10' bgl  
 10/20 Filter Pack: 3-10' bgl  
 Bentonite: 0-3' bgl



# Analytical Reports

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**Herzog MP 626 - HDA 627/628**Unit Number : 1 - 006281160  
Software - Version : HDA 1.0PSample number : 06/28/13 11AM  
Sample Description : Underground Petroleum Sample Deposit#1  
Date of Measurement: 6/28/2013 10:56:27 AM

Dist. Standard : INDEPENDENT

Dist. Group : -1

Thermometer : 7C/7F

Measurement Program : CRUDE

Corrections of temperatures : barometric corr. acc. D-1078

Barometric Pressure : 590.3 mmHG

Distillation Residue : 1.2 ml

Recovery : 98.1 vol % (observed :97.6 vol %)

Distillation Loss : 0.7 ml (observed :1.2 ml )

Stop Point : -- ml / -- °F

	Corrected		Observed	
	Volume	Temperature	Volume	Temperature
Distillation point1 :	IBP	* 124.0 °F *	IBP	* 112.1 °F *
Distillation point2 :	23.0 ml	* 230.7 °F *	23.0 ml	* 218.8 °F *
Distillation point3 :	45.0 ml	* 311.5 °F *	45.0 ml	* 299.7 °F *
Distillation point4 :	55.0 ml	* 363.6 °F *	55.0 ml	* 351.7 °F *
Distillation point5 :	75.0 ml	* 475.3 °F *	75.0 ml	* 463.5 °F *
Distillation point6 :	83.0 ml	* 516.7 °F *	83.0 ml	* 504.9 °F *
Distillation point7 :	FBP	* 631.2 °F *	FBP	* 619.3 °F *
Distillation point8 :	DP	* -- *	DP	* 32.0 °F *
Distillation point9 :	* 96.5 ml *	FBP	* 96.5 ml *	FBP
Distillation point10 :	* 0.0 ml *	DP	* 0.0 ml *	DP

Volume	Dist. rate	Dist. temp.	Barom. corr.	Evap. corr.
IBP	281.0 s	112.1 °F	124.0 °F	-
5 %	55.0 s	159.4 °F	171.3 °F	-
10 %	5.6 ml/min	179.6 °F	191.5 °F	-
15 %	5.4 ml/min	195.4 °F	207.3 °F	-
20 %	4.9 ml/min	210.0 °F	221.9 °F	-
30 %	4.4 ml/min	239.5 °F	251.4 °F	-
40 %	4.2 ml/min	276.8 °F	288.7 °F	-
50 %	4.4 ml/min	325.4 °F	337.3 °F	-
60 %	4.4 ml/min	378.5 °F	390.4 °F	-
70 %	4.7 ml/min	436.1 °F	448.0 °F	-
80 %	4.3 ml/min	488.8 °F	500.7 °F	-
85 %	4.0 ml/min	516.4 °F	528.3 °F	-
90 %	3.6 ml/min	548.4 °F	560.3 °F	-
95 %	69.1 s	598.6 °F	610.5 °F	-
FBP	158.0 s	619.3 °F	631.2 °F	-

Error Number	Error Description
8	Receiver door open during distillation I

BS+W = 0.0/0.0

API Gravity @ 60°F = 47.0

**Herzog MP 626 - HDA 627/628**Unit Number : 2 - 2  
Software - Version : HDA 1.0P

Sample number : 06/28/13 11am

Sample Description : Underground Petroleum Deposit #2

Date of Measurement: 6/28/2013 10:57:11 AM

Dist. Standard : INDEPENDENT

Dist. Group : -1

Thermometer : 7C/7F

Measurement Program : CRUDE

Corrections of temperatures : barometric corr. acc. D-1078

Barometric Pressure : 597.8 mmHG

Distillation Residue : 1.0 ml

Recovery : 98.4 vol % (observed :98.1 vol %)

Distillation Loss : 0.6 ml (observed :0.9 ml )

Stop Point : -- ml / -- °F

	Corrected		Observed	
	Volume	Temperature	Volume	Temperature
Distillation point1 :	IBP	* 127.8 °F *	IBP	* 116.4 °F *
Distillation point2 :	23.0 ml	* 239.9 °F *	23.0 ml	* 228.6 °F *
Distillation point3 :	45.0 ml	* 325.4 °F *	45.0 ml	* 314.1 °F *
Distillation point4 :	55.0 ml	* 375.3 °F *	55.0 ml	* 363.9 °F *
Distillation point5 :	75.0 ml	* 475.7 °F *	75.0 ml	* 464.4 °F *
Distillation point6 :	83.0 ml	* 514.9 °F *	83.0 ml	* 503.6 °F *
Distillation point7 :	FBP	* 623.1 °F *	FBP	* 611.8 °F *
Distillation point8 :	DP	* -- *	DP	* 32.0 °F *
Distillation point9 :	* 96.7 ml *	FBP	* 96.7 ml *	FBP
Distillation point10 :	* 0.0 ml *	DP	* 0.0 ml *	DP

Volume	Dist. rate	Dist. temp.	Barom. corr.	Evap. corr.
IBP	252.0 s	116.4 °F	127.8 °F	-
5 %	43.0 s	167.0 °F	178.3 °F	-
10 %	6.5 ml/min	188.2 °F	199.6 °F	-
15 %	5.7 ml/min	204.1 °F	215.4 °F	-
20 %	5.2 ml/min	219.2 °F	230.5 °F	-
30 %	4.5 ml/min	251.1 °F	262.4 °F	-
40 %	4.3 ml/min	289.8 °F	301.1 °F	-
50 %	4.4 ml/min	339.3 °F	350.6 °F	-
60 %	4.5 ml/min	389.1 °F	400.5 °F	-
70 %	4.5 ml/min	440.4 °F	451.8 °F	-
80 %	4.6 ml/min	488.7 °F	500.0 °F	-
85 %	4.1 ml/min	514.4 °F	525.7 °F	-
90 %	4.0 ml/min	545.7 °F	557.1 °F	-
95 %	57.9 s	589.3 °F	600.6 °F	-
FBP	146.0 s	611.8 °F	623.1 °F	-

API Gravity @ 60°F = 45.7

BS+W = 0.0/0.0

# WESTERN REFINING - EL PASO, TX

## Sample Report

**Sample Number:** 73769  
**Product:** GALLUP  
**Tank No.:**  
**Batch ID:**  
**Comment:** Pipeline Tk 101 Crude  
**Date Sampled:** 11/19/2011 09:22:00

Analysis ID	Component Name	Result	Units	Pass/Fail
GRAV_PORT/1	API_Gravity	44.1	degAPI	Pass
NITROGEN/1	nitrogen	259	ppm	Pass
SIMDIS7169/1	IBP	92.8	deg_F	Pass
SIMDIS7169/1	5%	148.0	deg_F	Pass
SIMDIS7169/1	10%	181.3	deg_F	Pass
SIMDIS7169/1	20%	228.9	deg_F	Pass
SIMDIS7169/1	30%	281.8	deg_F	Pass
SIMDIS7169/1	40%	352.9	deg_F	Pass
SIMDIS7169/1	50%	448.3	deg_F	Pass
SIMDIS7169/1	60%	548.2	deg_F	Pass
SIMDIS7169/1	70%	656.0	deg_F	Pass
SIMDIS7169/1	80%	778.5	deg_F	Pass
SIMDIS7169/1	90%	935.8	deg_F	Pass
SIMDIS7169/1	95%	1063.5	deg_F	Pass
SIMDIS7169/1	FBP	1327.2	deg_F	Pass
SULF_4294/1	Sulfur_%Wt	0.119	%wt	Pass



*Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)*

August 01, 2013

Cheryl Johnson

Western Refining Southwest, Gallup

Rt. 3 Box 7

Gallup, NM 87301

TEL: (505) 722-0231

FAX (505) 722-0210

RE: Seep West of Tank 102

OrderNo.: 1307C30

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 7/26/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307C30

Date Reported: 8/1/2013

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** SB18

**Project:** Seep West of Tank 102

**Collection Date:** 7/25/2013 1:30:00 PM

**Lab ID:** 1307C30-001

**Matrix:** AQUEOUS

**Received Date:** 7/26/2013 9:07:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	73	1.0		mg/L	1	7/29/2013 4:35:51 PM	8599
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	7/29/2013 4:35:51 PM	8599
Surr: DNOP	119	70.1-140		%REC	1	7/29/2013 4:35:51 PM	8599
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	73	10	P	mg/L	200	7/30/2013 4:17:20 AM	R12268
Surr: BFB	98.5	51.5-151	P	%REC	200	7/30/2013 4:17:20 AM	R12268

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

**Analytical Report**Lab Order **1307C30**Date Reported: **8/1/2013****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Gallup**Client Sample ID:** SB19**Project:** Seep West of Tank 102**Collection Date:** 7/25/2013 1:45:00 PM**Lab ID:** 1307C30-002**Matrix:** AQUEOUS**Received Date:** 7/26/2013 9:07:00 AM

<b>Analyses</b>	<b>Result</b>	<b>RL</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Date Analyzed</b>	<b>Batch</b>
<b>EPA METHOD 8015D: DIESEL RANGE</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	30	1.0		mg/L	1	7/29/2013 4:57:45 PM	8599
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	7/29/2013 4:57:45 PM	8599
Surr: DNOP	127	70.1-140		%REC	1	7/29/2013 4:57:45 PM	8599
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	19	10		mg/L	200	7/30/2013 4:47:38 AM	R12268
Surr: BFB	93.8	51.5-151		%REC	200	7/30/2013 4:47:38 AM	R12268

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	<b>*</b>	Value exceeds Maximum Contaminant Level.	<b>B</b>	Analyte detected in the associated Method Blank
	<b>E</b>	Value above quantitation range	<b>H</b>	Holding times for preparation or analysis exceeded
	<b>J</b>	Analyte detected below quantitation limits	<b>ND</b>	Not Detected at the Reporting Limit
	<b>O</b>	RSD is greater than RSDlimit	<b>P</b>	Sample pH greater than 2 for VOA and TOC only.
	<b>R</b>	RPD outside accepted recovery limits	<b>RL</b>	Reporting Detection Limit

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1307C30

01-Aug-13

Client: Western Refining Southwest, Gallup

Project: Seep West of Tank 102

Sample ID	MB-8599	SampType:	MBLK	TestCode:	EPA Method 8015D: Diesel Range					
Client ID:	PBW	Batch ID:	8599	RunNo:	12239					
Prep Date:	7/29/2013	Analysis Date:	7/29/2013	SeqNo:	348455	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.1		1.000		113	70.1	140			

Sample ID	LCS-8599		SampType:	LCS		TestCode:	EPA Method 8015D: Diesel Range				
Client ID:	LCSW		Batch ID:	8599		RunNo:	12239				
Prep Date:	7/29/2013		Analysis Date:	7/29/2013		SeqNo:	348473		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Diesel Range Organics (DRO)	5.2	1.0	5.000	0	105	89.1	151			
Surr: DNOP	0.42		0.5000		84.7	70.1	140			

Sample ID	LCSD-8599	SampType:	LCSD	TestCode:	EPA Method 8015D: Diesel Range					
Client ID:	LCSS02	Batch ID:	8599	RunNo:	12239					
Prep Date:	7/29/2013	Analysis Date:	7/29/2013	SeqNo:	348474	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	5.3	1.0	5.000	0	106	89.1	151	1.59	20	
Surr: DNOP	0.44		0.5000		88.4	70.1	140	0	0	

## Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1307C30

01-Aug-13

Client: Western Refining Southwest, Gallup

Project: Seep West of Tank 102

Sample ID: <b>5ML RB</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>									
Client ID: <b>PBW</b>	Batch ID: <b>R12268</b>	RunNo: <b>12268</b>									
Prep Date:	Analysis Date: <b>7/29/2013</b>	SeqNo: <b>348886</b> Units: <b>mg/L</b>									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	ND	0.050									
Surr: BFB	18		20.00		92.3	51.5	151				

Sample ID: <b>2.5UG GRO LCS</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>									
Client ID: <b>LCSW</b>	Batch ID: <b>R12268</b>	RunNo: <b>12268</b>									
Prep Date:	Analysis Date: <b>7/29/2013</b>	SeqNo: <b>348887</b> Units: <b>mg/L</b>									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	0.51	0.050	0.5000	0	103	80	120				
Surr: BFB	20		20.00		99.1	51.5	151				

### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit



HALL ENVIRONMENTAL ANALYSIS LABORATORY  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1307C30

RcptNo: 1

Received by/date:

MG 07/26/13

Logged By: Anne Thorne

7/26/2013 9:07:00 AM

*Anne Thorne*

Completed By: Anne Thorne

7/26/2013

*Anne Thorne*

Reviewed By:

*[Signature]*

07/29/13

### Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? FedEx

### Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0° C? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH: \_\_\_\_\_  
(<2 or >12 unless noted)  
Adjusted? \_\_\_\_\_  
Checked by: \_\_\_\_\_

### Special Handling (If applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

**IDENTIFICATION TITLE.**

☐ **Standard**      ☐ **Rush**

Project Name: 9FEET WEST OF TANK 102

Project #:

Project Manager:  
**CHERYL JOHNSON**

Sampler: TRACY PAYNE

☐ Standard ☐ Level 4 (Full Validation)

☐ NELAP      ☐ Other \_\_\_\_\_

☐ EDD (Type)

# ON THE ROSES

Sample Temperature: 100

[illegible]

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  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)*

July 16, 2013

Cheryl Johnson

Western Refining Southwest, Gallup

Rt. 3 Box 7

Gallup, NM 87301

TEL: (505) 722-0231

FAX: (505) 722-0210

RE: Seep West of 102

OrderNo.: 1307269

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 7/8/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

**Hall Environmental Analysis Laboratory, Inc.****Analytical Report**Lab Order **1307269**

Date Reported: 7/16/2013

**CLIENT:** Western Refining Southwest, Gallup**Client Sample ID:** Seep Hole #6**Project:** Seep West of 102**Collection Date:** 7/8/2013 9:45:00 AM**Lab ID:** 1307269-001**Matrix:** PRODUCT**Received Date:** 7/8/2013 1:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>DRO BY 8015D</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	55	2.0		wt%	20	7/9/2013 4:30:52 PM	8285
Motor Oil Range Organics (MRO)	ND	10		wt%	20	7/9/2013 4:30:52 PM	8285
Surr: DNOP	0	76.7-135	S	%REC	20	7/9/2013 4:30:52 PM	8285
<b>GRO BY 8015D</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	49	2.5		wt%	1	7/10/2013 11:07:52 AM	8284
Surr: BFB	127	65.4-138		%REC	1	7/10/2013 11:07:52 AM	8284
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>JRR</b>
Fluoride	ND	2.0		mg/L	20	7/9/2013 3:15:53 AM	R11809
Chloride	ND	10		mg/L	20	7/9/2013 3:15:53 AM	R11809
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	7/9/2013 3:15:53 AM	R11809
Bromide	ND	2.0		mg/L	20	7/9/2013 3:15:53 AM	R11809
Nitrogen, Nitrate (As N)	ND	2.0		mg/L	20	7/9/2013 3:15:53 AM	R11809
Phosphorus, Orthophosphate (As P)	ND	10		mg/L	20	7/9/2013 3:15:53 AM	R11809
Sulfate	ND	10		mg/L	20	7/9/2013 3:15:53 AM	R11809
<b>EPA METHOD 200.7: METALS</b>							Analyst: <b>JLF</b>
Calcium	ND	50		mg/L	1	7/11/2013 1:47:54 PM	8317
Magnesium	ND	50		mg/L	1	7/11/2013 1:47:54 PM	8317
Potassium	65	50		mg/L	1	7/11/2013 1:47:54 PM	8317
Sodium	100	50		mg/L	1	7/11/2013 1:47:54 PM	8317
<b>SM4500-H+B: PH</b>							Analyst: <b>JML</b>
pH	7.04	1.68	H	pH units	1	7/12/2013 4:29:00 PM	R11906

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* 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	ND Not Detected at the Reporting Limit
	O RSD is greater than RSDlimit	P Sample pH greater than 2 for VOA and TOC only.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1307269

16-Jul-13

Client: Western Refining Southwest, Gallup

Project: Seep West of 102

Sample ID: <b>MB-8317</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 200.7: Metals</b>							
Client ID: <b>PBW</b>	Batch ID: <b>8317</b>		RunNo: <b>11877</b>							
Prep Date: <b>7/11/2013</b>	Analysis Date: <b>7/11/2013</b>		SeqNo: <b>337575</b>		Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Magnesium	ND	1.0								
Potassium	ND	1.0								
Sodium	ND	1.0								

Sample ID: <b>LCS-8317</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 200.7: Metals</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>8317</b>	RunNo: <b>11877</b>								
Prep Date: <b>7/11/2013</b>	Analysis Date: <b>7/11/2013</b>	SeqNo: <b>337576</b>			Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	50	1.0	50.00	0	99.4	85	115			
Magnesium	50	1.0	50.00	0	99.6	85	115			
Potassium	49	1.0	50.00	0	97.6	85	115			
Sodium	49	1.0	50.00	0	98.8	85	115			

### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1307269

16-Jul-13

Client: Western Refining Southwest, Gallup

Project: Seep West of 102

Sample ID: <b>MB</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R11809</b>	RunNo: <b>11809</b>								
Prep Date:	Analysis Date: <b>7/9/2013</b>	SeqNo: <b>335617</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								
Sulfate	ND	0.50								

Sample ID: <b>LCS</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R11809</b>	RunNo: <b>11809</b>								
Prep Date:	Analysis Date: <b>7/9/2013</b>	SeqNo: <b>335618</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.53	0.10	0.5000	0	107	90	110			
Chloride	4.8	0.50	5.000	0	95.5	90	110			
Nitrogen, Nitrite (As N)	0.96	0.10	1.000	0	95.5	90	110			
Bromide	2.5	0.10	2.500	0	99.0	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	100	90	110			
Phosphorus, Orthophosphate (As P)	4.8	0.50	5.000	0	95.3	90	110			
Sulfate	9.7	0.50	10.00	0	96.6	90	110			

Sample ID: <b>1307280-001AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>BatchQC</b>	Batch ID: <b>R11809</b>	RunNo: <b>11809</b>								
Prep Date:	Analysis Date: <b>7/9/2013</b>	SeqNo: <b>335622</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.1	0.10	0.5000	0.6427	96.1	76.9	114			
Chloride	11	0.50	5.000	5.375	105	89.9	119			
Nitrogen, Nitrite (As N)	0.97	0.10	1.000	0	96.6	84.3	102			
Bromide	2.6	0.10	2.500	0.08490	101	92	104			
Nitrogen, Nitrate (As N)	3.4	0.10	2.500	0.8637	103	93	113			
Phosphorus, Orthophosphate (As P)	4.9	0.50	5.000	0	98.6	73.9	120			
Sulfate	31	0.50	10.00	19.89	109	90.1	116			

Sample ID: <b>1307280-001AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>BatchQC</b>	Batch ID: <b>R11809</b>	RunNo: <b>11809</b>								
Prep Date:	Analysis Date: <b>7/9/2013</b>	SeqNo: <b>335623</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.1	0.10	0.5000	0.6427	95.4	76.9	114	0.339	20	
Chloride	11	0.50	5.000	5.375	104	89.9	119	0.603	20	

### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1307269

16-Jul-13

Client: Western Refining Southwest, Gallup

Project: Seep West of 102

Sample ID: 1307280-001AMSD		SampType: MSD		TestCode: EPA Method 300.0: Anions						
Client ID: BatchQC		Batch ID: R11809		RunNo: 11809						
Prep Date:		Analysis Date: 7/9/2013		SeqNo: 335623		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	0.96	0.10	1.000	0	95.8	84.3	102	0.884	20	
Bromide	2.6	0.10	2.500	0.08490	101	92	104	0.398	20	
Nitrogen, Nitrate (As N)	3.4	0.10	2.500	0.8637	102	93	113	0.600	20	
Phosphorus, Orthophosphate (As P)	4.8	0.50	5.000	0	96.4	73.9	120	2.29	20	
Sulfate	31	0.50	10.00	19.89	106	90.1	116	0.814	20	

## Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1307269

16-Jul-13

Client: Western Refining Southwest, Gallup

Project: Seep West of 102

Sample ID: <b>LCS-8285</b>	SampType: <b>LCS</b>		TestCode: <b>DRO by 8015D</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>8285</b>		RunNo: <b>11794</b>							
Prep Date: <b>7/9/2013</b>	Analysis Date: <b>7/9/2013</b>		SeqNo: <b>335851</b>		Units: <b>wt%</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.40	0.10	0.5000	0	80.5	80	120			
Surr: DNOP	0.040		0.05000		79.3	76.7	135			

Sample ID: <b>LCSD-8285</b>	SampType: <b>LCSD</b>	TestCode: <b>DRO by 8015D</b>								
Client ID: <b>LCSS02</b>	Batch ID: <b>8285</b>	RunNo: <b>11794</b>								
Prep Date: <b>7/9/2013</b>	Analysis Date: <b>7/9/2013</b>	SeqNo: <b>335852</b>			Units: <b>wt%</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	0.43	0.10	0.5000	0	85.7	80	120	6.34	20	
Surr: DNOP	0.043		0.05000		85.8	76.7	135	0	0	

Sample ID: <b>MB-8285</b>	SampType: <b>MBLK</b>	TestCode: <b>DRO by 8015D</b>								
Client ID: <b>PBW</b>	Batch ID: <b>8285</b>	RunNo: <b>11794</b>								
Prep Date: <b>7/9/2013</b>	Analysis Date: <b>7/9/2013</b>	SeqNo: <b>335853</b> Units: <b>wt%</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	0.10								
Motor Oil Range Organics (MRO)	ND	0.50								
Surr: DNOP	0.082		0.1000		82.1	76.7	135			

### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1307269

16-Jul-13

Client: Western Refining Southwest, Gallup

Project: Seep West of 102

Sample ID: <b>MB-8284</b>	SampType: <b>MBLK</b>	TestCode: <b>GRO by 8015D</b>
Client ID: <b>PBW</b>	Batch ID: <b>8284</b>	RunNo: <b>11829</b>
Prep Date: <b>7/9/2013</b>	Analysis Date: <b>7/10/2013</b>	SeqNo: <b>336360</b> Units: <b>wt%</b>
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Gasoline Range Organics (GRO)	ND	2.5								
Surr: BFB	940		1000		94.1	65.4	138			

Sample ID: <b>LCS-8284</b>	SampType: <b>LCS</b>	TestCode: <b>GRO by 8015D</b>
Client ID: <b>LCSW</b>	Batch ID: <b>8284</b>	RunNo: <b>11829</b>
Prep Date: <b>7/9/2013</b>	Analysis Date: <b>7/10/2013</b>	SeqNo: <b>336361</b> Units: <b>wt%</b>
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Gasoline Range Organics (GRO)	27	2.5	25.00	0	106	67.5	133			
Surr: BFB	1000		1000		99.7	65.4	138			

Sample ID: <b>LCSD-8284</b>	SampType: <b>LCSD</b>	TestCode: <b>GRO by 8015D</b>
Client ID: <b>LCSS02</b>	Batch ID: <b>8284</b>	RunNo: <b>11829</b>
Prep Date: <b>7/9/2013</b>	Analysis Date: <b>7/10/2013</b>	SeqNo: <b>336362</b> Units: <b>wt%</b>
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Gasoline Range Organics (GRO)	26	2.5	25.00	0	103	67.5	133	3.10	8.39	
Surr: BFB	1000		1000		101	65.4	138	0	0	

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1307269

16-Jul-13

Client: Western Refining Southwest, Gallup

Project: Seep West of 102

Sample ID: 1307269-001ADUP	SampType: DUP	TestCode: SM4500-H+B: pH								
Client ID: Seep Hole #6	Batch ID: R11906	RunNo: 11906								
Prep Date:	Analysis Date: 7/12/2013	SeqNo: 338410 Units: pH units								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	7.03	1.68						0.142		H

## Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1307269

RcptNo: 1

Received by/date:

*dm* 07/08/13

Logged By: Ashley Gallegos

7/8/2013 1:20:00 PM

Completed By: Ashley Gallegos

7/8/2013 1:49:57 PM

Reviewed By:

*IO*

07/08/13

### Chain of Custody

- |  |   |                             |             |
|--|---|-----------------------------|-------------|
| 1. Custody seals intact on sample bottles? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present |
| 2. Is Chain of Custody complete?           | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present |
| 3. How was the sample delivered?           | Client                                  |                             |             |

### Log In

- |  |   |  |  |
|--|---|--|--|
| 4. Was an attempt made to cool the samples?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | NA                                     |
| 5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to $6.0^{\circ}\text{C}$ | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | NA                                     |
| 6. Sample(s) in proper container(s)?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| 7. Sufficient sample volume for indicated test(s)?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| 8. Are samples (except VOA and ONG) properly preserved?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| 9. Was preservative added to bottles?  | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> | NA                                     |
| 10. VOA vials have zero headspace?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | No VOA Vials                           |
| 11. Were any sample containers received broken?  | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> | # of preserved bottles checked for pH: |
| 12. Does paperwork match bottle labels?<br>(Note discrepancies on chain of custody)            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Adjusted <input type="checkbox"/>      |
| 13. Are matrices correctly identified on Chain of Custody?                                     | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| 14. Is it clear what analyses were requested?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |  |
| 15. Were all holding times able to be met?<br>(If no, notify customer for authorization.)      | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Checked by:                            |

### Special Handling (if applicable)

- |   |                              |                             |  |
|---|------------------------------|-----------------------------|--|
| 16. Was client notified of all discrepancies with this order? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |
|---|------------------------------|-----------------------------|--|

Person Notified:

Date:

By Whom:

Via:

eMail

Phone

Fax

In Person

Regarding:

Client Instructions:

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.5	Good	Not Present			

Client: Western Refining Company

---

GALLUP REFINERY

---

Mailing Address:

---

RT 3 BOX 7, GALLUP, NM 87301

---

Phone #: 505-722-3833

---

email or Fax#: 505-863-0930

---

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

---

Accreditation:

☐ NELAP ☐ Other \_\_\_\_\_

---

☐ EDD (Type) \_\_\_\_\_

Turn-Around Time:	
Standard	X Rush <u>ASAP</u>
Project Name:	
Seep West of 102	
Project #:	
Seep Hole #6	
Project Manager:	
C. JOHNSON (cheryl.johnson@wnr.com)	
Sampler:	C. JOHNSON
On Ice:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Sample Temperature:	7.5



[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975      Fax 505-345-4107

## Analysis Request

[illegible]

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  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)*

July 19, 2013

Beck Larsen  
Western Refining Southwest, Gallup  
Rt. 3 Box 7  
Gallup, NM 87301  
TEL: (505) 722-0258  
FAX: (505) 722-0210

RE: Excavation Behind Tank

OrderNo.: 1307524

Dear Beck Larsen:

Hall Environmental Analysis Laboratory received 1 sample(s) on 7/12/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307524

Date Reported: 7/19/2013

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: Soil Pile Behind 101/102

Project: Excavation Behind Tank

Collection Date: 7/10/2013 3:30:00 PM

Lab ID: 1307524-001

Matrix: SOIL

Received Date: 7/12/2013 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: JME
Diesel Range Organics (DRO)	40000	1000		mg/Kg	100	7/15/2013 4:21:37 PM	8339
Motor Oil Range Organics (MRO)	ND	5000		mg/Kg	100	7/15/2013 4:21:37 PM	8339
Surr: DNOP	0	63-147	S	%REC	100	7/15/2013 4:21:37 PM	8339
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: DAM
Gasoline Range Organics (GRO)	230	46		mg/Kg	10	7/15/2013 4:10:25 PM	8345
Surr: BFB	126	80-120	S	%REC	10	7/15/2013 4:10:25 PM	8345
<b>MERCURY, TCLP</b>							Analyst: TES
Mercury	ND	0.020		mg/L	1	7/17/2013 5:40:38 PM	8429
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: JLF
Arsenic	ND	5.0		mg/L	1	7/18/2013 4:40:01 PM	8438
Barium	ND	100		mg/L	5	7/18/2013 3:22:07 PM	8438
Cadmium	ND	1.0		mg/L	1	7/18/2013 2:47:10 PM	8438
Chromium	ND	5.0		mg/L	1	7/18/2013 2:47:10 PM	8438
Lead	ND	5.0		mg/L	1	7/18/2013 2:47:10 PM	8438
Selenium	ND	1.0		mg/L	1	7/19/2013 11:22:21 AM	8438
Silver	ND	5.0		mg/L	1	7/18/2013 2:47:10 PM	8438
<b>EPA METHOD 8270C TCLP</b>							Analyst: JDC
2-Methylphenol	ND	200		mg/L	1	7/16/2013 6:21:47 PM	8399
3+4-Methylphenol	ND	200		mg/L	1	7/16/2013 6:21:47 PM	8399
Phenol	ND	200		mg/L	1	7/16/2013 6:21:47 PM	8399
2,4-Dinitrotoluene	ND	0.13		mg/L	1	7/16/2013 6:21:47 PM	8399
Hexachlorobenzene	ND	0.13		mg/L	1	7/16/2013 6:21:47 PM	8399
Hexachlorobutadiene	ND	0.50		mg/L	1	7/16/2013 6:21:47 PM	8399
Hexachloroethane	ND	3.0		mg/L	1	7/16/2013 6:21:47 PM	8399
Nitrobenzene	ND	2.0		mg/L	1	7/16/2013 6:21:47 PM	8399
Pentachlorophenol	ND	100		mg/L	1	7/16/2013 6:21:47 PM	8399
Pyridine	ND	5.0		mg/L	1	7/16/2013 6:21:47 PM	8399
2,4,5-Trichlorophenol	ND	400		mg/L	1	7/16/2013 6:21:47 PM	8399
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	7/16/2013 6:21:47 PM	8399
Cresols, Total	ND	200		mg/L	1	7/16/2013 6:21:47 PM	8399
Surr: 2,4,6-Tribromophenol	64.2	26.8-116		%REC	1	7/16/2013 6:21:47 PM	8399
Surr: 2-Fluorobiphenyl	70.4	47.7-94		%REC	1	7/16/2013 6:21:47 PM	8399
Surr: 2-Fluorophenol	57.5	17.9-87.1		%REC	1	7/16/2013 6:21:47 PM	8399
Surr: 4-Terphenyl-d14	81.5	39.2-96.2		%REC	1	7/16/2013 6:21:47 PM	8399
Surr: Nitrobenzene-d5	85.4	49.8-105		%REC	1	7/16/2013 6:21:47 PM	8399
Surr: Phenol-d5	41.7	22.3-60.5		%REC	1	7/16/2013 6:21:47 PM	8399
<b>VOLATILES BY 8260B/1311</b>							Analyst: JMP
Benzene	ND	0.50		mg/L	1	7/17/2013 3:37:37 AM	8390

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307524

Date Reported: 7/19/2013

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Soil Pile Behind 101/102

**Project:** Excavation Behind Tank

**Collection Date:** 7/10/2013 3:30:00 PM

**Lab ID:** 1307524-001

**Matrix:** SOIL

**Received Date:** 7/12/2013 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>VOLATILES BY 8260B/1311</b>							Analyst: <b>JMP</b>
2-Butanone	ND	10		mg/L	1	7/17/2013 3:37:37 AM	8390
Carbon Tetrachloride	ND	0.50		mg/L	1	7/17/2013 3:37:37 AM	8390
Chlorobenzene	ND	100		mg/L	1	7/17/2013 3:37:37 AM	8390
Chloroform	ND	6.0		mg/L	1	7/17/2013 3:37:37 AM	8390
1,4-Dichlorobenzene	ND	7.5		mg/L	1	7/17/2013 3:37:37 AM	8390
1,2-Dichloroethane (EDC)	ND	0.50		mg/L	1	7/17/2013 3:37:37 AM	8390
1,1-Dichloroethene	ND	0.70		mg/L	1	7/17/2013 3:37:37 AM	8390
Hexachlorobutadiene	ND	0.50		mg/L	1	7/17/2013 3:37:37 AM	8390
Tetrachloroethene (PCE)	ND	0.70		mg/L	1	7/17/2013 3:37:37 AM	8390
Trichloroethene (TCE)	ND	0.50		mg/L	1	7/17/2013 3:37:37 AM	8390
Vinyl chloride	ND	0.20		mg/L	1	7/17/2013 3:37:37 AM	8390
Surr: 1,2-Dichloroethane-d4	90.3	69.9-130		%REC	1	7/17/2013 3:37:37 AM	8390
Surr: 4-Bromofluorobenzene	89.6	71.2-123		%REC	1	7/17/2013 3:37:37 AM	8390
Surr: Dibromofluoromethane	92.5	73.9-134		%REC	1	7/17/2013 3:37:37 AM	8390
Surr: Toluene-d8	94.6	81.9-122		%REC	1	7/17/2013 3:37:37 AM	8390

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit



# Anatek Labs, Inc.

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**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 130716017  
**Project Name:** 1307524

## Analytical Results Report

<b>Sample Number</b>	130716017-001	<b>Sampling Date</b>	7/10/2013	<b>Date/Time Received</b>	7/16/2013 12:25 PM
<b>Client Sample ID</b>	1307524-001B / SOIL PILE BEHIND 101/102	<b>Sampling Time</b>	3:30 PM		
<b>Matrix</b>	Soil				
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	45.6	mg/Kg	3.2	7/18/2013	CRW	SW846 CH7	
Ignitability	Negative			7/17/2013	JWC	EPA 1030	
pH	8.83	ph Units		7/17/2013	AJT	EPA 9045	
Reactive sulfide	46.0	mg/kg	10	7/18/2013	AJT	SW846 CH7	
%moisture	21.4	Percent		7/16/2013	AJT	%moisture	

Authorized Signature

  
John Coddington, Lab Manager

MCL EPA's Maximum Contaminant Level  
ND Not Detected  
PQL Practical Quantitation Limit

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The results reported relate only to the samples indicated.  
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; IN:C-ID-01; KY:90142; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C595  
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095

Thursday, July 18, 2013

Page 1 of 1

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1307524

19-Jul-13

Client: Western Refining Southwest, Gallup

Project: Excavation Behind Tank

Sample ID: <b>MB-8339</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>8339</b>	RunNo: <b>11878</b>								
Prep Date: <b>7/12/2013</b>	Analysis Date: <b>7/12/2013</b>	SeqNo: <b>337805</b>		Units: <b>mg/Kg</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	7.9		10.00		79.3	63	147			

Sample ID: <b>LCS-8339</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>8339</b>	RunNo: <b>11878</b>								
Prep Date: <b>7/12/2013</b>	Analysis Date: <b>7/12/2013</b>	SeqNo: <b>337806</b>		Units: <b>mg/Kg</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Diesel Range Organics (DRO)	46	10	50.00	0	92.1	77.1	128			
Surr: DNOP	4.6		5.000		92.4	63	147			

Sample ID: <b>MB-8347</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>8347</b>	RunNo: <b>11922</b>								
Prep Date: <b>7/12/2013</b>	Analysis Date: <b>7/15/2013</b>	SeqNo: <b>339456</b>		Units: <b>%REC</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Surr: DNOP	8.6		10.00		85.7	63	147			
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Sample ID: <b>LCS-8347</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>8347</b>	RunNo: <b>11922</b>								
Prep Date: <b>7/12/2013</b>	Analysis Date: <b>7/15/2013</b>	SeqNo: <b>339457</b>		Units: <b>%REC</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Surr: DNOP	4.1		5.000		81.9	63	147			
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H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1307524

19-Jul-13

Client: Western Refining Southwest, Gallup

Project: Excavation Behind Tank

Sample ID: <b>MB-8345</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>8345</b>	RunNo: <b>11935</b>								
Prep Date: <b>7/12/2013</b>	Analysis Date: <b>7/15/2013</b>	SeqNo: <b>339766</b>		Units: <b>mg/Kg</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	950		1000		95.3	80	120			

Sample ID: <b>LCS-8345</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>8345</b>	RunNo: <b>11935</b>								
Prep Date: <b>7/12/2013</b>	Analysis Date: <b>7/15/2013</b>	SeqNo: <b>339767</b>		Units: <b>mg/Kg</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	90.6	62.6	136			
Surr: BFB	1000		1000		104	80	120			

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- P Sample pH greater than 2 for VOA and TOC only.
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# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1307524

19-Jul-13

Client: Western Refining Southwest, Gallup

Project: Excavation Behind Tank

Sample ID: <b>mb-8390</b>	SampType: <b>MBLK</b>	TestCode: <b>Volatiles by 8260B/1311</b>								
Client ID: <b>PBS</b>	Batch ID: <b>8390</b>	RunNo: <b>11981</b>								
Prep Date: <b>7/15/2013</b>	Analysis Date: <b>7/16/2013</b>	SeqNo: <b>340636</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.50								
2-Butanone	ND	10								
Carbon Tetrachloride	ND	0.50								
Chlorobenzene	ND	100								
Chloroform	ND	6.0								
1,4-Dichlorobenzene	ND	7.5								
1,2-Dichloroethane (EDC)	ND	0.50								
1,1-Dichloroethene	ND	0.70								
Hexachlorobutadiene	ND	0.50								
Tetrachloroethene (PCE)	ND	0.70								
Trichloroethene (TCE)	ND	0.50								
Vinyl chloride	ND	0.20								
Surr: 1,2-Dichloroethane-d4	0.17		0.2000		87.2	69.9	130			
Surr: 4-Bromofluorobenzene	0.19		0.2000		96.9	71.2	123			
Surr: Dibromofluoromethane	0.18		0.2000		92.4	73.9	134			
Surr: Toluene-d8	0.19		0.2000		92.9	81.9	122			

Sample ID: <b>lcs-8390</b>	SampType: <b>LCS</b>	TestCode: <b>Volatiles by 8260B/1311</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>8390</b>	RunNo: <b>11981</b>								
Prep Date: <b>7/15/2013</b>	Analysis Date: <b>7/17/2013</b>	SeqNo: <b>340637</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.41	0.10	0.4000	0	103	51.1	171			
Chlorobenzene	0.41	0.10	0.4000	0	102	36.1	191			
1,1-Dichloroethene	0.38	0.10	0.4000	0	95.3	49.1	162			
Trichloroethene (TCE)	0.38	0.10	0.4000	0	95.6	41.2	166			
Surr: 1,2-Dichloroethane-d4	0.18		0.2000		89.5	69.9	130			
Surr: 4-Bromofluorobenzene	0.20		0.2000		97.6	71.2	123			
Surr: Dibromofluoromethane	0.19		0.2000		93.4	73.9	134			
Surr: Toluene-d8	0.19		0.2000		92.9	81.9	122			

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# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1307524

19-Jul-13

Client: Western Refining Southwest, Gallup

Project: Excavation Behind Tank

Sample ID: <b>mb-8399</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8270C TCLP</b>								
Client ID: <b>PBS</b>	Batch ID: <b>8399</b>	RunNo: <b>11982</b>								
Prep Date: <b>7/16/2013</b>	Analysis Date: <b>7/16/2013</b>	SeqNo: <b>340675</b>			Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	ND	200								
3+4-Methylphenol	ND	200								
Phenol	ND	200								
2,4-Dinitrotoluene	ND	0.13								
Hexachlorobenzene	ND	0.13								
Hexachlorobutadiene	ND	0.50								
Hexachloroethane	ND	3.0								
Nitrobenzene	ND	2.0								
Pentachlorophenol	ND	100								
Pyridine	ND	5.0								
2,4,5-Trichlorophenol	ND	400								
2,4,6-Trichlorophenol	ND	2.0								
Cresols, Total	ND	200								
Surr: 2,4,6-Tribromophenol	0.11		0.2000		54.1	26.8	116			
Surr: 2-Fluorobiphenyl	0.069		0.1000		69.3	47.7	94			
Surr: 2-Fluorophenol	0.13		0.2000		65.3	17.9	87.1			
Surr: 4-Terphenyl-d14	0.072		0.1000		71.5	39.2	96.2			
Surr: Nitrobenzene-d5	0.060		0.1000		60.4	49.8	105			
Surr: Phenol-d5	0.096		0.2000		48.1	22.3	60.5			

Sample ID: <b>lcs-8399</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8270C TCLP</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>8399</b>	RunNo: <b>11982</b>								
Prep Date: <b>7/16/2013</b>	Analysis Date: <b>7/16/2013</b>	SeqNo: <b>340676</b>			Units: <b>mg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	0.065	0.010	0.1000	0	65.0	32	109			
3+4-Methylphenol	0.16	0.010	0.2000	0	78.9	36.2	121			
2,4-Dinitrotoluene	0.075	0.010	0.1000	0	75.0	40	108			
Hexachlorobenzene	0.071	0.010	0.1000	0	70.8	40.5	89			
Hexachlorobutadiene	0.065	0.010	0.1000	0	64.7	23	98.8			
Hexachloroethane	0.072	0.010	0.1000	0	71.7	20.9	104			
Nitrobenzene	0.090	0.010	0.1000	0	89.7	38.4	118			
Pentachlorophenol	0.046	0.010	0.1000	0	46.4	13	106			
Pyridine	0.016	0.010	0.1000	0	16.3	9.77	85.3			
2,4,5-Trichlorophenol	0.089	0.010	0.1000	0	89.5	19.6	118			
2,4,6-Trichlorophenol	0.083	0.010	0.1000	0	82.9	15.6	117			
Cresols, Total	0.24	0.010	0.3000	0	80.6	35.6	116			
Surr: 2,4,6-Tribromophenol	0.12		0.2000		61.6	26.8	116			
Surr: 2-Fluorobiphenyl	0.077		0.1000		77.0	47.7	94			
Surr: 2-Fluorophenol	0.11		0.2000		53.4	17.9	87.1			

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- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1307524

19-Jul-13

Client: Western Refining Southwest, Gallup

Project: Excavation Behind Tank

Sample ID: <b>Ics-8399</b>		SampType: <b>LCS</b>		TestCode: <b>EPA Method 8270C TCLP</b>						
Client ID: <b>LCSS</b>		Batch ID: <b>8399</b>		RunNo: <b>11982</b>						
Prep Date: <b>7/16/2013</b>		Analysis Date: <b>7/16/2013</b>		SeqNo: <b>340676</b>			Units: <b>mg/L</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	0.078		0.1000		78.5	39.2	96.2			
Surr: Nitrobenzene-d5	0.080		0.1000		80.5	49.8	105			
Surr: Phenol-d5	0.076		0.2000		37.9	22.3	60.5			

## Qualifiers:

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E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1307524

19-Jul-13

Client: Western Refining Southwest, Gallup

Project: Excavation Behind Tank

Sample ID: <b>MB-8429</b>	SampType: <b>MBLK</b>	TestCode: <b>MERCURY, TCLP</b>								
Client ID: <b>PBW</b>	Batch ID: <b>8429</b>	RunNo: <b>12011</b>								
Prep Date: <b>7/17/2013</b>	Analysis Date: <b>7/17/2013</b>	SeqNo: <b>341348</b>	Units: <b>mg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020								

Sample ID: <b>LCS-8429</b>	SampType: <b>LCS</b>	TestCode: <b>MERCURY, TCLP</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>8429</b>	RunNo: <b>12011</b>								
Prep Date: <b>7/17/2013</b>	Analysis Date: <b>7/17/2013</b>	SeqNo: <b>341349</b>	Units: <b>mg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020	0.005000	0	96.0	80	120			

Sample ID: <b>1307524-001AMS</b>	SampType: <b>MS</b>	TestCode: <b>MERCURY, TCLP</b>								
Client ID: <b>Soil Pile Behind 101</b>	Batch ID: <b>8429</b>	RunNo: <b>12011</b>								
Prep Date: <b>7/17/2013</b>	Analysis Date: <b>7/17/2013</b>	SeqNo: <b>341356</b>	Units: <b>mg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020	0.005000	0	95.3	75	125			

Sample ID: <b>1307524-001AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>MERCURY, TCLP</b>								
Client ID: <b>Soil Pile Behind 101</b>	Batch ID: <b>8429</b>	RunNo: <b>12011</b>								
Prep Date: <b>7/17/2013</b>	Analysis Date: <b>7/17/2013</b>	SeqNo: <b>341357</b>	Units: <b>mg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020	0.005000	0	94.4	75	125	0	20	

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1307524

19-Jul-13

Client: Western Refining Southwest, Gallup

Project: Excavation Behind Tank

Sample ID: <b>MB-8438</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 6010B: TCLP Metals</b>								
Client ID: <b>PBW</b>	Batch ID: <b>8438</b>	RunNo: <b>12051</b>								
Prep Date: <b>7/18/2013</b>	Analysis Date: <b>7/18/2013</b>	SeqNo: <b>342596</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	100								
Cadmium	ND	1.0								
Chromium	ND	5.0								
Lead	ND	5.0								
Silver	ND	5.0								

Sample ID: <b>LCS-8438</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 6010B: TCLP Metals</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>8438</b>	RunNo: <b>12051</b>								
Prep Date: <b>7/18/2013</b>	Analysis Date: <b>7/18/2013</b>	SeqNo: <b>342597</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	100	0.5000	0	103	80	120			
Cadmium	ND	1.0	0.5000	0	104	80	120			
Chromium	ND	5.0	0.5000	0	100	80	120			
Lead	ND	5.0	0.5000	0	98.7	80	120			
Silver	ND	5.0	0.1000	0	107	80	120			

Sample ID: <b>MB-8438</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 6010B: TCLP Metals</b>								
Client ID: <b>PBW</b>	Batch ID: <b>8438</b>	RunNo: <b>12051</b>								
Prep Date: <b>7/18/2013</b>	Analysis Date: <b>7/18/2013</b>	SeqNo: <b>342625</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	5.0								

Sample ID: <b>LCS-8438</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 6010B: TCLP Metals</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>8438</b>	RunNo: <b>12051</b>								
Prep Date: <b>7/18/2013</b>	Analysis Date: <b>7/18/2013</b>	SeqNo: <b>342626</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	5.0	0.5000	0	113	80	120			

Sample ID: <b>MB-8438</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 6010B: TCLP Metals</b>								
Client ID: <b>PBW</b>	Batch ID: <b>8438</b>	RunNo: <b>12065</b>								
Prep Date: <b>7/18/2013</b>	Analysis Date: <b>7/19/2013</b>	SeqNo: <b>343176</b> Units: <b>mg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	ND	1.0								

### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit



# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1307524

19-Jul-13

Client: Western Refining Southwest, Gallup

Project: Excavation Behind Tank

Sample ID: <b>LCS-8438</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 6010B: TCLP Metals</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>8438</b>	RunNo: <b>12065</b>								
Prep Date: <b>7/18/2013</b>	Analysis Date: <b>7/19/2013</b>	SeqNo: <b>343177</b>		Units: <b>mg/L</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	ND	1.0	0.5000	0	111	80	120			

## Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87105  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1307524

RcptNo: 1

Received by/date:

*[Signature]* 07/12/13

Logged By: Lindsay Mangin

7/12/2013 7:00:00 AM

*[Signature]*

Completed By: Lindsay Mangin

7/12/2013 7:31:13 AM

*[Signature]*

Reviewed By:

*mg*

07/12/13

### Chain of Custody

1. Custody seals intact on sample bottles? Yes ☒ No ☐ Not Present ☐  
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐  
3. How was the sample delivered? FedEx

### Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐  
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐  
6. Sample(s) in proper container(s)? Yes ☒ No ☐  
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐  
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐  
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐  
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒  
11. Were any sample containers received broken? Yes ☐ No ☒  
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐  
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐  
14. Is it clear what analyses were requested? Yes ☒ No ☐  
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH:

(<2 or >12 unless noted)

Adjusted? \_\_\_\_\_

Checked by: \_\_\_\_\_

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.1	Good	Yes			

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.

[illegible]



*Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)*

July 25, 2013

Cheryl Johnson  
Western Refining Southwest, Gallup  
Rt. 3 Box 7  
Gallup, NM 87301  
TEL: (505) 722-0231  
FAX (505) 722-0210

RE: Seep West of T102

OrderNo.: 1307891

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 7/19/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

**Analytical Report**

Lab Order 1307891

Date Reported: 7/25/2013

**Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Gallup**Client Sample ID:** Soil Drill Cuttings**Project:** Seep West of T102**Collection Date:** 7/17/2013 8:00:00 AM**Lab ID:** 1307891-001**Matrix:** SOIL**Received Date:** 7/19/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	140	9.9		mg/Kg	1	7/23/2013 4:23:04 PM	8486
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/23/2013 4:23:04 PM	8486
Surr: DNOP	116	63-147		%REC	1	7/23/2013 4:23:04 PM	8486
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>DAM</b>
Gasoline Range Organics (GRO)	390	46		mg/Kg	10	7/23/2013 12:43:46 PM	8488
Surr: BFB	134	80-120	S	%REC	10	7/23/2013 12:43:46 PM	8488
<b>MERCURY, TCLP</b>							Analyst: <b>IDC</b>
Mercury	ND	0.020		mg/L	1	7/24/2013 2:16:28 PM	8537
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>JLF</b>
Arsenic	ND	5.0		mg/L	1	7/24/2013 2:27:37 PM	8533
Barium	ND	100		mg/L	5	7/24/2013 2:37:31 PM	8533
Cadmium	ND	1.0		mg/L	1	7/24/2013 2:27:37 PM	8533
Chromium	ND	5.0		mg/L	1	7/24/2013 2:27:37 PM	8533
Lead	ND	5.0		mg/L	1	7/24/2013 2:27:37 PM	8533
Selenium	ND	1.0		mg/L	1	7/24/2013 2:27:37 PM	8533
Silver	ND	5.0		mg/L	1	7/24/2013 2:27:37 PM	8533
<b>EPA METHOD 8270C TCLP</b>							Analyst: <b>DAM</b>
2-Methylphenol	ND	200		mg/L	1	7/23/2013 2:47:06 PM	8508
3+4-Methylphenol	ND	200		mg/L	1	7/23/2013 2:47:06 PM	8508
Phenol	ND	200		mg/L	1	7/23/2013 2:47:06 PM	8508
2,4-Dinitrotoluene	ND	0.13		mg/L	1	7/23/2013 2:47:06 PM	8508
Hexachlorobenzene	ND	0.13		mg/L	1	7/23/2013 2:47:06 PM	8508
Hexachlorobutadiene	ND	0.50		mg/L	1	7/23/2013 2:47:06 PM	8508
Hexachloroethane	ND	3.0		mg/L	1	7/23/2013 2:47:06 PM	8508
Nitrobenzene	ND	2.0		mg/L	1	7/23/2013 2:47:06 PM	8508
Pentachlorophenol	ND	100		mg/L	1	7/23/2013 2:47:06 PM	8508
Pyridine	ND	5.0		mg/L	1	7/23/2013 2:47:06 PM	8508
2,4,5-Trichlorophenol	ND	400		mg/L	1	7/23/2013 2:47:06 PM	8508
2,4,6-Trichlorophenol	ND	2.0		mg/L	1	7/23/2013 2:47:06 PM	8508
Cresols, Total	ND	200		mg/L	1	7/23/2013 2:47:06 PM	8508
Surr: 2,4,6-Tribromophenol	67.2	26.8-116		%REC	1	7/23/2013 2:47:06 PM	8508
Surr: 2-Fluorobiphenyl	72.0	47.7-94		%REC	1	7/23/2013 2:47:06 PM	8508
Surr: 2-Fluorophenol	70.6	17.9-87.1		%REC	1	7/23/2013 2:47:06 PM	8508
Surr: 4-Terphenyl-d14	81.0	39.2-96.2		%REC	1	7/23/2013 2:47:06 PM	8508
Surr: Nitrobenzene-d5	81.6	49.8-105		%REC	1	7/23/2013 2:47:06 PM	8508
Surr: Phenol-d5	59.3	22.3-60.5		%REC	1	7/23/2013 2:47:06 PM	8508
<b>VOLATILES BY 8260B/1311</b>							Analyst: <b>DJF</b>
Benzene	ND	0.50		mg/L	1	7/23/2013 3:58:11 PM	8505

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* 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	ND Not Detected at the Reporting Limit
	O RSD is greater than RSDlimit	P Sample pH greater than 2 for VOA and TOC only.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307891

Date Reported: 7/25/2013

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: Soil Drill Cuttings

Project: Seep West of T102

Collection Date: 7/17/2013 8:00:00 AM

Lab ID: 1307891-001

Matrix: SOIL

Received Date: 7/19/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>VOLATILES BY 8260B/1311</b>							Analyst: DJF
2-Butanone	ND	10		mg/L	1	7/23/2013 3:58:11 PM	8505
Carbon Tetrachloride	ND	0.50		mg/L	1	7/23/2013 3:58:11 PM	8505
Chlorobenzene	ND	100		mg/L	1	7/23/2013 3:58:11 PM	8505
Chloroform	ND	6.0		mg/L	1	7/23/2013 3:58:11 PM	8505
1,4-Dichlorobenzene	ND	7.5		mg/L	1	7/23/2013 3:58:11 PM	8505
1,2-Dichloroethane (EDC)	ND	0.50		mg/L	1	7/23/2013 3:58:11 PM	8505
1,1-Dichloroethene	ND	0.70		mg/L	1	7/23/2013 3:58:11 PM	8505
Hexachlorobutadiene	ND	0.50		mg/L	1	7/23/2013 3:58:11 PM	8505
Tetrachloroethene (PCE)	ND	0.70		mg/L	1	7/23/2013 3:58:11 PM	8505
Trichloroethene (TCE)	ND	0.50		mg/L	1	7/23/2013 3:58:11 PM	8505
Vinyl chloride	ND	0.20		mg/L	1	7/23/2013 3:58:11 PM	8505
Surr: 1,2-Dichloroethane-d4	90.6	69.9-130		%REC	1	7/23/2013 3:58:11 PM	8505
Surr: 4-Bromofluorobenzene	92.0	71.2-123		%REC	1	7/23/2013 3:58:11 PM	8505
Surr: Dibromofluoromethane	89.4	73.9-134		%REC	1	7/23/2013 3:58:11 PM	8505
Surr: Toluene-d8	93.4	81.9-122		%REC	1	7/23/2013 3:58:11 PM	8505
<b>EPA METHOD 418.1: TPH</b>							Analyst: jmb
Petroleum Hydrocarbons, TR	430	20		mg/Kg	1	7/23/2013	8510

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

# Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email [moscow@anateklabs.com](mailto:moscow@anateklabs.com)  
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email [spokane@anateklabs.com](mailto:spokane@anateklabs.com)

**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

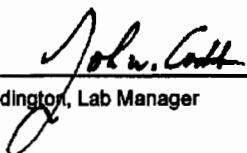
**Batch #:** 130723030  
**Project Name:** 1307891

## Analytical Results Report

<b>Sample Number</b>	130723030-001	<b>Sampling Date</b>	7/17/2013	<b>Date/Time Received</b>	7/23/2013 10:50 AM
<b>Client Sample ID</b>	1307891-001B / SOIL DRILL CUTTINGS			<b>Sampling Time</b>	8:00 AM
<b>Matrix</b>	Soil	<b>Sample Location</b>			
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	0.3	7/24/2013	CRW	SW846 CH7	
Ignitability	Negative			7/23/2013	JWC	EPA 1030	
pH	7.90	ph Units		7/24/2013	AJT	EPA 9045	
Reactive sulfide	ND	mg/kg	10	7/24/2013	AJT	SW846 CH7	
%moisture	17.8	Percent		7/23/2013	AJT	%moisture	

Authorized Signature

  
John Coddington, Lab Manager

MCL EPA's Maximum Contaminant Level  
ND Not Detected  
PQL Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.  
The results reported relate only to the samples indicated.  
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1307891

25-Jul-13

Client: Western Refining Southwest, Gallup

Project: Seep West of T102

Sample ID	MB-8510	SampType:	MBLK	TestCode:	EPA Method 418.1: TPH					
Client ID:	PBS	Batch ID:	8510	RunNo:	12130					
Prep Date:	7/23/2013	Analysis Date:	7/23/2013	SeqNo:	344995	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	20								

Sample ID	LCS-8510	SampType:	LCS	TestCode:	EPA Method 418.1: TPH					
Client ID:	LCSS	Batch ID:	8510	RunNo:	12130					
Prep Date:	7/23/2013	Analysis Date:	7/23/2013	SeqNo:	344996	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	92	20	100.0	0	91.8	80	120			

Sample ID	LCSD-8510	SampType:	LCSD	TestCode:	EPA Method 418.1: TPH					
Client ID:	LCSS02	Batch ID:	8510	RunNo:	12130					
Prep Date:	7/23/2013	Analysis Date:	7/23/2013	SeqNo:	344997	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	95	20	100.0	0	94.6	80	120	3.01	20	

### 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 | ND Not Detected at the Reporting Limit               |
| O RSD is greater than RSDlimit               | P Sample pH greater than 2 for VOA and TOC only.     |
| R RPD outside accepted recovery limits       | RL Reporting Detection Limit                         |



# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1307891

25-Jul-13

Client: Western Refining Southwest, Gallup

Project: Seep West of T102

Sample ID	LCS-8486		SampType:	LCS		TestCode:	EPA Method 8015D: Diesel Range Organics				
Client ID:	LCSS		Batch ID:	8486		RunNo:	12083				
Prep Date:	7/22/2013		Analysis Date:	7/22/2013		SeqNo:	343712		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	44	10	50.00	0	88.0	77.1	128				
Surr: DNOP	4.2		5.000		84.9	63	147				

Sample ID	MB-8486		SampType:	MBLK		TestCode:	EPA Method 8015D: Diesel Range Organics				
Client ID:	PBS		Batch ID:	8486		RunNo:	12083				
Prep Date:	7/22/2013		Analysis Date:	7/22/2013		SeqNo:	343713		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	ND	10									
Motor Oil Range Organics (MRO)	ND	50									
Surr: DNOP	9.0		10.00		89.5	63	147				

Sample ID	1307891-001AMS		SampType:	MS		TestCode:	EPA Method 8015D: Diesel Range Organics				
Client ID:	Soil Drill Cuttings		Batch ID:	8486		RunNo:	12137				
Prep Date:	7/22/2013		Analysis Date:	7/23/2013		SeqNo:	345199		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	270	10	50.15	183.6	169	61.3	138			S	
Surr: DNOP	6.3		5.015		125	63	147				

Sample ID	1307891-001AMSD		SampType:	MSD		TestCode:	EPA Method 8015D: Diesel Range Organics				
Client ID:	Soil Drill Cuttings		Batch ID:	8486		RunNo:	12137				
Prep Date:	7/22/2013		Analysis Date:	7/23/2013		SeqNo:	345200		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	150	9.9	49.31	183.6	-71.1	61.3	138	48.0	20	SR	
Surr: DNOP	6.0		4.931		121	63	147	0	0		

## Qualifiers:

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- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1307891

25-Jul-13

Client: Western Refining Southwest, Gallup

Project: Seep West of T102

Sample ID	MB-8488	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	8488	RunNo:	12124					
Prep Date:	7/22/2013	Analysis Date:	7/23/2013	SeqNo:	345356	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1200		1000		116	80	120			

## Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1307891

25-Jul-13

Client: Western Refining Southwest, Gallup

Project: Seep West of T102

Sample ID	<b>MB-8505</b>		SampType:	<b>MBLK</b>		TestCode:	<b>Volatiles by 8260B/1311</b>			
Client ID:	<b>PBS</b>		Batch ID:	<b>8505</b>		RunNo:	<b>12138</b>			
Prep Date:	<b>7/22/2013</b>		Analysis Date:	<b>7/23/2013</b>		SeqNo:	<b>345217</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.50								
2-Butanone	ND	10								
Carbon Tetrachloride	ND	0.50								
Chlorobenzene	ND	100								
Chloroform	ND	6.0								
1,4-Dichlorobenzene	ND	7.5								
1,2-Dichloroethane (EDC)	ND	0.50								
1,1-Dichloroethene	ND	0.70								
Hexachlorobutadiene	ND	0.50								
Tetrachloroethene (PCE)	ND	0.70								
Trichloroethene (TCE)	ND	0.50								
Vinyl chloride	ND	0.20								
Surr: 1,2-Dichloroethane-d4	0.18		0.2000		88.0	69.9	130			
Surr: 4-Bromofluorobenzene	0.18		0.2000		91.5	71.2	123			
Surr: Dibromofluoromethane	0.19		0.2000		95.9	73.9	134			
Surr: Toluene-d8	0.18		0.2000		89.7	81.9	122			

Sample ID	<b>LCS-8505</b>		SampType:	<b>LCS</b>		TestCode:	<b>Volatiles by 8260B/1311</b>			
Client ID:	<b>LCSS</b>		Batch ID:	<b>8505</b>		RunNo:	<b>12138</b>			
Prep Date:	<b>7/22/2013</b>		Analysis Date:	<b>7/23/2013</b>		SeqNo:	<b>345218</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.46	0.30	0.4000	0	115	51.1	171			
Chlorobenzene	0.39	0.30	0.4000	0	98.3	36.1	191			
1,1-Dichloroethene	0.48	0.30	0.4000	0	121	49.1	162			
Trichloroethene (TCE)	0.42	0.30	0.4000	0	104	41.2	166			
Surr: 1,2-Dichloroethane-d4	0.17		0.2000		86.4	69.9	130			
Surr: 4-Bromofluorobenzene	0.19		0.2000		94.6	71.2	123			
Surr: Dibromofluoromethane	0.19		0.2000		95.5	73.9	134			
Surr: Toluene-d8	0.19		0.2000		93.3	81.9	122			

Sample ID	<b>1307891-001AMS</b>		SampType:	<b>MS</b>		TestCode:	<b>Volatiles by 8260B/1311</b>			
Client ID:	<b>Soil Drill Cuttings</b>		Batch ID:	<b>8505</b>		RunNo:	<b>12138</b>			
Prep Date:	<b>7/22/2013</b>		Analysis Date:	<b>7/23/2013</b>		SeqNo:	<b>345221</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.49	0.30	0.4000	0	122	51.1	171			
Chlorobenzene	0.41	0.30	0.4000	0	103	36.1	191			
1,1-Dichloroethene	0.45	0.30	0.4000	0	113	49.1	162			
Trichloroethene (TCE)	0.40	0.30	0.4000	0	99.1	41.2	166			

### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1307891

25-Jul-13

Client: Western Refining Southwest, Gallup

Project: Seep West of T102

Sample ID	1307891-001AMS	SampType:	MS	TestCode:	Volatiles by 8260B/1311					
Client ID:	Soil Drill Cuttings	Batch ID:	8505	RunNo:	12138					
Prep Date:	7/22/2013	Analysis Date:	7/23/2013	SeqNo:	345221	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.19		0.2000		95.4	69.9	130			
Surr: 4-Bromofluorobenzene	0.20		0.2000		99.3	71.2	123			
Surr: Dibromofluoromethane	0.17		0.2000		85.6	73.9	134			
Surr: Toluene-d8	0.19		0.2000		93.4	81.9	122			

Sample ID	1307891-001AMSD			SampType:	MSD		TestCode:	Volatiles by 8260B/1311			
Client ID:	Soil Drill Cuttings			Batch ID:	8505		RunNo:	12138			
Prep Date:	7/22/2013			Analysis Date:	7/23/2013		SeqNo:	345222		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	0.39	0.30	0.4000	0	96.9	51.1	171	23.0	0		
Chlorobenzene	0.37	0.30	0.4000	0	92.0	36.1	191	11.8	0		
1,1-Dichloroethene	0.38	0.30	0.4000	0	94.0	49.1	162	18.3	0		
Trichloroethene (TCE)	0.35	0.30	0.4000	0	87.0	41.2	166	13.1	0		
Surr: 1,2-Dichloroethane-d4	0.17		0.2000		87.3	69.9	130	0	0		
Surr: 4-Bromofluorobenzene	0.18		0.2000		91.4	71.2	123	0	0		
Surr: Dibromofluoromethane	0.17		0.2000		86.4	73.9	134	0	0		
Surr: Toluene-d8	0.19		0.2000		93.4	81.9	122	0	0		

### Qualifiers:

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- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1307891

25-Jul-13

Client: Western Refining Southwest, Gallup

Project: Seep West of T102

Sample ID	mb-8508		SampType:	MBLK		TestCode:	EPA Method 8270C TCLP				
Client ID:	PBS		Batch ID:	8508		RunNo:	12150				
Prep Date:	7/23/2013		Analysis Date:	7/23/2013		SeqNo:	345776		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
2-Methylphenol	ND	200									
3+4-Methylphenol	ND	200									
Phenol	ND	200									
2,4-Dinitrotoluene	ND	0.13									
Hexachlorobenzene	ND	0.13									
Hexachlorobutadiene	ND	0.50									
Hexachloroethane	ND	3.0									
Nitrobenzene	ND	2.0									
Pentachlorophenol	ND	100									
Pyridine	ND	5.0									
2,4,5-Trichlorophenol	ND	400									
2,4,6-Trichlorophenol	ND	2.0									
Cresols, Total	ND	200									
Surr: 2,4,6-Tribromophenol	0.14		0.2000		71.9	26.8	116				
Surr: 2-Fluorobiphenyl	0.072		0.1000		72.4	47.7	94				
Surr: 2-Fluorophenol	0.15		0.2000		73.0	17.9	87.1				
Surr: 4-Terphenyl-d14	0.079		0.1000		79.4	39.2	96.2				
Surr: Nitrobenzene-d5	0.081		0.1000		80.9	49.8	105				
Surr: Phenol-d5	0.12		0.2000		60.3	22.3	60.5				

Sample ID	lcs-8508		SampType: LCS		TestCode: EPA Method 8270C TCLP					
Client ID:	LCSS		Batch ID: 8508		RunNo: 12150					
Prep Date:	7/23/2013		Analysis Date: 7/23/2013		SeqNo: 345777		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2-Methylphenol	0.091	0.010	0.1000	0	91.4	32	109			
3+4-Methylphenol	0.21	0.010	0.2000	0	106	36.2	121			
2,4-Dinitrotoluene	0.065	0.010	0.1000	0	65.2	40	108			
Hexachlorobenzene	0.072	0.010	0.1000	0	72.3	40.5	89			
Hexachlorobutadiene	0.077	0.010	0.1000	0	77.4	23	98.8			
Hexachloroethane	0.082	0.010	0.1000	0	81.6	20.9	104			
Nitrobenzene	0.10	0.010	0.1000	0	103	38.4	118			
Pentachlorophenol	0.035	0.010	0.1000	0	35.3	13	106			
Pyridine	0.077	0.010	0.1000	0	77.0	9.77	85.3			
2,4,5-Trichlorophenol	0.070	0.010	0.1000	0	70.1	19.6	118			
2,4,6-Trichlorophenol	0.054	0.010	0.1000	0	53.9	15.6	117			
Cresols, Total	0.30	0.010	0.3000	0	101	35.6	116			
Surr: 2,4,6-Tribromophenol	0.14		0.2000		68.0	26.8	116			
Surr: 2-Fluorobiphenyl	0.075		0.1000		75.4	47.7	94			
Surr: 2-Fluorophenol	0.12		0.2000		62.1	17.9	87.1			

### Qualifiers:

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- E Value above quantitation range
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- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1307891

25-Jul-13

Client: Western Refining Southwest, Gallup

Project: Seep West of T102

Sample ID	ics-8508	SampType:	LCS	TestCode:	EPA Method 8270C TCLP					
Client ID:	LCSS	Batch ID:	8508	RunNo:	12150					
Prep Date:	7/23/2013	Analysis Date:	7/23/2013	SeqNo:	345777	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	0.088		0.1000		87.8	39.2	96.2			
Surr: Nitrobenzene-d5	0.090		0.1000		90.0	49.8	105			
Surr: Phenol-d5	0.11		0.2000		57.2	22.3	60.5			

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B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2 for VOA and TOC only.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1307891

25-Jul-13

Client: Western Refining Southwest, Gallup

Project: Seep West of T102

Sample ID	MB-8537	SampType:	MBLK	TestCode:	MERCURY, TCLP					
Client ID:	PBW	Batch ID:	8537	RunNo:	12151					
Prep Date:	7/24/2013	Analysis Date:	7/24/2013	SeqNo:	345795	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020								

Sample ID	LCS-8537	SampType:	LCS	TestCode:	MERCURY, TCLP					
Client ID:	LCSW	Batch ID:	8537	RunNo:	12151					
Prep Date:	7/24/2013	Analysis Date:	7/24/2013	SeqNo:	345796	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020	0.005000	0	99.4	80	120			

## Qualifiers:

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- E Value above quantitation range
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- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1307891

25-Jul-13

Client: Western Refining Southwest, Gallup

Project: Seep West of T102

Sample ID	MB-8533	SampType:	MBLK	TestCode:	EPA Method 6010B: TCLP Metals					
Client ID:	PBW	Batch ID:	8533	RunNo:	12154					
Prep Date:	7/24/2013	Analysis Date:	7/24/2013	SeqNo:	345858	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	5.0								
Barium	ND	100								
Cadmium	ND	1.0								
Chromium	ND	5.0								
Lead	ND	5.0								
Selenium	ND	1.0								
Silver	ND	5.0								

Sample ID	LCS-8533	SampType:	LCS	TestCode:	EPA Method 6010B: TCLP Metals					
Client ID:	LCSW	Batch ID:	8533	RunNo:	12154					
Prep Date:	7/24/2013	Analysis Date:	7/24/2013	SeqNo:	345859	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	5.0	0.5000	0	99.7	80	120			
Barium	ND	100	0.5000	0	90.3	80	120			
Cadmium	ND	1.0	0.5000	0	94.9	80	120			
Chromium	ND	5.0	0.5000	0	89.7	80	120			
Lead	ND	5.0	0.5000	0	89.2	80	120			
Selenium	ND	1.0	0.5000	0	97.9	80	120			
Silver	ND	5.0	0.1000	0	99.0	80	120			

Sample ID	1307891-001AMS	SampType:	MS	TestCode:	EPA Method 6010B: TCLP Metals					
Client ID:	Soil Drill Cuttings	Batch ID:	8533	RunNo:	12154					
Prep Date:	7/24/2013	Analysis Date:	7/24/2013	SeqNo:	345861	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	5.0	0.5000	0	98.0	75	125			
Cadmium	ND	1.0	0.5000	0	95.5	75	125			
Chromium	ND	5.0	0.5000	0	88.2	75	125			
Lead	ND	5.0	0.5000	0	88.9	75	125			
Selenium	ND	1.0	0.5000	0	95.0	75	125			
Silver	ND	5.0	0.1000	0	101	75	125			

Sample ID	1307891-001AMSD	SampType:	MSD	TestCode:	EPA Method 6010B: TCLP Metals					
Client ID:	Soil Drill Cuttings	Batch ID:	8533	RunNo:	12154					
Prep Date:	7/24/2013	Analysis Date:	7/24/2013	SeqNo:	345862	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	5.0	0.5000	0	95.0	75	125	0	20	
Cadmium	ND	1.0	0.5000	0	94.3	75	125	0	20	
Chromium	ND	5.0	0.5000	0	86.2	75	125	0	20	

## Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
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- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit



# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1307891

25-Jul-13

Client: Western Refining Southwest, Gallup

Project: Seep West of T102

Sample ID	1307891-001AMSD	SampType:	MSD	TestCode:	EPA Method 6010B: TCLP Metals					
Client ID:	Soil Drill Cuttings	Batch ID:	8533	RunNo:	12154					
Prep Date:	7/24/2013	Analysis Date:	7/24/2013	SeqNo:	345862	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	5.0	0.5000	0	87.5	75	125	0	20	
Selenium	ND	1.0	0.5000	0	95.1	75	125	0	20	
Silver	ND	5.0	0.1000	0	99.6	75	125	0	20	

## Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
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Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87105  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1307891

RcptNo: 1

Received by/date:	<i>MG</i>	<i>07/19/13</i>	
Logged By:	Michelle Garcia	7/19/2013 8:00:00 AM	<i>Michelle Garcia</i>
Completed By:	Michelle Garcia	7/19/2013 9:11:18 AM	<i>Michelle Garcia</i>
Reviewed By:	<i>IC</i>	<i>07/19/13</i>	

### Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? FedEx

### Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH: \_\_\_\_\_  
( $<2$  or  $>12$  unless noted)  
Adjusted? \_\_\_\_\_  
Checked by: \_\_\_\_\_

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:	_____	Date:	_____
By Whom:	_____	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

<b>Chain-of-Custody Record</b>		Turn-Around Time:
Client:	WESTERN REFINING	<input type="checkbox"/> Standard <b>X Rush</b> ASAP
	GALLUP REFINERY	Project Name:
Mailing Address:	Route 3 Box 7	Seep West of T102
	Gallup, NM 87301	Project #:
Phone #:	505 - 722-3833	Soil drill cuttings
Email or Fax#:	505-863-0930	Project Manager:
QA/QC Package:		Cheryl Johnson
<b>X Standard</b>	<input type="checkbox"/> Level 4 (Full Validation)	<u>Cheryl.johnson@wnr.com</u>
Accreditation:		Sampler: C. Johnson
<input type="checkbox"/> NELAP	<input type="checkbox"/> Other _____	On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> EDD (Type)		Sample Temperature: 77.0

Sample Temperature = 120

## Analysis Request

[illegible]

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  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)*

July 24, 2013

Cheryl Johnson

Western Refining Southwest, Gallup

Rt. 3 Box 7

Gallup, NM 87301

TEL: (505) 722-0231

FAX (505) 722-0210

RE: Seep West of Tank 102

OrderNo.: 1307892

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 4 sample(s) on 7/19/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

**Analytical Report**

Lab Order 1307892

Date Reported: 7/24/2013

**Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Gallup**Client Sample ID:** HA1**Project:** Seep West of Tank 102**Collection Date:** 7/17/2013 1:00:00 PM**Lab ID:** 1307892-001**Matrix:** AQUEOUS**Received Date:** 7/19/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE</b>							Analyst: <b>GSA</b>
Diesel Range Organics (DRO)	3.3	1.0		mg/L	1	7/19/2013 2:57:57 PM	8462
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	7/19/2013 2:57:57 PM	8462
Surr: DNOP	118	70.1-140		%REC	1	7/19/2013 2:57:57 PM	8462
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>DAM</b>
Gasoline Range Organics (GRO)	19	5.0		mg/L	100	7/19/2013 3:26:08 PM	R12077
Surr: BFB	93.4	51.5-151		%REC	100	7/19/2013 3:26:08 PM	R12077

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* 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	ND Not Detected at the Reporting Limit
	O RSD is greater than RSDlimit	P Sample pH greater than 2 for VOA and TOC only.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307892

Date Reported: 7/24/2013

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** HA2

**Project:** Seep West of Tank 102

**Collection Date:** 7/17/2013 1:15:00 PM

**Lab ID:** 1307892-002

**Matrix:** AQUEOUS

**Received Date:** 7/19/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE</b>							Analyst: <b>GSA</b>
Diesel Range Organics (DRO)	3.1	1.0		mg/L	1	7/19/2013 3:28:20 PM	8462
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	7/19/2013 3:28:20 PM	8462
Surr: DNOP	114	70.1-140		%REC	1	7/19/2013 3:28:20 PM	8462
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>DAM</b>
Gasoline Range Organics (GRO)	16	1.0		mg/L	20	7/19/2013 3:56:29 PM	R12077
Surr: BFB	102	51.5-151		%REC	20	7/19/2013 3:56:29 PM	R12077

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* 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	ND Not Detected at the Reporting Limit
	O RSD is greater than RSDlimit	P Sample pH greater than 2 for VOA and TOC only.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit

**Analytical Report**

Lab Order 1307892

Date Reported: 7/24/2013

**Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Gallup**Client Sample ID:** HA3**Project:** Seep West of Tank 102**Collection Date:** 7/17/2013 1:30:00 PM**Lab ID:** 1307892-003**Matrix:** AQUEOUS**Received Date:** 7/19/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE</b>							Analyst: <b>GSA</b>
Diesel Range Organics (DRO)	4.8	1.0		mg/L	1	7/19/2013 3:58:41 PM	8462
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	7/19/2013 3:58:41 PM	8462
Surr: DNOP	116	70.1-140		%REC	1	7/19/2013 3:58:41 PM	8462
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>DAM</b>
Gasoline Range Organics (GRO)	25	1.0		mg/L	20	7/19/2013 4:26:52 PM	R12077
Surr: BFB	114	51.5-151		%REC	20	7/19/2013 4:26:52 PM	R12077

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* 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	ND Not Detected at the Reporting Limit
	O RSD is greater than RSDlimit	P Sample pH greater than 2 for VOA and TOC only.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1307892

Date Reported: 7/24/2013

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** HA4

**Project:** Seep West of Tank 102

**Collection Date:** 7/17/2013 1:55:00 PM

**Lab ID:** 1307892-004

**Matrix:** AQUEOUS

**Received Date:** 7/19/2013 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE</b>							Analyst: <b>GSA</b>
Diesel Range Organics (DRO)	17	1.0		mg/L	1	7/19/2013 4:28:49 PM	8462
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	7/19/2013 4:28:49 PM	8462
Surr: DNOP	130	70.1-140		%REC	1	7/19/2013 4:28:49 PM	8462
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>DAM</b>
Gasoline Range Organics (GRO)	17	5.0		mg/L	100	7/19/2013 2:55:45 PM	R12077
Surr: BFB	92.9	51.5-151		%REC	100	7/19/2013 2:55:45 PM	R12077

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	<ul style="list-style-type: none"><li>* Value exceeds Maximum Contaminant Level.</li><li>E Value above quantitation range</li><li>J Analyte detected below quantitation limits</li><li>O RSD is greater than RSDlimit</li><li>R RPD outside accepted recovery limits</li></ul>	<ul style="list-style-type: none"><li>B Analyte detected in the associated Method Blank</li><li>H Holding times for preparation or analysis exceeded</li><li>ND Not Detected at the Reporting Limit</li><li>P Sample pH greater than 2 for VOA and TOC only.</li><li>RL Reporting Detection Limit</li></ul>
--------------------	--	---



# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1307892

24-Jul-13

Client: Western Refining Southwest, Gallup

Project: Seep West of Tank 102

Sample ID	MB-8462	SampType:	MBLK	TestCode:	EPA Method 8015D: Diesel Range						
Client ID:	PBW	Batch ID:	8462	RunNo:	12068						
Prep Date:	7/19/2013	Analysis Date:	7/19/2013	SeqNo:	343222	Units:	mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	ND	1.0									
Motor Oil Range Organics (MRO)	ND	5.0									
Surr: DNOP	1.1		1.000		107	70.1	140				

Sample ID	LCS-8462	SampType:	LCS	TestCode:	EPA Method 8015D: Diesel Range						
Client ID:	LCSW	Batch ID:	8462	RunNo:	12068						
Prep Date:	7/19/2013	Analysis Date:	7/19/2013	SeqNo:	343223	Units:	mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	5.6	1.0	5.000	0	113	89.1	151				
Surr: DNOP	0.64		0.5000		128	70.1	140				

## Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1307892

24-Jul-13

Client: Western Refining Southwest, Gallup

Project: Seep West of Tank 102

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R12077	RunNo:	12077					
Prep Date:		Analysis Date:	7/19/2013	SeqNo:	343355	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		87.8	51.5	151			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R12077	RunNo:	12077					
Prep Date:		Analysis Date:	7/19/2013	SeqNo:	343356	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	99.4	80	120			
Surr: BFB	19		20.00		96.7	51.5	151			

## Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit



4901 Hawkins NE  
Albuquerque, NM 87105  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1307892

RcptNo: 1

Received by/date:	<i>mg</i>	<i>07/19/13</i>
Logged By:	Michelle Garcia	7/19/2013 8:00:00 AM
Completed By:	Michelle Garcia	7/19/2013 9:27:02 AM
Reviewed By:	<i>IO</i>	<i>07/19/13</i>

*Michelle Garcia*

*Michelle Garcia*

### Chain of Custody

- |  |   |                             |                                      |
|--|---|-----------------------------|--------------------------------------|
| 1. Custody seals intact on sample bottles? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| 2. Is Chain of Custody complete?           | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| 3. How was the sample delivered?           | FedEx                                   |                             |                                      |

### Log In

- |   |   |  |                                       |
|---|---|--|---------------------------------------|
| 4. Was an attempt made to cool the samples?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | NA <input type="checkbox"/>           |
| 5. Were all samples received at a temperature of >0° C to 6.0°C                           | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | NA <input type="checkbox"/>           |
| 6. Sample(s) in proper container(s)?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                       |
| 7. Sufficient sample volume for indicated test(s)?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                       |
| 8. Are samples (except VOA and ONG) properly preserved?                                   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                       |
| 9. Was preservative added to bottles?   | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> | NA <input type="checkbox"/>           |
| 10. VOA vials have zero headspace?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | No VOA Vials <input type="checkbox"/> |
| 11. Were any sample containers received broken?   | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> |                                       |
| 12. Does paperwork match bottle labels?<br>(Note discrepancies on chain of custody)       | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                       |
| 13. Are matrices correctly identified on Chain of Custody?                                | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                       |
| 14. Is it clear what analyses were requested?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                       |
| 15. Were all holding times able to be met?<br>(If no, notify customer for authorization.) | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                       |

# of preserved  
bottles checked  
for pH: \_\_\_\_\_  
(<2 or >12 unless noted)  
Adjusted? \_\_\_\_\_  
Checked by: \_\_\_\_\_

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:	_____	Date:	_____
By Whom:	_____	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Client: WESTERN REFINING SW, INC.

Mailing Address: ROUTE 3 Box 7  
GALLUP, NM 87301

Phone #: 505-722-3833

email or Fax#: 505-863-0930

**QA/QC Package:**

☐ Standard ☐ Level 4 (Full Validation)

## Accreditation

☐ NELAP      ☐ Other \_\_\_\_\_☐ EDD (Type) \_\_\_\_\_

**11. Turn-Around Time:**

☒ **Standard**      ☐ **Rush**

Project Name:

SEEP WEST OF TANK 102

Project #:

**Project Manager:**

Project manager:  
CHERYL JOHNSON

Sampler: TRACY PAYNE RPS

On Ice: ☒ Yes

Sample Temperature

[illegible]

Date:	Time:	Relinquished by:
7-18/13	12:00	<i>[Signature]</i>
Date:	Time:	Relinquished by:

Received by:	Date	Time
<i>M. Miller</i>	07/19/13	0800
Received by:	Date	Time

Remarks:



## HALL ENVIRONMENTAL ANALYSIS LABORATORY

[www.hallenvironmental.com](http://www.hallenvironmental.com)

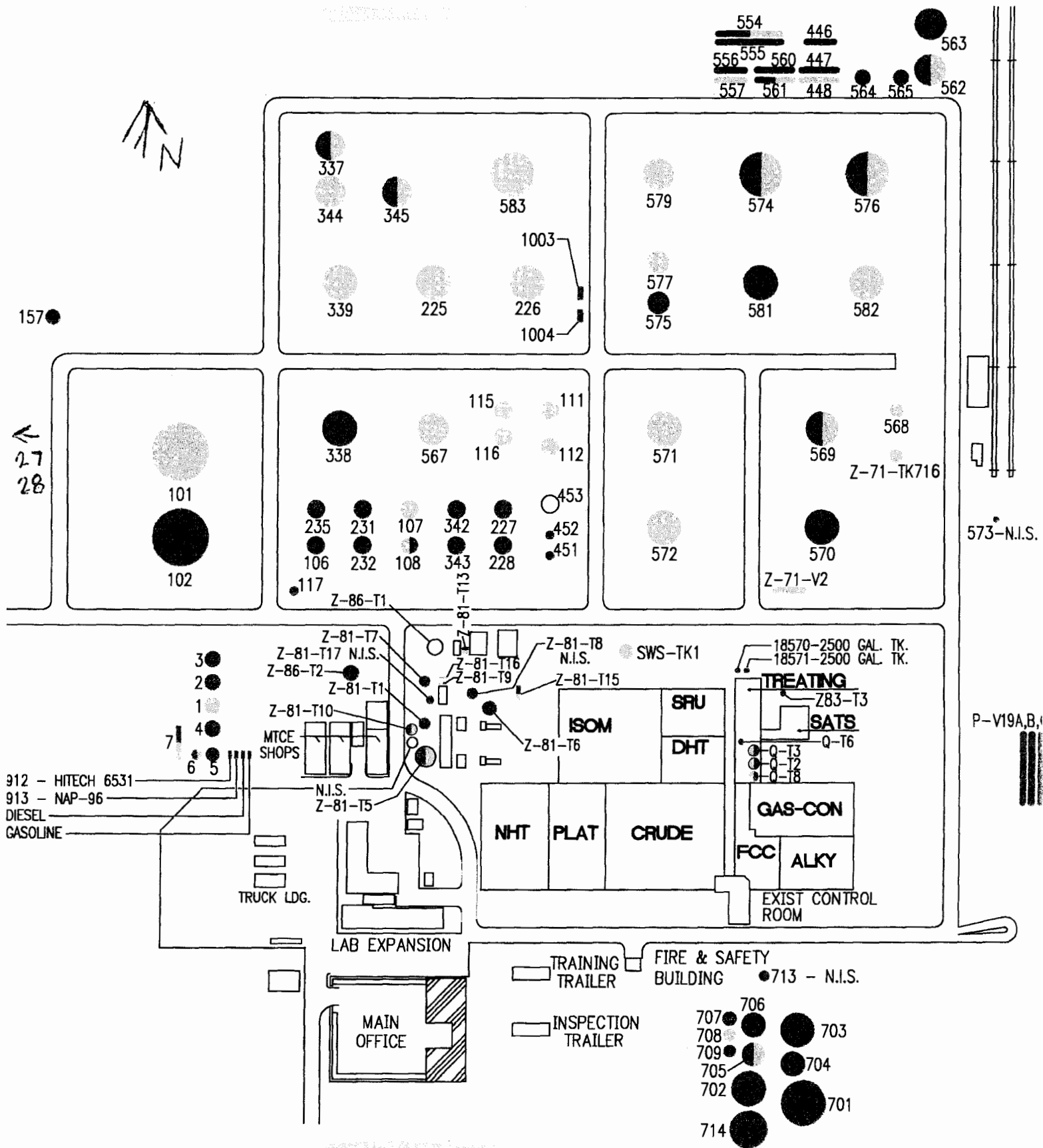
4901 Hawkins NE - Albuquerque, NM 87109

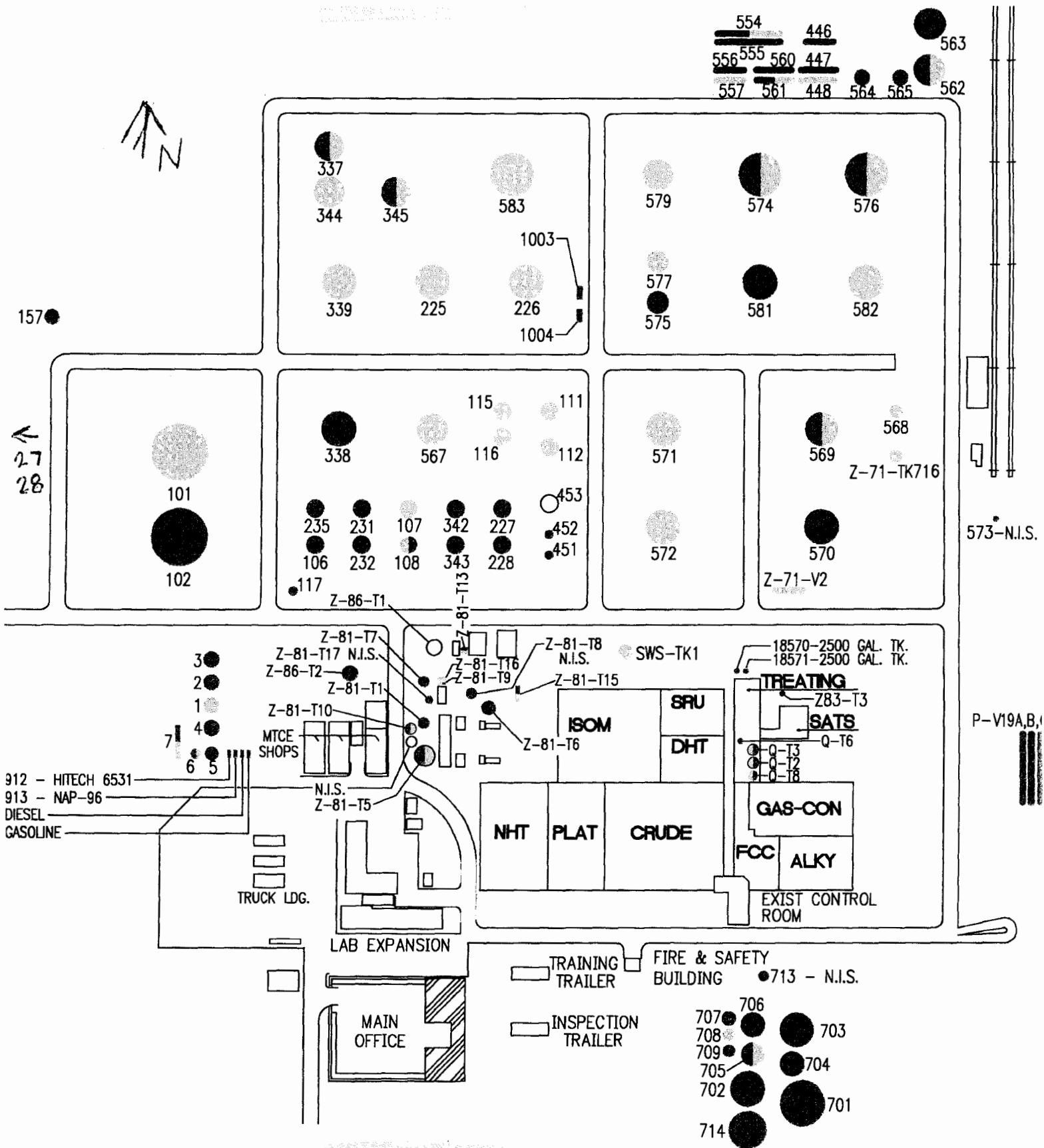
Tel. 505-345-3975      Fax 505-345-4107

## Analysis Request

[illegible]

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.

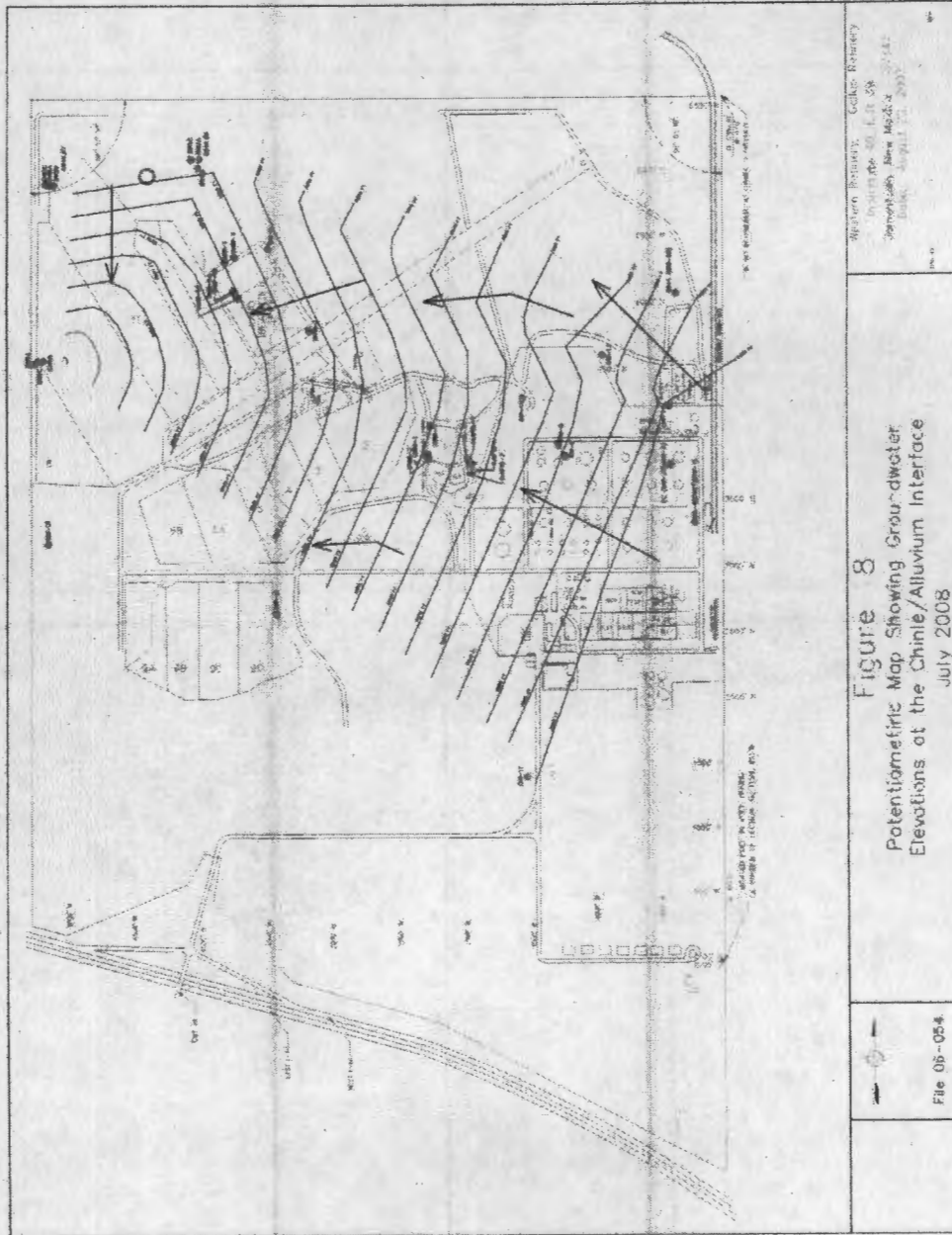


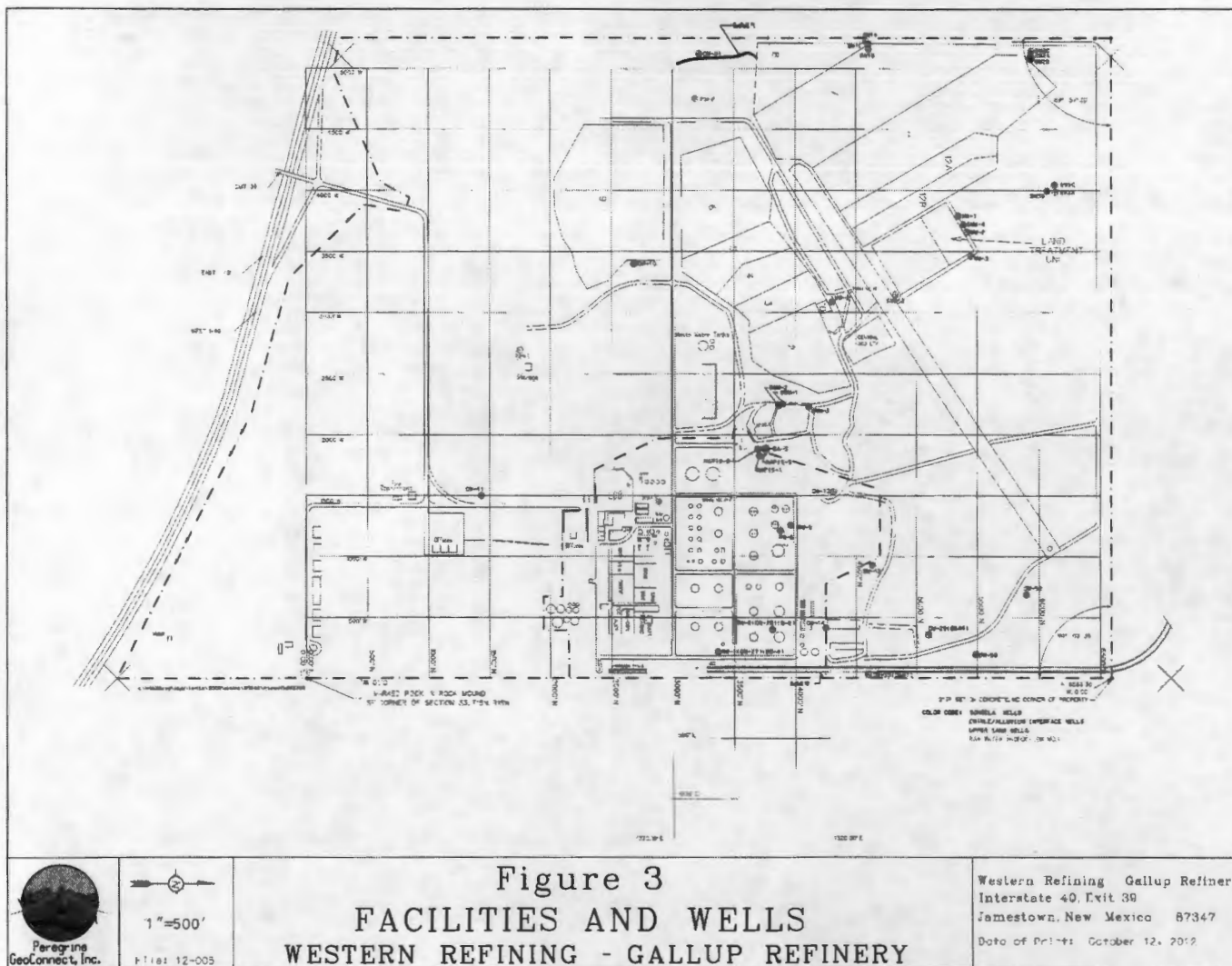


GW - 032

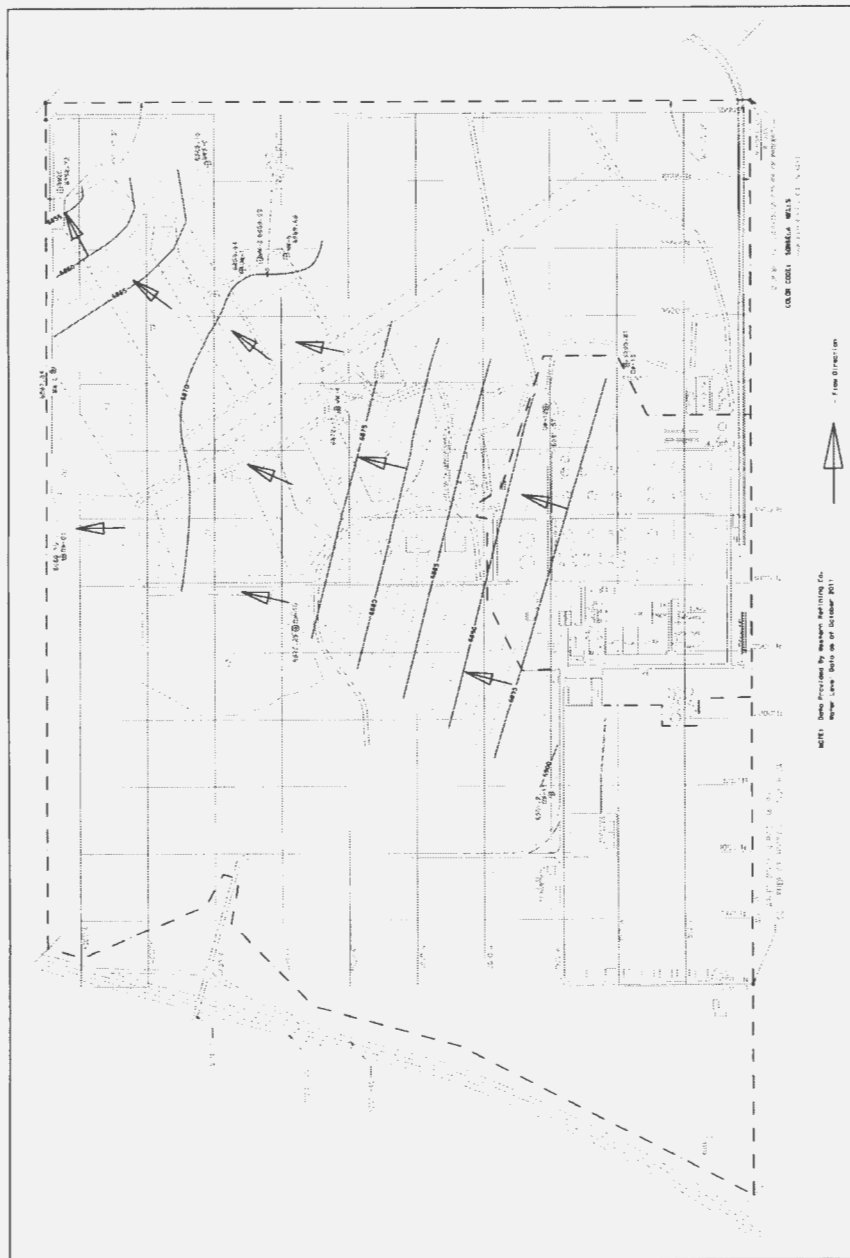
ANNUAL  
MONITORING  
REPORT

August 2009









**Figure 5**  
**Sonseles Water**  
**Piezometric Surface (October 2011)**

Scale: 1" = 500'  
 File 12-005

Prepared by:  
 GeoConnect, Inc.

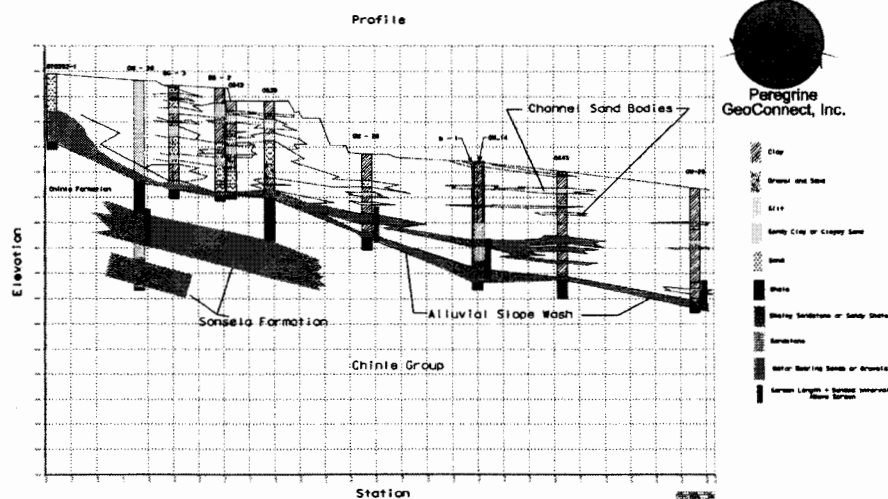
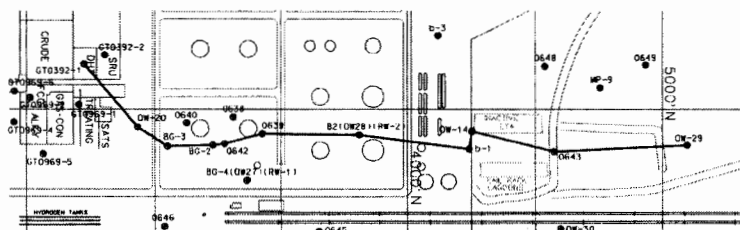
Wells: Refinery - Caltex Refinery  
 Interstate 45 Exit 36  
 Houston, Texas  
 Date of Print: October 18, 2012

GW-032

# ANNUAL GW MONITORING REPORT (1)

2010

## Typical South-North Profile Western Refining - Gallup Refinery

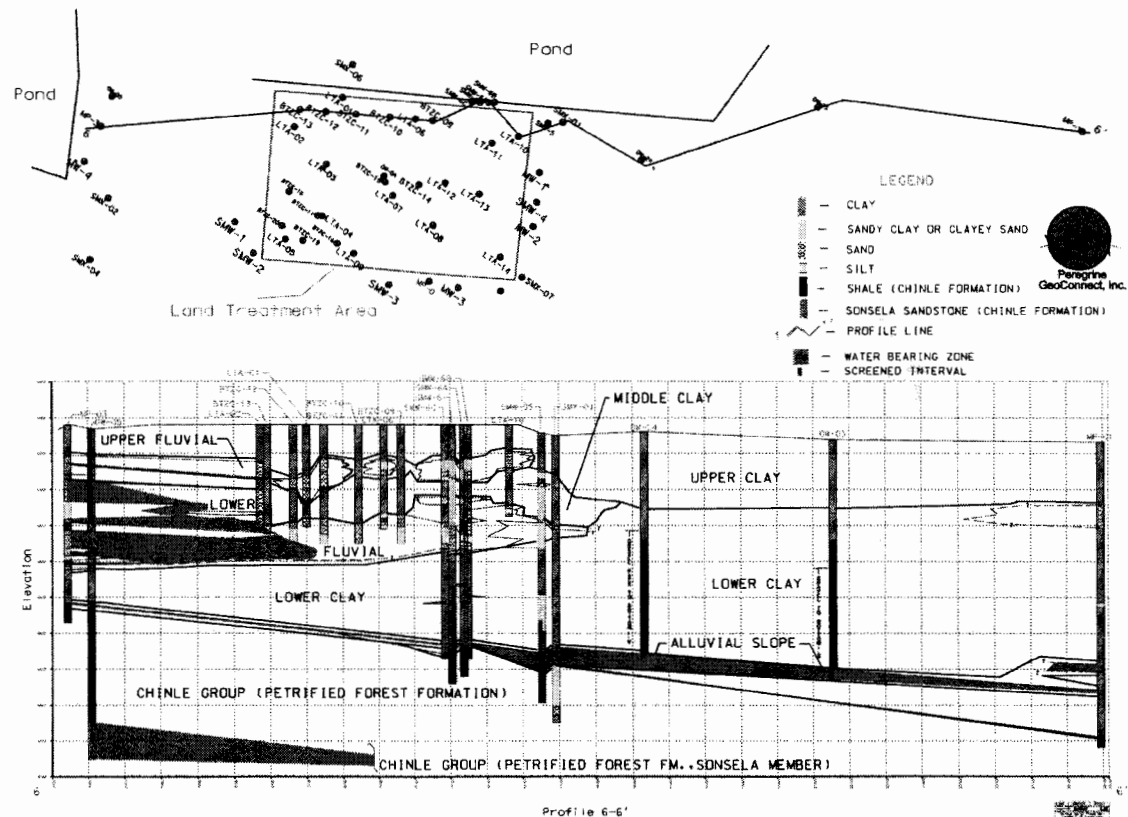


# GW-032

## ANNUAL GW MONITORING REPORT (1)

2010

### South - North Section Westerly Plant Area

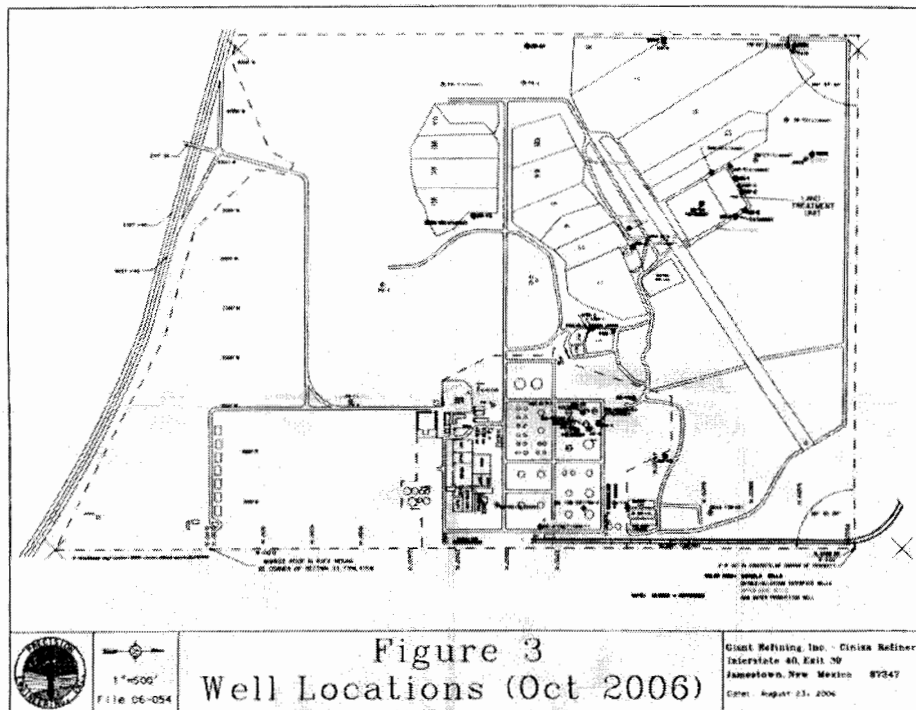


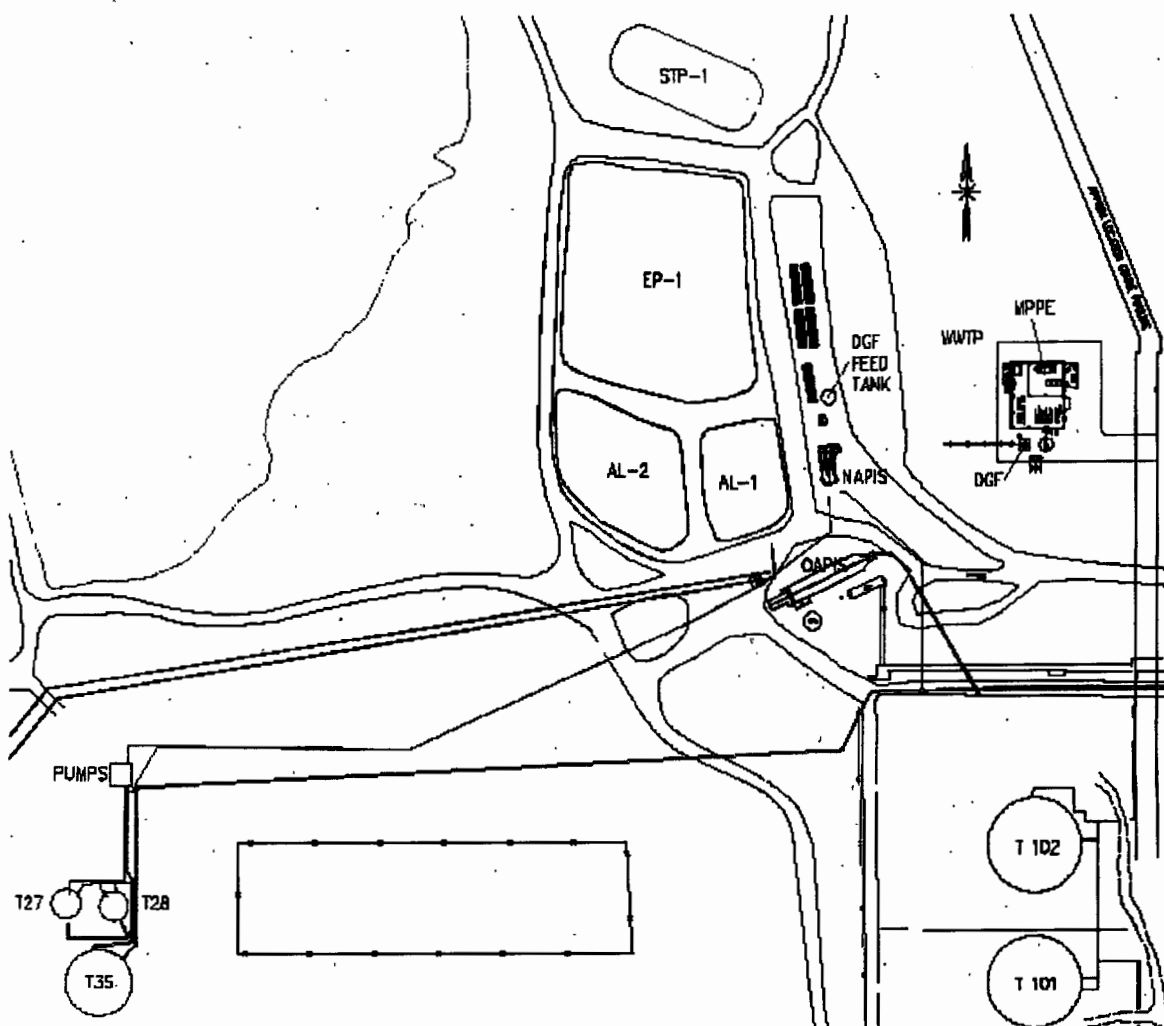
GW - 032

REPORTS

Year(s)

Revised 2006  
Annual GW Report  
3/13/2008





**Figure 1 - Site Plot Plan**

August 27, 2013

***Via Email and Certified Mail, Return Receipt Requested (#70060810000136230168)***

Mr. John E. Kieling  
Chief, Hazardous Waste Bureau  
Environmental Health Division  
New Mexico Environment Department  
2905 Rodeo Park Drive East, Building 2  
Santa Fe, NM 87505-6303

**Re: Hydrocarbon Release Notification  
Western Refining Company Southwest, Inc. ("Western")  
Gallup Refinery  
EPA ID #NMD000333211**

Dear Mr. Kieling:

On July 31, 2013, you sent a letter to Western's Gallup Refinery responding to Western's July 16, 2013 reply to the Hazardous Waste Bureau's ("Bureau") July 8, 2013 letter concerning Western's June 27, 2013 oral notification of a hydrocarbon release at the Refinery. Subsequently, without addressing the substantive positions asserted in the Bureau's July 31<sup>st</sup> letter, Western requested, and the Bureau granted, postponements of the dates for the deliverables sought in the Bureau's July 8<sup>th</sup> letter. Western, however, has significant concerns about and disagreements with many of the Bureau's jurisdictional assertions in its July 31<sup>st</sup> letter. As we believe that clear communication on these issues is important, below we provide Western's responses to the positions asserted by the Bureau in its July 31<sup>st</sup> letter.

1. On page 1 of your letter, in response to Western's statement that it provided notice of the hydrocarbon release without admission concerning the applicability of the RCRA permit, you state that Western "does not have the authority [or] the ability to choose which regulations to follow." Contrary to your assertion, Western is not choosing which regulations to follow. As discussed in more detail below, oversight of the investigation and remedial activities for this incident belongs exclusively to the Oil Conservation Division ("OCD") of the Energy, Minerals and Natural Resources Department, not the Bureau, pursuant to applicable law and rules. The spilled material cannot be presumed to be a release of a hazardous waste or hazardous waste constituents.

John E. Kielling  
Chief, Hazardous Waste Bureau  
August 27, 2013

2. On page 2 of the letter, you incorrectly assert that spilled gasoline is a hazardous waste. EPA currently takes the position that media contaminated by releases of products are not solid wastes. Under EPA's policy, if a petroleum product is spilled into soil then the soil is contaminated media and not a solid waste.<sup>1</sup> Therefore, the media cannot be a hazardous waste.

Additionally, the cases cited on page 2 are not controlling in this context. The holdings in those cases *are limited to interpretation of the scope of RCRA citizen suits in connection with releases of petroleum*. They do not make any holding relative to the scope of EPA's RCRA corrective action jurisdiction.

These statutory private citizen suit actions also were decided long ago (i.e. the early to mid-1990s). There has since been significant refinement in EPA's regulatory position on the nature of releases of materials into soil and groundwater especially relative to EPA's "contained-in policy."<sup>2</sup>

All of the decisions cited by the Bureau on page 2 held that petroleum products released were "solid waste." There was no holding that the petroleum is a hazardous waste. (The *Dydio* court was less clear on this point in its holding that leaking petroleum was "a solid or hazardous waste." However, the opinion offers no support for the position that petroleum product would be hazardous waste when spilled.) Even if, *arguendo*, leaked or spilled petroleum can be deemed solid waste, OCD should have jurisdiction over corrective action because the waste is not deemed hazardous. Under the Oil and Gas Act, NMSA 1978, § 70-2-12.B(22) (2004), OCD has authority "to regulate the disposition of nondomestic wastes from . . . the refinement of crude oil to protect public health and the environment." See NMSA 1978, § 74-9-3.N(1) (1990) excluding "non-domestic wastes associated with the . . . refinement of crude oil" from the definition of "solid waste."

It is interesting to note that the Bureau, on the one hand, seeks to advance its position that spilled petroleum products are solid waste under NMED jurisdiction, but then, on the other, attempts to further buttress its jurisdiction by suggesting that such products also contain "hazardous constituents." Does NMED mean to say that spilled materials do not even need to be wastes for NMED to have corrective action jurisdiction? Where is the support for that under the Hazardous Waste Act?

---

<sup>1</sup> See: [http://www.epa.gov/wastes/hazard/correctiveaction/pdfs/workshop/mrw\\_slides.pdf](http://www.epa.gov/wastes/hazard/correctiveaction/pdfs/workshop/mrw_slides.pdf) at 6.

<sup>2</sup> See generally: [http://www.epa.gov/wastes/hazard/correctiveaction/pdfs/workshop/mrw\\_slides.pdf](http://www.epa.gov/wastes/hazard/correctiveaction/pdfs/workshop/mrw_slides.pdf), a module in EPA's "Corrective Action Workshop" website at: <http://www.epa.gov/wastes/hazard/correctiveaction/workshop/#General>



John E. Kielsing  
Chief, Hazardous Waste Bureau  
August 27, 2013

Furthermore, the cited cases recognize that, under RCRA, UST releases are governmentally- regulated under a separate program (i.e. Subchapter IX) than the one for hazardous wastes (Subchapter III). Indeed, the court in *Agric. Excess and Surplus Ins. Co. v. A.B.D. Tank and Pump Co.*, 878 F. Supp. 1091, 1096, states that “petroleum leakage from underground storage tanks should be regulated under Subchapter IX [i.e. the UST program], not Subchapter III [the hazardous waste program]...” So, even at the federal level, there is authority for regulation of, and corrective action for, UST releases outside the hazardous waste program. Why should this be different for above-ground releases in New Mexico where OCD has express jurisdiction over such releases?

3. The Bureau appears to take the position that every spill or release is either a “solid waste management unit” or an “area of concern.” As a threshold matter, definitions of these terms in Section I.D. of the Hazardous Waste Facility Permit (“Permit”) render those terms virtually indistinguishable. An AOC is an area “that may have a release of hazardous waste or hazardous constituents, which is not from a solid waste management unit and is suspected or determined by the Secretary to pose a threat to human health or the environment.” However, the term “solid waste management unit” includes places where there have been “one time and accidental events that were not remediated.” If such releases *are* remediated, then, by definition, they would not be “solid waste management units.” Moreover, if they are remediated pursuant to the existing OCD regulatory program, then what basis would there be for such areas to even be “areas of concern” on the basis of a threat to human health or the environment? Since such areas are being remediated pursuant to OCD authority, there is no reason to cover them with duplicative NMED permit requirements.

4. Just because Western described the hydrocarbon release area with reference to the location of Tanks 101 and 102 does not mean that NMED may presume that there has been a release of a listed hazardous waste. RCRA policy at the federal level makes this point quite clearly.<sup>3</sup>

Finally, we note that Western is not in violation of its Permit, as previously explained. However, Western respectfully requests the Bureau to withhold judgment on this issue pending a meaningful dialogue among NMED, OCD, and Western. Western has made a good faith effort to promote such a dialogue by scheduling a meeting with the Secretaries of NMED and EMNRD on August 30, 2013.

---

<sup>3</sup> See <http://www.epa.gov/osw/hazard/correctiveaction/training/vision/mod9.pdf> at 10.



John E. Kieling  
Chief, Hazardous Waste Bureau  
August 27, 2013

We would be glad to discuss these issues with you and your staff at your request.  
Please note Western reserves all applicable rights and defenses relevant to this matter.

Sincerely,



Leslie Ann Allen  
Senior Vice-President  
Environmental and Regulatory Affairs

cc: T. Blaine, P.E., NMED EHD *(via e-mail)*  
D. Cobrain, NMED HWB *(via e-mail)*  
N. Dhawan, NMED HWB *(via e-mail)*  
A. Hains, Western *(via e-mail)*  
L. Gould, Western *(via e-mail)*  
E. Riege, Western *(via e-mail)*  
J. Bailey, EMNRD OCD *(via e-mail)*  
C. Chavez, EMNRD OCD *(via e-mail)*  
G. von Gonten, EMNRD OCD *(via e-mail)*



SUSANA MARTINEZ  
Governor

JOHN A. SANCHEZ  
Lieutenant Governor

**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](http://www.nmenv.state.nm.us)**



RYAN FLYNN  
Cabinet Secretary-Designate

BUTCH TONGATE  
Deputy Secretary

TOM BLAINE, P.E.  
Director  
Environmental Health Division

**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

August 14, 2013

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

**RE: HYDROCARBON RELEASE NOTIFICATION  
WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY  
EPA ID # NMD000333211  
HWB-WRG-MISC**

Dear Mr. Riege:

The New Mexico Environment Department (NMED) has received Western Refining Southwest, Inc.'s (Western Refining) letter dated August 6, 2013, regarding NMED's requirement to submit a release assessment report and investigation report documenting the hydrocarbon release discovered on June 26, 2013.

Western Refining's issues over jurisdiction do not relieve Western Refining of its duty to comply the Hazardous Waste Permit (Permit) issued in 2000. The Permit requires Western Refining to submit documentation regarding the release as noted in NMED's previous letters; Western Refining must comply with the Permit. Noncompliance with the Permit requirements constitutes a violation of the Permit. Nevertheless NMED takes enforcement action at its discretion.

NMED is not requiring work in addition to the work that is already being performed, only requiring submittal of reports. However, since the cleanup is being conducted at risk, NMED may require additional information depending on the results of the cleanup activities.

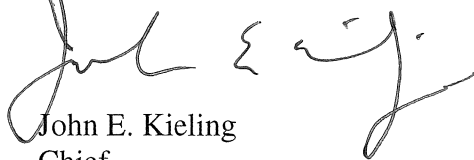
Ed Riege  
Gallup Refinery  
August 14, 2013  
Page 2

During a refinery tour on July 30, 2013, in response to questions from NMED, Western Refining provided limited information related to the ongoing cleanup activities with NMED; however, no other information has been shared with NMED other than the preliminary C-141 form.

In an effort to work with Western Refining, NMED agrees to postpone the submittal dates of the required documents for 60 days. The investigation report is due no later than **October 21, 2013** and the release assessment report must be submitted by **November 18, 2013**.

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

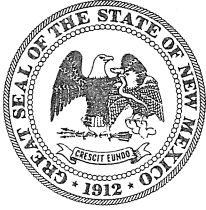
Sincerely,

A handwritten signature in black ink, appearing to read 'John E. Kieling', with a stylized flourish at the end.

John E. Kieling  
Chief  
Hazardous Waste Bureau

cc: T. Blaine, NMED EHD  
D. Cobrain, NMED HWB  
N. Dhawan, NMED HWB  
K. Van Horn, NMED HWB  
C. deSaillen, NMED OGC  
A. Haines, WRG  
A. Allen, WRG  
C. Chavez, OCD  
G. von Gonten, OCD

File: Reading File and WRG 2013 File  
HWB-WRG-MISC



SUSANA MARTINEZ  
Governor

JOHN A. SANCHEZ  
Lieutenant Governor

NEW MEXICO  
ENVIRONMENT DEPARTMENT

*Hazardous Waste Bureau*

2905 Rodeo Park Drive East, Building 1  
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RYAN FLYNN  
Cabinet Secretary-Designate

BUTCH TONGATE  
Deputy Secretary

TOM BLAINE, P.E.  
Director  
Environmental Health Division

**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

July 31, 2013

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

**RE: HYDROCARBON RELEASE NOTIFICATION  
WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY  
EPA ID # NMD000333211  
HWB-WRG-MISC**

Dear Mr. Riege:

The New Mexico Environment Department (NMED) has received Western Refining Southwest, Inc.'s (Western Refining) letter dated July 16, 2013, regarding a hydrocarbon release notification at the Gallup Refinery. The letter contends that the "RCRA permit" is not applicable to the hydrocarbon release, and makes several arguments to support that contention. By this letter, NMED explains that the Hazardous Waste Facility Permit (Permit), dated August 2000, issued by NMED for the Western Refining Gallup Refinery is applicable to the release, and responds to each of the arguments that Western Refining makes to the contrary.

Western Refining states in the July 16 letter that "without making any admissions concerning the potential applicability of the RCRA Permit to this release, Western sent a copy of the C-141 to the Bureau on July 11, 2013 concurrent with submission of the form to OCD [the Oil Conservation Division]. This hydrocarbon release is regulated by OCD under the Oil and Gas Act, and therefore, consistent with past practice, please be advised that Western will work with OCD to assess and respond to the hydrocarbon release." The Permittee does not have the authority of the ability to choose which regulations to follow. Aside from its obligations under

Ed Riege  
Gallup Refinery  
July 31, 2013  
Page 2

the New Mexico Oil and Gas Act, Western Refining must comply with its obligations under the New Mexico Hazardous Waste Act, and in particular the Permit issued thereunder. Section II.F.2 of the Permit requires Western Refining to report NMED, within 24 hours of becoming aware of the circumstances, "information concerning the release or discharge of any hazardous waste or hazardous constituent that could threaten human health or the environment at and outside the facility." Section II.F.2 of the Permit requires a subsequent written notice within 15 days. This permit condition is based on the federal hazardous waste regulations at 40 CFR 270.30(l)(6), which has been incorporated into the New Mexico Hazardous Waste Management Regulations, 20.4.1.900 NMAC. It is mandatory. To avoid unnecessary paperwork, NMED has accepted receipt of the information on C-141 forms submitted to OCD to fulfill the release reporting requirements of the Permit, and it will continue to do so. However, it is important for Western Refining to understand that the permit imposes a reporting requirement that is separate and independent from any OCD requirements.

Western Refining argues, first, that the Permit is not applicable because, "based on currently available information, the release is an on-site release of fresh, refined gasoline. There is no documented release of hazardous waste or a hazardous constituent derived from hazardous waste, historical or otherwise, to which RCRA corrective action requirements are intended to apply. As you know, Western believes that this type of release, and any cleanup, is subject to an ongoing regulatory program under the jurisdiction of the OCD." Gasoline is an ignitable hazardous waste (D001) under the regulations. 40 CFR 261.21. It may also be toxic hazardous waste for benzene (D018). 40 CFR 261.24. Moreover, gasoline is comprised of hundreds of compounds, some of which are hazardous constituents. The term "hazardous constituent" is defined in Section I.D of the Permit to include any constituent identified in 40 CFR Part 261, Appendix VII and Appendix VIII and any constituent identified in 40 CFR Part 264 Appendix IX. Gasoline contains multiple hazardous constituents, including benzene, toluene, ethylbenzene, xylenes, polycyclic aromatic hydrocarbons, and naphthalene. Moreover, once the gasoline was released into the environment, it became a "waste" for purposes of corrective action under the HWA. *See Agric. Excess & Surplus Ins. Co. v. A.B.D. Tank & Pump Co.*, 878 F. Supp. 1091, 1095 (N.D. Ill. 1995) ("once gasoline leaked into the soil, the gasoline itself was no longer a useful material and instead became abandoned or discarded material"); *Craig Lyle Ltd. P'ship v. Land O'Lakes, Inc.*, 877 F. Supp. 476, 482 (D. Minn. 1995) ("spilt or leaked petroleum from commercial operations satisfies RCRA's definition of 'solid waste'"); *Zands v. Nelson*, 779 F. Supp. 1254, 1262 (S.D. Cal. 1991) ("gasoline is no longer a useful product after it leaks into, and contaminates, the soil"; rather, "the gasoline has been abandoned via the leakage . . . into the soil"); *accord Dydio v. Hesston Corp.*, 887 F. Supp. 1037, 1048 (N.D. Ill. 1995) (following *Zands*).

Western Refining argues that "even if the release was a hazardous waste, Section IV.B.2 of the RCRA permit is inapplicable. As quoted in your letter, Section IV.B.2 requires written notification within 15 days of discovery of any "new" SWMU or AOC. However, as we think

you will agree, it is not the case that every spill creates a new SMWU or AOC.” NMED disagrees. NMED has determined that the release is at least potentially a SWMU or AOC. The C-141 report submitted July 11, 2013 contained additional details regarding the release including the fact that 400 barrels had been recovered from the site and water and non-aqueous phase liquid continued to be recovered from the site. The presence of 400 barrels (or more) of gasoline in the soil indicates that the leak went undetected for some time. While Western Refining has been diligent in performing corrective action once the leak was discovered, the amount of petroleum product present in the environment is as yet unquantified and indicates a systematic and routine release to the environment, which is part of the definition for a SWMU. Furthermore, the area may be determined to be an area of concern (AOC) which is defined in section I.D of the Permit as “any area that may have a release of hazardous waste or hazardous constituents which is not from a solid waste management unit and is suspected or determined by the Secretary to pose a threat to human health or the environment.” An area of concern may include releases resulting from one time and accidental events as well. Therefore this release may be defined as an AOC or a SWMU. Groundwater in the area of the release moves toward the north east (toward the New API Separator) and may be contributing to existing groundwater contamination. Further investigation of this release is warranted.

Western Refining also argues that there is no information to support, stating, “[f]inally, we note that your letter appears to make the assumption that Tanks 101 and 102 are the source of the release. We have no information that would suggest this is correct.” Western Refining originally described the release to NMED by using Tanks 101 and 102 as a reference point for the location of the release. Unless or until another source is identified, the assumption that the tanks may be a source is not unwarranted. Western Refining also stated “[i]n addition, please note that we disagree with the assertion that any generated materials would be listed as K169 hazardous wastes. The K169 listing is only for crude oil tank *sediment* from petroleum refining operations. Even if Tanks 101 and 102 were the source of the release, the release would be expected to be crude oil itself, not the sediment formed by gravity in those tanks.” Since the tanks are above ground and Western Refining has not reported observed leaks from the sides of the tanks, such leaks would most likely be from the bottom of the tanks, thus the sediment and entrained liquids associated with it, would leak before the crude oil. Regardless whether the release originated from these tanks, the release is subject to HWA corrective action authority for the reasons explained above. Western Refining must manage any gasoline-tainted soil removed from the site as hazardous waste unless and until analytical results confirm that the soil is not toxic hazardous waste for benzene (D0018) or listed hazardous waste based on the source of the release.

Section IV.B.2.a of the Permit requires Western Refining to submit to NMED, within 15 days after discovery of a suspected new SWMU or AOC, a notification containing all available information on the nature of the release. By letter dated July 8, 2013, NMED requested that Western Refining submit such a notification (report) by July 19, 2013. Western Refining has not

Ed Riege  
Gallup Refinery  
July 31, 2013  
Page 4

done so. Western Refining's failure to submit the notification in accordance with section IV.B.2.a of the Permit is a continuing violation of the Permit. Western Refining must submit to NMED a written notification (report) describing all investigation and clean-up actions conducted to date and any analytical results collected, in accordance with Permit Section IV.B.2.a, by no later than **August 19, 2013**. Western Refining must also submit to NMED a SWMU assessment report in accordance with Permit Section IV.B.2.b by **September 16, 2013**.

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

Sincerely,

A handwritten signature in dark ink, appearing to read "John E. Kieling" with a stylized flourish at the end.

John E. Kieling  
Chief  
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB  
N. Dhawan, NMED HWB  
C. deSaillen, NMED OGC  
A. Haines, WRG  
A. Allen, WRG  
C. Chavez, OCD  
G. von Gonten, OCD

File: Reading File and WRG 2013 File  
HWB-WRG-MISC

July 16, 2013

***Via Email and Certified Mail, Return Receipt Requested***

Mr. John E. Kieling  
Chief, Hazardous Waste Bureau  
New Mexico Environment Department  
2905 Rodeo Park Drive East, Building 2  
Santa Fe, NM 87505-6303

**Re: Hydrocarbon Release Notification (June 26, 2013)  
Western Refining Company Southwest, Inc. ("Western")  
Gallup Refinery  
EPA ID #NMD000333211**

Dear Mr. Kieling:

On July 8, 2013, you sent a letter concerning oral notification of a hydrocarbon release provided by Western to the Hazardous Waste Bureau ("Bureau") on June 27, 2013. Your letter noted that Western should satisfy certain requirements under Section II.F.2 of Western's August 2000 RCRA Permit by providing a copy of the Release Notification and Corrective Action Form C-141 submitted to the Oil Conservation Division ("OCD") of the New Mexico Energy, Minerals and Natural Resources Department. Accordingly, without making any admissions concerning the potential applicability of the RCRA Permit to this release, Western sent a copy of the C-141 to the Bureau on July 11, 2013 concurrent with submission of the form to OCD. This hydrocarbon release is regulated by the OCD under the Oil and Gas Act, and therefore, consistent with past practice, please be advised that Western will work with OCD to assess and respond to the hydrocarbon release.

Your letter also cited to Section IV.B.2 of the Refinery's RCRA Permit and instructed Western to take certain actions under that provision including submission of a SWMU Assessment Report. However, Section IV.B.2 of the RCRA Permit is not applicable to the subject hydrocarbon release for the following reasons:

First, based on currently available information, the release is an on-site release of fresh, refined gasoline. There is no documented release of a hazardous waste or a hazardous constituent derived from a hazardous waste, historical or otherwise, to which



Mr. John E. Kieling  
July 16, 2013  
Page 2

RCRA corrective action requirements are intended to apply. As you know, Western believes that this type of release, and any cleanup, is subject to an ongoing regulatory program under the jurisdiction of the OCD.

Second, even if the release was a hazardous waste, Section VI.B.2 of the RCRA permit is inapplicable. As quoted in your letter, Section IV.B.2 requires written notification within 15 days of discovery of any suspected "new" SWMU or AOC. However, as we think you will agree, it is not the case that every spill creates a new SWMU or AOC. This release is not currently suspected to be a new SWMU or AOC subject to Section IV.B.2, including without limitation, the SWMU Assessment Report requirements.

Finally, we note that your letter appears to make the assumption that Tanks 101 and 102 are the source of the release. We have no information that would suggest this is correct. In addition, please note that we disagree with the assertion that any generated materials would be listed K169 hazardous wastes. The K169 listing is only for crude oil tank *sediment* from petroleum refining operations. Even if Tanks 101 and 102 were the source of the release, the release would be expected to be crude oil itself, not the sediment formed by gravity in those tanks. Any soils removed from the site, of course, will be characterized and managed according to NMED hazardous waste management regulations.

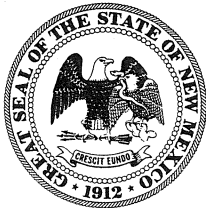
Please note Western reserves all applicable rights and defenses relevant to this matter, including supplementation or modification of the preceding information as appropriate. If you have any questions, please contact me. In addition, we stand ready to meet with you and your staff should the Bureau have any concerns regarding the preceding response.

Sincerely,



Ed Riege  
Environmental Manager

cc: T. Blaine, P.E., NMED HWB  
D. Cobrain, NMED HWB  
N. Dhawan, NMED HWB  
A. Allen, WNR  
A. Hains, WNR  
C. Chavez, OCD  
G. von Gonten, OCD



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Lieutenant Governor

**NEW MEXICO  
ENVIRONMENT DEPARTMENT**

***Hazardous Waste Bureau***

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RYAN FLYNN  
Cabinet Secretary-Designate

BUTCH TONGATE  
Deputy Secretary

TOM BLAINE, P.E.  
Director  
Environmental Health Division

**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

July 8, 2013

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

**RE: RELEASE DISCOVERY NEAR TANKS 101 AND 102  
WESTERN REFINING SOUTHWEST INC., GALLUP REFINERY  
EPA ID # NMD000333211  
HWB-WRG-MISC**

Dear Mr. Riege:

The New Mexico Environment Department (NMED) received a telephone notification from Western Refining Southwest, Inc. (the Permittee) on June 27, 2013 regarding the discovery of hydrocarbons in soil about 150 yards to the west of Tanks 101 and 102 on June 26, 2013. Tanks 101 and 102 are single-walled crude oil tanks with secondary containment consisting of soil and gravel. Upon discovery, a vacuum truck was deployed to the site to remove hydrocarbons from the soil and at the time of notification, approximately 5 to 10 barrels (bbls) had been recovered. The Permittee noted that a C141 form will also be submitted as required by the Oil Conservation Division (OCD).

The Permittee's current RCRA Permit (August 2000), Section II.F.2 (Twenty-four Hour Reporting), requires that:

“a. The Permittee shall report orally to the [Department] any noncompliance that may endanger human health or the environment. Such report shall be made

within 24 hours from the time the Permittee becomes aware of the circumstances and shall include:

- i. Information concerning the release of any hazardous waste or hazardous constituents that may endanger public drinking supplies;
- ii. Information concerning the release or discharge of any hazardous waste or hazardous constituents, or of a fire or explosion at the facility, which could threaten the environment or human health at and outside the facility [20.4.1.900 NMAC (incorporating 40 CFR §270.30(l)(6)(i))].

b. The description of the occurrence and its cause shall include:

- i. Name, address, and telephone number of the Permittee and the Facility;
- ii. Date, time, and type of incident;
- iii. Name and quantity of material involved;
- iv. The extent of injuries, if any;
- v. And assessment of actual or potential hazards to the environment and human health at and outside the Facility; and
- vi. Estimated quantity and disposition of recovered material that resulted from the incident. [20.4.1.900 NMAC (incorporating 40 CFR §270.30(l)(6)(ii))]

c. The Permittee shall also submit a written notice to the [Department] within five calendar days of the time the Permittee becomes aware of the circumstances under Permit Condition II.F.2.a above. The written notice shall contain the following information:

- i. A description of the noncompliance and its cause;
- ii. The period(s) of noncompliance (including exact dates and times), and, if the noncompliance has not been corrected, the anticipated time it is expected to be corrected; and
- iii. Steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance or imminent hazard.

The [Department] may waive the five-day written notice requirement in favor of a written report within 15 days. [20 4.1.900 NMAC (incorporating 40 CFR §270.30(l)(6)(iii))]"

In the past, NMED has accepted phone notifications from the Permittee and the C141 reporting form required by the OCD for spill reporting, because the C141 form generally includes the

Ed Riege  
Gallup Refinery  
July 8, 2013  
Page 3

information required by RCRA Permit Section II.F.2. In order to keep the release notification process streamlined, the Permittee may continue to notify NMED in this manner.

However, under the RCRA Permit, the Permittee is also required to determine the source of the hydrocarbons discovered in the soil. RCRA Permit Section IV.B.2 (Notification and Assessment Requirements for Existing and Newly Identified SWMUs and AOCs) requires that the Permittee "notify the [Department] in writing within fifteen (15) calendar days of discovery of any suspected new SWMU or AOC. The notification shall include, at minimum, the location of the SWMU or AOC and all available information pertaining to the nature of the release (e.g., media affected, hazardous constituents released, magnitude of release, etc.)." RCRA Permit Section IV.B.2.b goes on to state that "[t]he Permittee shall prepare and submit to the [Department], within ninety (90) calendar days of notification, a SWMU Assessment Report (SAR) for each SWMU or AOC identified under Permit Section IV.B.2 above." The RCRA Permit outlines the information that must be included in the SAR. Permit Section IV.B.2.c then states that "[b]ased on the results of the SAR, the [Department] will determine the need for further investigations at the SWMUs or AOCs covered in the SAR. The [Department] will notify the Permittee in writing of the final determination of the status of the suspected SWMU or AOC. If the [Department] determines that further investigation is needed, the Permittee shall submit a Work Plan for such investigation. If the [Department] determines that further investigation of a SWMU or AOC is required, the Permit will be modified in accordance with 20 4.1.901 NMAC and 40 CFR 270 Subpart D, incorporated at 20 40.1.900 NMAC." As the Permittee is aware, Tanks 101 and 102 are currently listed as an AOC in the Draft RCRA Permit. The Permittee is still required to submit a SAR.

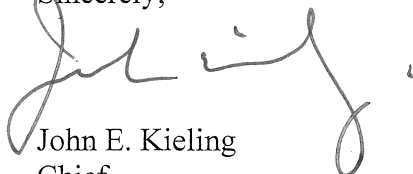
The Permittee must treat any soil removed from the site as hazardous waste until such time as analytical results are available. If the source of the release is determined to be from a unit at the facility that does not contain hazardous waste, the Permittee may treat the soil according to standard practices. If the source of hydrocarbons in the soil are Tanks 101 and 102, any generated waste must be managed as listed hazardous waste (K169).

The Permittee must follow the RCRA Permit as stated above and submit a written report describing the clean-up actions and any analytical results collected to NMED no later than **July 19, 2013**.

Ed Riege  
Gallup Refinery  
July 8, 2013  
Page 4

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

Sincerely,

A handwritten signature in dark ink, appearing to read 'John E. Kielling', with a large, stylized loop at the end.

John E. Kielling  
Chief  
Hazardous Waste Bureau

cc: T. Blaine, P.E., NMED HWB  
D. Cobrain, NMED HWB  
N. Dhawan, NMED HWB  
A. Haines, WRG  
A. Allen, WRG  
C. Chavez, OCD  
G. von Gonten, OCD

File: Reading File and WRG 2013 File  
HWB-WRG-MISC

## Chavez, Carl J, EMNRD

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Tuesday, October 09, 2012 3:28 PM  
**To:** 'Larsen, Thurman'; Powell, Brandon, EMNRD; VanHorn, Kristen, NMENV  
**Cc:** Riege, Ed  
**Subject:** RE: KOH SPILL from 9/12/2012 (FINAL UPDATE) REPORT

Beck:

Please submit the analytical data results and signed C-138 Form as confirmation of the disposal of contaminated soils. The OCD also requests photos of the excavation with dimensions and estimated volume of soils removed.

Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Department  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Drive, Santa Fe, New Mexico 87505  
Office: (505) 476-3490  
E-mail: [CarlJ.Chavez@State.NM.US](mailto:CarlJ.Chavez@State.NM.US)  
Website: <http://www.emnrd.state.nm.us/ocd/>

“Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?” To see how, please go to: “Pollution Prevention & Waste Minimization” at <http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>

---

**From:** Larsen, Thurman [<mailto:Thurman.Larsen@wnr.com>]  
**Sent:** Sunday, October 07, 2012 7:43 PM  
**To:** Chavez, Carl J, EMNRD; Powell, Brandon, EMNRD; VanHorn, Kristen, NMENV  
**Cc:** Riege, Ed  
**Subject:** KOH SPILL from 9/12/2012 (FINAL UPDATE) REPORT

Carl and Kristen,

The above is a final update for the KOH spill that occurred on 9/12/2012. The affected area has been cleaned and the analysis proved to be non-hazardous.

Thanks,

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in  
accordance with 19.15.29 NMAC.

**Release Notification and Corrective Action**  
**(UPDATE on 10/07/2012 - CLEANUP ACTIONS COMPLETED)**

**OPERATOR** ☐ Initial Report ☒ Final Report

Name of Company: WESTERN REFINING	Contact: Beck Larsen
Address: I-40 / EXIT 39, JAMESTOWN, NM 87347	Telephone No. (505) 722-0258
Facility Name: WESTERN RENING (GALLUP REFINERY)	Facility Type: Petroleum Refinery

Surface Owner	Mineral Owner	API No.
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**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	28	15 N	15 W					MCKINLEY

Latitude 35° 029' 024" Longitude 108° 024' 024"

**NATURE OF RELEASE**

Type of Release: Potassium Hydroxide (KOH)(20% Diluted Solution)	Volume of Release: ~28 gall KOH Solution (<1 bbl)(56 lbs)	Volume Recovered: Unknown
Source of Release: Hose used for washing KOH from KOH Tower	Date and Hour of Occurrence 9/12/2012 @ 1500 hrs	Date and Hour of Discovery 9/12/2012
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom? N/A	
By Whom? N/A	Date and Hour:	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully. \* N/A

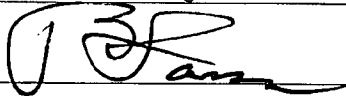
Describe Cause of Problem and Remedial Action Taken. \* Area was cleaned up using a vacuum truck to remove liquid. Soil was removed.

Describe Area Affected and Cleanup Action Taken. \* Soil sample was submitted for analysis on 9/14/2012. The analytical results proved to be non-hazardous. All Cleanup Operations were deemed complete.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

**OIL CONSERVATION DIVISION**

Signature:



Printed Name: Beck Larsen:

Approved by Environmental Specialist:

Title: Environmental Engineer

Approval Date:

Expiration Date:

E-mail Address: Thurman.larsen@wnr.com

Conditions of Approval:

Attached ☐

Date: 10/07/2012

Phone: (505) 722-0258

\* Attach Additional Sheets If Necessary

**Chavez, Carl J, EMNRD**

---

**From:** Johnson, Cheryl <Cheryl.Johnson@wnr.com>  
**Sent:** Sunday, October 07, 2012 3:22 PM  
**To:** Chavez, Carl J, EMNRD; VanHorn, Kristen, NMENV; Powell, Brandon, EMNRD  
**Subject:** C-141 Final 10-7-12 (Bz Stripper).pdf - Adobe Acrobat Standard  
**Attachments:** C-141 Final 10-7-12 (Bz Stripper).pdf

Good Afternoon:

Attached is our final C-141 report on the benzene stripper spill which occurred on 9-23-12.  
If you have any questions, please call or e-mail.

Thank you, cj

Cheryl Johnson  
Environmental Specialist

Western Refining - Gallup Refinery  
Route 3 Box 7  
Gallup, NM 87301  
505 722 0231 Direct  
505 722 0210 Fax  
505 722 3833 Main  
[cheryl.johnson@wnr.com](mailto:cheryl.johnson@wnr.com)



District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in  
accordance with 19.15.29 NMAC.

**Release Notification and Corrective Action**

**OPERATOR**

☐ Initial Report ☒ Final Report

Name of Company: Western Refining Southwest	Contact: Cheryl Johnson
Address: I-40 Exit 39, Jamestown, NM 87347	Telephone No. (505) 722-3833
Facility Name: Gallup Refinery	Facility Type: Oil Refinery

Surface Owner: Western Refining	Mineral Owner: Western Refining	API No.
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**LOCATION OF RELEASE**

Unit Letter	Section 23 & 33	Township 15N	Range 15W	Feet from the	North/South Line	Feet from the	East/West Line	County McKinley
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Latitude: 35°29'22" Longitude 108°25'24"

**NATURE OF RELEASE**

Type of Release: Spill	Volume of Release: < 80 BBL	Volume Recovered: 4000 gals
Source of Release: Benzene Strippers (Z-84-V5 & Z-84-V4)	Date and Hour of Occurrence: 9-23-12, 0400 hours	Date and Hour of Discovery 9-23-12, 0400 hours
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Carl Chavez, NMED OCD, District 3 Supervisor, Kristen Van Horn HWB	
By Whom? Cheryl Johnson and Ed Riege	Date and Hour: 9/23/12: 1330 hours	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*  
Not Applicable

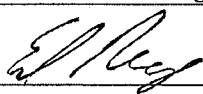
Describe Cause of Problem and Remedial Action Taken.\* On 9-23-12 at approximately 0400 hours, the benzene strippers were discovered to be overflowing through the fans and out the vent stack. Due to increased flow and foaming issues, the benzene strippers backed up causing the overflow through the fans and the vent stack. The overflow went into the concrete pad and overflowed onto the ground on all four sides of the concrete containment berm and also a portion into aeration lagoon 1. Operator decreased flow to the benzene strippers and maintenance department was called out immediately to begin vacuum and clean up procedures.

Describe Area Affected and Cleanup Action Taken.\* On the northeast side of the benzene stripper pad, waste water overflowed out of the concrete containment berm onto the ground in an area estimated to be 10 x 30 feet section was saturated and had standing water. On the west side of the concrete containment berm, an area approximately 10 x 10 feet section was also saturated with water. On the south side of the concrete berm there was also a small puddle of water. On the north side of the concrete containment berm, waste water overflowed onto the ground and flowed into aeration lagoon 1 (amount unknown). All 5 aerators were on-line in both lagoons 1 and lagoon 2. Upon discovery of the overflow maintenance department was called immediately to begin vacuuming up the overflow via vacuum truck in all areas affected. A trash pump was also in service pumping out the containment area. As of 1230 hours, all the standing water had been vacuumed up by the vacuum truck. On 9-24-12 soil samples were collected from spill site and the contaminated soil will be excavated and disposed of in accordance with applicable rules and regulations.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOC rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOC marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOC acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

**OIL CONSERVATION DIVISION**

Signature:



Printed Name: Ed Riege

Approved by Environmental Specialist:

Title: Environmental Manager

Approval Date:

Expiration Date:

E-mail Address: ed.riege@wnr.com

Conditions of Approval:

Attached ☐

Date: 10-7-12

Phone: 505-722-0217

\* Attach Additional Sheets If Necessary

**Chavez, Carl J, EMNRD**

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**From:** Johnson, Cheryl <Cheryl.Johnson@wnr.com>  
**Sent:** Sunday, September 23, 2012 1:58 PM  
**To:** Chavez, Carl J, EMNRD; Powell, Brandon, EMNRD; VanHorn, Kristen, NMENV  
**Cc:** Riege, Ed; Larsen, Thurman  
**Subject:** C-141 9-23-12 BZ Strip Overflow.pdf - Adobe Acrobat Standard  
**Attachments:** C-141 9-23-12 BZ Strip Overflow.pdf

Good afternoon:

Attached is our initial C-141 form for a spill that we had early this morning. If you require further information, please do not hesitate to contact our office.

Thank you,

Cj

Cheryl Johnson  
Environmental Specialist

Western Refining - Gallup Refinery  
Route 3 Box 7  
Gallup, NM 87301  
505 722 0231 Direct  
505 722 0210 Fax  
505 722 3833 Main  
[cheryl.johnson@wnr.com](mailto:cheryl.johnson@wnr.com)

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in  
accordance with 19.15.29 NMAC.

### Release Notification and Corrective Action

#### OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Western Refining Southwest	Contact: Cheryl Johnson	
Address: I-40 Exit 39, Jamestown, NM 87347	Telephone No. (505) 722-3833	
Facility Name: Gallup Refinery	Facility Type: Oil Refinery	
Surface Owner: Western Refining Southwest	Mineral Owner:	API No.

#### LOCATION OF RELEASE

Unit Letter	Section 23 & 33	Township 15N	Range 15W	Feet from the	North/South Line	Feet from the	East/West Line	County McKinley
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Latitude: 35°29'22" Longitude 108°25'24"

#### NATURE OF RELEASE

Type of Release: spill	Volume of Release: 100 bbl estimated	Volume Recovered: 95 bbl
Source of Release: Benzene Strippers (Z-84-V5 & Z-84-V4)	Date and Hour of Occurrence: 9-23-12, 0400 hours	Date and Hour of Discovery: 9-23-12, 0400 hours
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Carl Chavez, NMED OCD, District 3 Supervisor, Kristen Van Horn HWB	
By Whom? Cheryl Johnson and Ed Riege	Date and Hour: 9/23/12: 1330 hours	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*  
Not Applicable

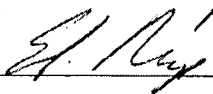
Describe Cause of Problem and Remedial Action Taken.\* On 9-23-12 at approximately 0400 hours, the benzene strippers were discovered to be overflowing through the fans and out the vent stack. Due to increased flow and foaming issues, the benzene strippers backed up causing overflow through the fans and the vent stack. The overflow went into the concrete pad and overflowed onto the ground on all four sides of the concrete containment and a portion into aeration lagoon 1. Operator decreased flow to the benzene strippers and maintenance department was called out immediately to begin vacuum and cleanup procedures.

Describe Area Affected and Cleanup Action Taken.\* On the northeast side of the benzene stripper pad, waste water overflowed out of the concrete containment onto the ground in an area estimated to be 10 x 30 feet which was saturated and had standing water. On the west side of the concrete containment, an area approximately 10 x 10 feet was also saturated with water. On the south side of the concrete berm there was also a small puddle of water. On the north side of the concrete containment, waste water overflowed onto the ground and flowed into the aeration lagoon (amount unknown). All 5 aerators were on-line in both lagoons 1 and lagoon 2. Upon discovery of the overflow the maintenance department was called immediately to begin vacuuming up the overflow using the vacuum truck in all areas affected. A trash pump was also in service pumping out the containment area. As of 1230 hours, all the standing water had been vacuumed up by the vacuum truck. The contaminated soil will be sampled, excavated and disposed of in accordance with applicable rules and regulations.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

#### OIL CONSERVATION DIVISION

Signature:



Printed Name: Ed Riege

Approved by Environmental Specialist:

Title: Environmental Manager

Approval Date:

Expiration Date:

E-mail Address: ed.riege@wnr.com

Conditions of Approval:

Attached ☐

Date: 9-23-12

Phone: 505-722-0217

\* Attach Additional Sheets If Necessary

## Chavez, Carl J, EMNRD

---

**From:** Larsen, Thurman <Thurman.Larsen@wnr.com>  
**Sent:** Saturday, September 15, 2012 10:59 PM  
**To:** Chavez, Carl J, EMNRD  
**Cc:** Powell, Brandon, EMNRD; VanHorn, Kristen, NMENV; Riege, Ed; Johnson, Cheryl  
**Subject:** C-141 AMENDED; (KOH INCIDENT FROM 09-12-12)  
**Attachments:** C-141 AMENDED.pdf

Dear Carl et all,

I am re-submitting the C-141 (Amended copy) to the Agency due to a miscalculation on my part. In my originally (C-141) report, I indicated 6-7 bbls of KOH solution that was released to the environment which in fact due to this miscalculation was actually < 1 bbl of KOH solution. If you should have any questions or require any additional information concerning this, please don't hesitate to contact me a (505) 722-0258 or via my cell (505) 862-1749. Sorry for the inconvenience.

Best regards,

Beck Larsen

---

**From:** Larsen, Thurman  
**Sent:** Friday, September 14, 2012 11:34 PM  
**To:** 'Chavez, Carl J, EMNRD'  
**Cc:** Powell, Brandon, EMNRD; 'VanHorn, Kristen, NMENV'; Riege, Ed  
**Subject:** KOH INCIDENT FROM 09-12-12

Dear Carl,

The above is the C-141 final report as requested on the incident that occurred on September 12, 2012. Please let me know if you have any additional questions or concerns about this incident.

Regards,

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised October 10, 2003

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

**Release Notification and Corrective Action**  
**(AMENDED on 9/15/2012)**

**OPERATOR**

☒ Initial Report ☒ Final Report

Name of Company: Western Refining	Contact: Beck Larsen
Address: I-40 / Exit 39, Jamestown, NM 87347	Telephone No.: (505) 722-0258
Facility Name: Western Refining (Gallup)	Facility Type: Petroleum Refinery

Surface Owner	Mineral Owner	Lease No.
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**LOCATION OF RELEASE**

Unit Letter	Section 28	Township 15N	Range 15W	Feet from the	North/South Line	Feet from the	East/West Line	County McKinley
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Latitude 35°29'22" Longitude 108°24'24"

**NATURE OF RELEASE**

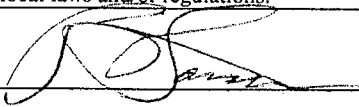
Type of Release Potassium Hydroxide (KOH) (20% Diluted Solution)	Volume of Release ~28 gal KOH Solution (<1 bbl); (56 lbs KOH)	Volume Recovered Unknown
Source of Release Hose used for Washing KOH from KOH Tower	Date and Hour of Occurrence 9/12/2012 @ 1530 hrs	Date and Hour of Discovery 9/12/2012 @ 1530 hrs
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom? N/A	
By Whom? N/A	Date and Hour N/A	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	
If a Watercourse was Impacted, Describe Fully.* N/A		

Describe Cause of Problem and Remedial Action Taken.\* Note that the KOH solution was in a diluted form of < 20% by weight (estimated). The incident occurred when a 1 inch hose that was being used to wash out the KOH Tower, blew out of the sewer cup due to an ice plug that formed at the end of the hose. The hose whipped around for a few seconds before the valve was shut off causing a small vapor cloud to be released in the Treater and Gas Con areas. The wind at the time was blowing from a north-north-east direction. There were several persons downwind of the vapor cloud that were exposed to fumes from the KOH vapors. The KOH spray was primarily on the concrete slab with some that came in contact with the ground.

Describe Area Affected and Cleanup Action Taken.\* The KOH spray was primarily on the concrete slab; however, some KOH solution did get on the ground. It was estimated that an area of 5 ft by 10 ft section (50 sq ft) of soil was affected. The KOH that was on the slab was either removed via vacuum truck or washed to the process sewer. Samples were collected and submitted to an Environmental Laboratory for TCLP analysis. A Work Order was written and contaminated soil has been removed for disposal at an approved disposal facility in accordance with all applicable regulations.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

**OIL CONSERVATION DIVISION**

Signature: 	Approved by District Supervisor:		
Printed Name: Beck Larsen			
Title: Environmental Engineer	Approval Date:	Expiration Date:	
E-mail Address: thurman.larsen@wnr.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 9/15/2012	Phone: (505) 722-0258		

\* Attach Additional Sheets If Necessary

## Chavez, Carl J, EMNRD

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Friday, September 14, 2012 2:24 PM  
**To:** Ed.Riege@wnr.com  
**Cc:** Sanchez, Daniel J., EMNRD; VonGonten, Glenn, EMNRD; Horowitz, Ruth, NMENV; Jenkins, William B., DPS; Powell, Brandon, EMNRD; Bailey, Jami, EMNRD; VanHorn, Kristen, NMENV  
**Subject:** RE: Gallup Refinery Message Received

Ed:

The OCD requests a follow-up C-141 (I think a final version because you seemed to indicate that the release was cleaned up) based on the public health aspect of the recent potassium hydroxide release.

Thank you in advance.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Department  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Drive, Santa Fe, New Mexico 87505  
Office: (505) 476-3490  
E-mail: [CarlJ.Chavez@State.NM.US](mailto:CarlJ.Chavez@State.NM.US)  
Website: <http://www.emnrd.state.nm.us/ocd/>  
“Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?” To see how, please go to: “Pollution Prevention & Waste Minimization” at <http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Friday, September 14, 2012 12:01 PM  
**To:** [Ed.Riege@wnr.com](mailto:Ed.Riege@wnr.com)  
**Cc:** Sanchez, Daniel J., EMNRD; VonGonten, Glenn, EMNRD; Horowitz, Ruth, NMENV; Jenkins, William B., DPS; Powell, Brandon, EMNRD; Bailey, Jami, EMNRD; VanHorn, Kristen, NMENV  
**Subject:** Gallup Refinery Message Received

Ed:

Voice mail message received. Hope everybody affected is ok now.

Western stated in its voice mail msg. on my phone at 11:01 a.m. today that the 20% Potassium Hydroxide (diluted) spill was estimated at less than 1 bbl onto containment with slight soil impact that has been addressed.

The release did not meet the OCD Oil and Gas release notification regulatory requirements nor the EPA RQ of 1,000 lbs. Of the 18 persons affected, 1 was hospitalized for respiratory type symptoms (light skin burn(s)) and the rest had clothing removed and after being examined were released.

Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Department

Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Drive, Santa Fe, New Mexico 87505  
Office: (505) 476-3490  
E-mail: [CarlJ.Chavez@State.NM.US](mailto:CarlJ.Chavez@State.NM.US)

Website: <http://www.emnrd.state.nm.us/ocd/>

“Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?” To see how, please go to: “Pollution Prevention & Waste Minimization” at <http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>

## Chavez, Carl J, EMNRD

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Friday, September 14, 2012 12:01 PM  
**To:** Ed.Riege@wnr.com  
**Cc:** Sanchez, Daniel J., EMNRD; VonGonten, Glenn, EMNRD; Horowitz, Ruth, NMENV; Jenkins, William B., DPS; Powell, Brandon, EMNRD; Bailey, Jami, EMNRD; VanHorn, Kristen, NMENV  
**Subject:** Gallup Refinery Message Received

Ed:

Voice mail message received. Hope everybody affected is ok now.

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Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Department  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Drive, Santa Fe, New Mexico 87505  
Office: (505) 476-3490  
E-mail: [CarlJ.Chavez@State.NM.US](mailto:CarlJ.Chavez@State.NM.US)

Website: <http://www.emnrd.state.nm.us/ocd/>

"Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?" To see how, please go to: "Pollution Prevention & Waste Minimization" at <http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>



## Chavez, Carl J, EMNRD

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Friday, September 14, 2012 10:06 AM  
**To:** VonGonten, Glenn, EMNRD  
**Cc:** Powell, Brandon, EMNRD; Jenkins, William B., DPS; Horowitz, Ruth, NMENV; VanHorn, Kristen, NMENV  
**Subject:** FW: HazMat Log - Metro  
**Attachments:** Scanned document from OEM001.pdf

Glenn:

First, I don't think based on what OCD knows so far that it was a "Major Release" and more details should follow. OCD SF has not been contacted to date.

Please find below the communication log for the pipeline release and apparent endangerment to Human Health stemming from the incident, the details of which has not been reported to the OCD by the operator to date, but does not appear to be from process units or infrastructure within the refinery property boundary.

The incident apparently occurred on 9/12 approx. 3:30 p.m. where a currently unknown release volume potassium hydroxide was released from a ruptured hose.

OCD Oil and Gas Regulations (AP-111) for release notification are as follows:

19.15.29.9 REPORTING REQUIREMENTS: The person operating or controlling either the release or the location of the release shall provide notification of releases in 19.15.29.8 NMAC as follows.

A. The person shall report a major release by giving both immediate verbal notice and timely written notice pursuant to Subsections A and B of 19.15.29.10 NMAC.

B. The person shall report a minor release by giving timely written notice pursuant to Subsection B of 19.15.29.10 NMAC.

19.15.29.10 CONTENTS OF NOTIFICATION:

A. The person operating or controlling either the release or the location of the release shall provide immediate verbal notification within 24 hours of discovery to the division district office for the area within which the release takes place. In addition, the person shall provide immediate verbal notification of a release of a volume that may with reasonable probability be detrimental to water or exceed the standards in Subsections A and B or C of 19.15.30.9 NMAC to the division's environmental bureau chief. The notification shall provide the information required on form C-141.

B. The person operating or controlling either the release or the location of the release shall provide timely written notification within 15 days to the division district office for the area within which the release occurs by completing and filing form C-141. In addition, the person shall provide timely written notification of a release of a volume that may with reasonable probability be detrimental to water or exceed the standards in Subsections A and B or C of 19.15.30.9 NMAC to the division's environmental bureau chief within 15 days after the release is discovered. The written notification shall verify the prior verbal notification and provide appropriate additions or corrections to the information contained in the prior verbal notification.

I contacted Ed Riege at 10 a.m. today and left a msg.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Department Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Drive, Santa Fe, New Mexico 87505  
Office: (505) 476-3490  
E-mail: CarlJ.Chavez@State.NM.US  
Website: <http://www.emnrd.state.nm.us/ocd/> "Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?" To see how, please go to: "Pollution Prevention & Waste Minimization" at <http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>

-----Original Message-----

From: Horowitz, Ruth, NMENV  
Sent: Friday, September 14, 2012 9:41 AM  
To: Chavez, Carl J, EMNRD  
Subject: FW: HazMat Log - Metro

-----Original Message-----

From: Jenkins, William B., DPS  
Sent: Thursday, September 13, 2012 12:42 PM  
To: Lehner, James L., DPS; Trujillo, Geno H., DPS; Horowitz, Ruth, NMENV  
Cc: Soland, Darren H., DPS  
Subject: FW: HazMat Log - Metro

All,

This is the call log from the incident at Western Refinery yesterday. It has now been confirmed that 19 people were transported to the hospital and two were admitted into the hospital.

We are playing catch up, since our officer was turned away from the scene by the fire chief of the refinery. The chemical that was released is potassium hydroxide. It was released from a ruptured hose and sprayed on two people. My understanding is that the chemical froze and caused a vapor cloud that caused the other injuries.

Ruth,

I am notifying you of the incident, but would also like you to look into the incident from the EPA side to see what other violations the refinery committed.

We are doing other interviews and are planning on submitting a criminal complaint against the fire chief for his violations of the state HMER plan.

Captain William Jenkins  
Commander, District 6 Gallup  
New Mexico State Police  
4200 East Historic Highway 66  
Gallup, NM 87301  
Phone: (505) 863-9353  
Fax: (505) 722-2043  
[william.jenkins@state.nm.us](mailto:william.jenkins@state.nm.us)

---

From: Anthony Dimas [[oem@co.mckinley.nm.us](mailto:oem@co.mckinley.nm.us)]  
Sent: Thursday, September 13, 2012 12:08 PM  
To: Jenkins, William B., DPS  
Subject: HazMat Log - Metro

Capt

This is the call log from Metro from the HazMat yesterday.

Dimas

-----Original Message-----

From: oem.scans@co.mckinley.nm.us [mailto:oem.scans@co.mckinley.nm.us]

Sent: Thursday, September 13, 2012 12:12 PM

To: oem@co.mckinley.nm.us

Subject: Scanned document from OEM

Please open the attached document. It was scanned and sent to you using the OEM Xerox Scanner.

Attachment File Type: pdf

multifunction device Location: Office of the Emergency Manager, McKinley County Device Name: OEM\_XEROX\_7545

Thank you and have a nice day.

## Detail Call For Service Report

Login ID: MD\_SSHETIMA

Print Date/Time: 09/13/2012 11:32

From CFS: 3198 From Date: 09/12/2012 15:21 CFS Type: All  
To CFS: 3198 To Date: 09/12/2012 15:21 Agency Type:  
Layer: All Areas: All

CFS Number: 3198 Call Date/Time: 09/12/2012 15:21:25 Primary Incident: 2012-00000083

Location: 92 GIANT CROSSING , NM , JAMESTOWN Dispatch Time: 09/12/2012 15:23:38  
Additnl Loc Info: Arrive Time: 09/12/2012 15:40:37  
Common Name: Clear Date/Time: 09/12/2012 18:46:35  
Phone: Nature Of Call: Created By: BH/1376  
Call Type: HAZ MAT Report Required: No Canceled: No  
Status: In Progress Priority: 1 Source: Officer Initiated  
Police ORI: NM0170100 EMS ORI: Fire ORI:

### Person Information

Name	Person Type	Address	Phone	Race	Sex	DOB	Age	SSN
D11	Caller	<UNKNOWN> , ,						

# Detail Call For Service Report

Login ID: MD\_SSHETIMA

Print Date/Time: 09/13/2012 11:32

From CFS: 3198  
To CFS: 3198  
Layer: All

From Date: 09/12/2012 15:21  
To Date: 09/12/2012 15:21  
Areas: All

CFS Type: All  
Agency Type:

CFS Number: 3198 Call Date/Time: 09/12/2012 15:21:25 Primary Incident: 2012-00000083

## Narrative, Questionnaire Responses, TDD Text

Create Time	Created By	Narrative
09/12/2012 15:21:40	BH/1376	D11 & D1 TO REFINERY
09/12/2012 15:21:46	BH/1376	HAVE POSS .....
09/12/2012 15:21:50	BH/1376	ASC AGIN
09/12/2012 15:21:52	BH/1376	CORR AGAIN
09/12/2012 15:22:07	BH/1376	D11/ENRT ALSO PAGE OUT THOR TO CALL
09/12/2012 15:22:14	BH/1376	NATURE OF CALL
09/12/2012 15:22:20	BH/1376	AHF RELEASE POSS BURNS
09/12/2012 15:23:21	BH/1376	D1/COPIES
09/12/2012 15:24:06	BH/1376	?>D1/TO D11 STATION PLEASE
09/12/2012 15:24:16	BH/1376	D1>D11 FIRE STATION
09/12/2012 15:24:32	BH/1376	?>OTHER STATION
09/12/2012 15:25:55	BH/1376	?>(101)
09/12/2012 15:26:20	EG/1308	RG..ADV SO42
09/12/2012 15:26:28	BH/1376	((HEARING STATIC AND MUFFLED VOICES))
09/12/2012 15:26:34	BH/1376	1101>FM2/
09/12/2012 15:26:49	EG/1308	42...10 4...
09/12/2012 15:27:49	LC/1319	LC..PAGED MED*
09/12/2012 15:28:09	LC/1319	3173..ENRT
09/12/2012 15:28:16	BH/1376	MED1/COPY ENRT
09/12/2012 15:29:14	BH/1376	701/GOT 4 PT DECON SET UP ADV THOREAU MED JUST RT THRU GATE CT FM2
09/12/2012 15:29:45	BH/1376	WESTERN / 8PT ALL IN SHOWERS D11 23 WINGATE ALL TRANS TO TRANS PT DECON SEND PERSONAL ALONG
09/12/2012 15:30:24	BH/1376	1101/THIS WILL BE COMM 8 PTS NEED MORE TRNAS ADV MED* ADV THEM GLASUMATE WILL NEED THEM TO TRASN
09/12/2012 15:30:37	BH/1376	98 W/MED*
09/12/2012 15:31:09	BH/1376	FM2/ENRT TO STATION TO GET REST OF CALCUM GLUSAMATE
09/12/2012 15:31:22	BH/1376	FM1/GET HOLD BLU WATER LAKE TO COME THIS WAY ALSO
09/12/2012 15:31:49	BH/1376	FM2/RUNNING CODE TO FMO
09/12/2012 15:32:06	BH/1376	3173/COPY TRAFFIC
09/12/2012 15:33:10	BH/1376	PF D2
09/12/2012 15:33:38	BH/1376	ADV D2
09/12/2012 15:34:02	BH/1376	COMM/BE ADV KOH NOT AFH STILL HAVE PTS
09/12/2012 15:34:05	BH/1376	ADV
09/12/2012 15:34:31	BH/1376	THOR EMS/ENRT FR 412 122 TO ACTIVATE 2ND EMS UNIT
09/12/2012 15:34:36	BH/1376	D2/ACK 108 SHORTLY
09/12/2012 15:35:02	BH/1376	MED1>D2/23 ON THIS TIME WILL ADV IF WE NEED YOU I THINK WE HAVE IT COVER
09/12/2012 15:35:10	BH/1376	201>MED/ADV TO STND DWN
09/12/2012 15:35:17	BH/1376	MED1>ADV TO STND BY

## Chavez, Carl J, EMNRD

---

**To:** Larsen, Thurman  
**Subject:** RE: Initial and Final C-141 for Flare Fire of 08-16-12

Beck:

OCD is in receipt of the C-141.

Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Department  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Drive, Santa Fe, New Mexico 87505  
Office: (505) 476-3490  
E-mail: [CarlJ.Chavez@State.NM.US](mailto:CarlJ.Chavez@State.NM.US)  
Website: <http://www.emnrd.state.nm.us/ocd/>

“Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?” To see how, please go to: “Pollution Prevention & Waste Minimization” at <http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>

---

**From:** Larsen, Thurman [<mailto:Thurman.Larsen@wnr.com>]  
**Sent:** Tuesday, August 28, 2012 8:34 AM  
**To:** Chavez, Carl J, EMNRD  
**Subject:** Initial and Final C-141 for Flare Fire of 08-16-12

Carl,  
The above attachment is the Initial and Final C-141 Report for the Flare Fire that occurred on August 16, 2012. Please let me know if you have any questions.  
Regards,  
Beck Larsen

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised October 10, 2003

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

**Release Notification and Corrective Action**

**OPERATOR**

☒ Initial Report ☒ Final Report

Name of Company: Western Refining	Contact: Ed Riege	
Address: I-40 / Exit 39, Jamestown, NM 87347	Telephone No.: (505) 722-0217	
Facility Name: Western Refining (Gallup)	Facility Type: Petroleum Refinery	
Surface Owner	Mineral Owner	Lease No.

**LOCATION OF RELEASE**

Unit Letter	Section 28	Township 15N	Range 15W	Feet from the	North/South Line	Feet from the	East/West Line	County McKinley
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Latitude 35°29'22" Longitude 108°24'24"

**NATURE OF RELEASE**

Type of Release Naphtha (consumed in fire)	Volume of Release 6 -12 bbls (est liquid volume consumed in fire)	Volume Recovered N/A
Source of Release Hydrocarbon Blowdown Tank/Flare Fire	Date and Hour of Occurrence 8/16/2012 @ 1023hrs	Date and Hour of Discovery 8/16/2012 @ 1038 hrs
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? OCD- Carl Chavez/Brandon Powell; NMED-Kathy Palmer (msg)	
By Whom? Beck Larsen within 1 hours of fire	Date and Hour 08/16/12; 1120 hrs; 1157	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	

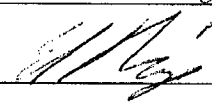
If a Watercourse was Impacted, Describe Fully.\*  
N/A

Describe Cause of Problem and Remedial Action Taken.\* Incident was due to a high level in the Hydrocarbon Blowdown drum (Operation) and to a high level in the Hydrocarbon Knockout drum at the flare (API Area). Liquid hydrocarbon came out of the flare tip and ignited. The on-site Fire Department and Emergency Response Team (ERT) was dispatched immediately.

Describe Area Affected and Cleanup Action Taken.\* The on-site Fire Department used their Pumper Trucks to extinguish the flames.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

**OIL CONSERVATION DIVISION**

Signature: 	Approved by District Supervisor:	
Printed Name: Ed Riege		
Title: Environmental Manager	Approval Date:	Expiration Date:
E-mail Address: ed.riege@wnr.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 8/28/2012 Phone: (505) 722-0217		

\* Attach Additional Sheets If Necessary

**Chavez, Carl J, EMNRD**

---

**From:** Larsen, Thurman <Thurman.Larsen@wnr.com>  
**Sent:** Thursday, August 16, 2012 1:47 PM  
**To:** Chavez, Carl J, EMNRD  
**Cc:** Riege, Ed  
**Subject:** Initial and Final C-141 Report for NHT Reboiler Circulating Pump (H-P3D) Fire of 08-10-12  
**Attachments:** 20120816133451454.pdf

Carl,

The above attachment is the Initial and Final C-141 Report as required for the NHT Circulating Pump (H-P3D) Fire that occurred on Friday, August 10, 2012. Please let me know if you have any questions.

Regards,

-----Original Message-----

From: [galscanavantis@wnr.com](mailto:galscanavantis@wnr.com) [<mailto:galscanavantis@wnr.com>]  
Sent: Thursday, August 16, 2012 11:35 AM  
To: Larsen, Thurman  
Subject:

This E-mail was sent from "RNPF030AF" (Aficio MP 3351).

Scan Date: 08.16.2012 13:34:51 (-0400)  
Queries to: [galscanavantis@wnr.com](mailto:galscanavantis@wnr.com)



District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised October 10, 2003

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

**Release Notification and Corrective Action**

**OPERATOR**

☒ Initial Report ☒ Final Report

Name of Company: Western Refining	Contact: Ed Riege
Address: I-40 / Exit 39, Jamestown, NM 87347	Telephone No.: (505) 722-0217
Facility Name: Western Refining (Gallup)	Facility Type: Petroleum Refinery

Surface Owner	Mineral Owner	Lease No.
---------------	---------------	-----------

**LOCATION OF RELEASE**

Unit Letter	Section 28	Township 15N	Range 15W	Feet from the	North/South Line	Feet from the	East/West Line	County McKinley
-------------	---------------	-----------------	--------------	---------------	------------------	---------------	----------------	--------------------

Latitude 35°29'22" Longitude 108°24'24"

**NATURE OF RELEASE**

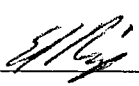
Type of Release Naphtha (consumed in fire)	Volume of Release ~ 10 bbls	Volume Recovered N/A
Source of Release NHT Reboiler Circulating Pump (H-P3D)	Date and Hour of Occurrence 8/10/2012 @ 2010 hrs	Date and Hour of Discovery 8/10/2012 @ 2010 hrs
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? OCD- Carl Chavez	
By Whom? Ed Riege within 24 hours of fire	Date and Hour 08/11/12; 1724 hrs	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.\*  
N/A

Describe Cause of Problem and Remedial Action Taken.\* A seal blew out on the west NHT Reboiler Circulating Pump (H-P3D) discharging naphtha from pump casing causing a small fire to ignite. Western Emergency Response Team (ERT) was dispatched to the scene to extinguish fire. Fire water was used to extinguish all flames. It was estimated that approximately 10 bbls of Naphtha was consumed in the fire. Any fire water or naphtha was collected on a concrete slab that drains to the Wastewater Treatment System.

Describe Area Affected and Cleanup Action Taken.\* Any contaminants (Naphtha and fire water) were collected and contained in the NHT area via a concrete containment. All contaminants were drained from the containment area are via a sump draining to the Wastewater Treatment System.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 		<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Ed Riege		Approved by District Supervisor:	
Title: Environmental Manager		Approval Date:	Expiration Date:
E-mail Address: ed.riege@wnr.com		Conditions of Approval:	Attached <input type="checkbox"/>
Date: 8/13/2012 Phone: (505) 722-0217			

\* Attach Additional Sheets If Necessary

## Chavez, Carl J, EMNRD

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Thursday, August 16, 2012 11:36 AM  
**To:** Chavez, Carl J, EMNRD  
**Cc:** VonGonten, Glenn, EMNRD; VanHorn, Kristen, NMENV  
**Subject:** Gallup Refinery (AP-111) C-141 Verbal Notification of Flare Stack Fire at ~ 11:25 a.m.  
Note to File

To whom this message may concern.

Beck Larsen (Western Refining SW- Gallup Refinery) called Carl Chavez today at around 11:25 a.m. to report a flare stack fire that is currently under investigation.

The fire was discovered at around 10:23 a.m. today and appears to be backflow from a hydrocarbon blow-down drum that overfilled and back flowed up a leaky flare stack pipe and caught fire. The fire was extinguished at around 10:38 a.m. by Western's fire crew and the fire marshal was on location.

An initial C-141 Report with complete information is forthcoming.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Department  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Drive, Santa Fe, New Mexico 87505  
Office: (505) 476-3490  
E-mail: [CarlJ.Chavez@State.NM.US](mailto:CarlJ.Chavez@State.NM.US)  
Website: <http://www.emnrd.state.nm.us/ocd/>

"Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?" To see how, please go to: "Pollution Prevention & Waste Minimization" at <http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>

## Chavez, Carl J, EMNRD

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Wednesday, August 15, 2012 6:56 AM  
**To:** CarlJ.Chavez@state.nm.us  
**Subject:** Note to File: Gallup Refinery (AP-111) C-141 Fire on 8/10/2012 ~ 8 p.m.

To whom this may concern.

OCD received voice mail message from Ed Riege at (505) 722-0217 on Saturday, August 11, 2012 ~ 5:25 p.m. that a fire within the process unit had occurred when the Naphtha Hydro Treater Pump failed and naphtha spilled out and caught fire. The fire was extinguished quickly by the local Western Fire Team. There were no injuries or releases to the environment. A C-141 is to be sent to the OCD.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Department  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Drive, Santa Fe, New Mexico 87505  
Office: (505) 476-3490  
E-mail: [CarlJ.Chavez@State.NM.US](mailto:CarlJ.Chavez@State.NM.US)  
Website: <http://www.emnrd.state.nm.us/ocd/>

“Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?” To see how, please go to: “Pollution Prevention & Waste Minimization” at <http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>

## Chavez, Carl J, EMNRD

---

**From:** Larsen, Thurman <Thurman.Larsen@wnr.com>  
**Sent:** Thursday, August 02, 2012 8:40 AM  
**To:** Chavez, Carl J, EMNRD; VanHorn, Kristen, NMENV  
**Cc:** VonGonten, Glenn, EMNRD  
**Subject:** RE: SEMI-ANNUAL BIO-VENTING MONITORING REPORT #4

Thanks Carl.

---

**From:** Chavez, Carl J, EMNRD [<mailto:CarlJ.Chavez@state.nm.us>]  
**Sent:** Thursday, August 02, 2012 8:34 AM  
**To:** Larsen, Thurman; VanHorn, Kristen, NMENV  
**Cc:** VonGonten, Glenn, EMNRD  
**Subject:** RE: SEMI-ANNUAL BIO-VENTING MONITORING REPORT #4

Beck:

If you agree to comply with EPA QA/QC and DQOs and provide a diagram(s) of soil sample locations with analytical data, the agencies will not require a work plan for the soil sampling investigation? Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Department  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Drive, Santa Fe, New Mexico 87505  
Office: (505) 476-3490  
E-mail: [CarlJ.Chavez@State.NM.US](mailto:CarlJ.Chavez@State.NM.US)  
Website: <http://www.emnrd.state.nm.us/ocd/>  
“Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?” To see how, please go to: “Pollution Prevention & Waste Minimization” at  
<http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>

---

**From:** Larsen, Thurman [<mailto:Thurman.Larsen@wnr.com>]  
**Sent:** Thursday, August 02, 2012 8:07 AM  
**To:** Chavez, Carl J, EMNRD; VanHorn, Kristen, NMENV  
**Cc:** VonGonten, Glenn, EMNRD  
**Subject:** RE: SEMI-ANNUAL BIO-VENTING MONITORING REPORT #4

Carl,  
Thank you for your quick response. Will the Agency require a Work Plan prior to sampling or can we implement the soil investigation without it? Thanks,

---

**From:** Chavez, Carl J, EMNRD [<mailto:CarlJ.Chavez@state.nm.us>]  
**Sent:** Thursday, August 02, 2012 7:30 AM  
**To:** Larsen, Thurman; VanHorn, Kristen, NMENV  
**Cc:** VonGonten, Glenn, EMNRD  
**Subject:** RE: SEMI-ANNUAL BIO-VENTING MONITORING REPORT #4

Beck:

NMED and OCD have reviewed the report and agree with your observations and recommendations cited in the report.

Please implement the recommendations and submit monitoring information as specified. Please provide at least 72 hours advance notice on sampling events to allow the agencies to witness the field activities.

Thank you.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Department

Oil Conservation Division, Environmental Bureau

1220 South St. Francis Drive, Santa Fe, New Mexico 87505

Office: (505) 476-3490

E-mail: [CarlJ.Chavez@State.NM.US](mailto:CarlJ.Chavez@State.NM.US)

Website: <http://www.emnrd.state.nm.us/ocd/>

“Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?” To see how, please go to: “Pollution Prevention & Waste Minimization” at

<http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>

---

**From:** Larsen, Thurman [<mailto:Thurman.Larsen@wnr.com>]

**Sent:** Tuesday, July 31, 2012 12:29 PM

**To:** VanHorn, Kristen, NMENV; Chavez, Carl J, EMNRD

**Subject:** SEMI-ANNUAL BIO-VENTING MONITORING REPORT #4

Dear Kristen and Carl,

The above attachment is the Semi-annual Bio-venting Monitoring Report #4 for the passive bio-venting and remediation project of the ULSD tanks (T-115/116) area. I have included the entire report as a “\*pdf” attachment above. If you should have any questions regarding this report, please either call me directly or via e-mail.

Regards,

Beck Larsen; CHMM, REM, RPG

Environmental Engineer

Western Refining- Gallup Refinery

## PUBLIC NOTICE

### STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

In accordance with 20.6.2.3108.F NMAC, Navajo Refining Company, L.L.C. hereby gives public notice of its application to renew a the New Mexico Oil Conservation Division (OCD) discharge permit to inject treated non-hazardous waste water effluent from the refinery's on-site wastewater treatment plant refinery oilfield waste water from the Artesia Refinery reverse osmosis unit, boiler feed, and process units (Per 20.6.2.3108(F)(3)) ground water discharge permit for into a Class I (nonhazardous) injection well WDW-3 (API# 30-015-26575). The well WDW-3 is located in the SE/4, SW/4 of Section 1, Township 18 South, Range 27 East, NMPM, Eddy County, New Mexico. The well WDW-3 location is located approximately 10.514 miles SE-SE of the intersection of I-285 and Hwy 82 (Artesia Refinery) or approximately 2.75 miles S of Hwy 82 and CR-225 or approximately 14 miles southeast of the Navajo Refining Company, LLC petroleum refining facility. The discharge results from the operation of Navajo's Artesia Refinery is located at 501 E. Main Street, Artesia, New Mexico.

Waste water from the refinery is generated from the treatment of waters from the processing of crude oil, including the removal of water entrained in crude oil, the washing of crude oil to remove salts and sediment, water used for heating and cooling during refining, boiler blowdown, and stormwater collected from process portions of the refinery.

Underground injection at WDW-3 occurs within the Lower Wolfcamp, Cisco and Canyon Formations at an within the injection interval from 7,660 to 8,620 feet (log depth). The injection rate into WDW-3 will not exceed 500 gpm at and a the maximum allowable surface injection pressure of 1530 psig.

The injected fluid refinery oil field waste water quality is contains approximately 3,400 mg/L total dissolved solids (TDS). The TDS concentration of the naturally occurring formation Formation fluids within the permitted injection interval exceeds 10,000 milligrams per liter mg/L TDS. Groundwater is first encountered in the area of WDW-3 at a depth range of approximately 75-50 to 150 feet below land surface. The groundwater quality exhibits a TDS concentration ranges of from about 1,500 to 2,200 mg/L TDS.

The Oil Conservation Division will accept comments and statements of interest regarding the application and will create a facility-specific mailing list for persons who wish to receive future notices. Interested parties may obtain information, submit comments, and request to be placed on a facility-specific mailing list by contacting the OCD at the following address:

Persons interested in obtaining further information, submitting comments, or requesting to be on a facility-specific mailing list for future notices may contact the Environmental Bureau Chief of the New Mexico Oil Conservation Division.

Comments and inquiries on regulations should be directed to:

~~State of New Mexico~~Director  
~~Energy, Minerals and Natural Resources Department~~  
~~Oil Conservation Division~~New Mexico Oil Conservation Division  
~~Environmental Bureau~~  
1220 South St. Francis Drive  
Santa Fe, ~~New~~M Mexico 87505  
Telephone: (505) 476-3440

When corresponding, please reference the name of the applicant and the well name.

**Chavez, Carl J, EMNRD**

---

**From:** Larsen, Thurman <Thurman.Larsen@wnr.com>  
**Sent:** Tuesday, July 31, 2012 12:29 PM  
**To:** VanHorn, Kristen, NMENV; Chavez, Carl J, EMNRD  
**Subject:** SEMI-ANNUAL BIO-VENTING MONITORING REPORT #4  
**Attachments:** SA BIO-VENTING RPT 0712 SUBMITTAL.pdf

Dear Kristen and Carl,

The above attachment is the Semi-annual Bio-venting Monitoring Report #4 for the passive bio-venting and remediation project of the ULSD tanks (T-115/116) area. I have included the entire report as a "\*pdf" attachment above. If you should have any questions regarding this report, please either call me directly or via e-mail.

Regards,

Beck Larsen; CHMM, REM, RPG  
Environmental Engineer  
Western Refining- Gallup Refinery





GALLUP

WNR  
LISTED  
NYSE

July 31, 2012

New Mexico Environmental Department  
Hazardous Waste Bureau (HWB)  
1301 Siler Road, Building B  
Santa Fe, NM 87507  
Attn: Kristen Van Horn

New Mexico Energy, Minerals and Natural Resources  
Oil Conservation Division (OCD)  
1220 South St. Francis Drive  
Santa Fe, NM 87505  
Attn: Mr. Carl Chavez

Re: **REPORT #4:**  
**Semi-annual Report submittal for Passive Bioremediation (Bio-ventilation) Project for Ultra Low Sulfur Diesel (ULSD) remediation in accordance with NSR Permit No. 0633-M8-R3, Part A.214**

Dear Ms. Van Horn and Mr. Chavez:

On October 16, 2010, Western Refining Company, L.P. (Western) - Gallup Refinery (the "facility") was granted New Source Review (NSR) Permit 0633-M8-R3 which, under Part 1.214,, allowed the installation of a Passive Bioremediation (Bio-Ventilation) System for the Ultra Low Sulfur Diesel (ULSD) fuel spill that occurred at the facility. The objective of the bio-ventilation system is to decrease the average VOC concentration over time to a satisfactory standard. As part of the permit allowance, Western is required to submit semi-annual reports to the Agency. This semi-annual report includes monitoring data and analytical results from January 1, 2012 through June 30, 2012 in order to meet the requirements of the NSR permit and provides both a discussion and statistical analysis to the effectiveness of the remediation system.

This report includes several attachments including the Bio-ventilation Monitoring Log (Attachment 1), Daily Average VOC Concentration and Temperature versus Time graph (Attachment 2) and the Daily Average VOC Concentration and Precipitation versus Time graph (Attachment 3). Also the Linear Regression Statistical Analysis Summary (Attachment 4) and the QA/QC data (Attachment 5) provided by the LDAR contractor have been included. A detailed discussion of each will follow below.

#### **VOC Monitoring and QA/QC Procedures**

LDAR personnel conduct the VOC monitoring using a Flame Ionizing Detector (FID) (TVA-1000) in accordance with the United States Environmental Protection Agency (U.S. EPA) Method 21. LDAR personnel use the QA/QC procedures for VOC monitoring on a daily basis as prescribed by Method 21. As mentioned above, Western LDAR contractors do not use a dilution kit to obtain PID measurements. These measurements are collected from each

standpipe individually. The response factor is not shown in the data table but is included in the "QC Calibration Form" shown in the "Response Time" section. Please refer to the attached "Calibration and Drift Assessment Form" in Attachment 5.

### Monitoring Schedule

Initial VOC monitoring was conducted on a bi-weekly basis from December 2010 through January 2011 in order to establish a VOC baseline concentration. In February 2011, VOC monitoring frequency was changed from a bi-weekly to a monthly basis. Western conducted monthly VOC monitoring through June 2011. Beginning on July 1, 2011, Western commenced a quarterly VOC monitoring schedule. One sampling event was conducted in the 3<sup>rd</sup> quarter of 2011 (September 28) and three sampling events were conducted in the 4<sup>th</sup> quarter (November 7, November 15, and December 12) to further assure the validity of the sampling results. Two additional monitoring events have occurred in the first two quarters of 2012.

### Discussion of Semi-annual Monitoring Period Results

The daily average VOC concentration for all sampling points combined was calculated for each sampling event and is reflected at the bottom of each column in the Bio-ventilation Monitoring Log. (Attachment #1) The Daily Average VOC Concentration and Temperature versus Time (Attachment #2) and Daily Average VOC Concentration and Precipitation versus Time plots (Attachment #3) reflect an overall decrease in the VOC concentration from the initial event (December 7, 2010); however, there are multiple anomalies in the trend that we attempted to explain through correlations with soil temperature and moisture. (Attachment 4)

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Since soil temperature data was not collected, Western obtained historical ambient temperatures during each sampling event to see if there was any correlation between the VOC concentration fluctuations with temperature. The times of highs and lows did not correspond to similar fluctuations in ambient temperatures. An increase in soil temperature should show an increase in VOC concentrations in the stand pipe but this could not be correlated based on the data obtained.

Since soil moisture data was not collected, Western also obtained historical precipitation data for the period before and during each sampling event to see if there was any correlation between the VOC concentration fluctuations with soil moisture. The times of highs and lows did not correspond to similar precipitation events. Low or too high soil moisture should show a decrease in VOC concentrations in the stand pipe but this could not be correlated based on the data obtained.

The VOC concentrations have been variable and show no correlation with the ambient temperature and precipitation at the time of sampling.

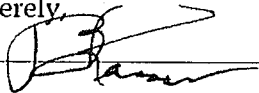
### Conclusion

Passive bioremediation (bio-ventilation) of ultra low sulfur diesel (ULSD) for spill material in order to augment reduction of VOC concentration is a time dependent process. The objective of

the bio-ventilation system is to decrease the average VOC concentration over time to a satisfactory standard and VOC monitoring through April 2012 per the requirements of the NSR permit has been performed in order to evaluate the effectiveness of the bio-ventilation system. Although VOC concentrations appear to be decreasing over time at most sampling locations, there are several anomalies that cannot be scientifically justified with the present sampling data. Furthermore, a reduction in VOC concentrations in the local atmosphere does not necessarily mean that soil concentrations are subsiding. High VOC concentrations in the local atmosphere can be a positive result as this may mean that the bio-remediation is working effectively. Since it appears that the soil is not uniform and soil concentrations are variable, monitoring of the VOC concentrations from the vent pipes might not be the best method to demonstrate a reduction in VOC concentrations in the soil. Taking soil samples might be a better way to demonstrate reduction.

Western intends to continue the quarterly VOC sampling routine but augment the sampling with soil sampling as a means to demonstrate satisfactory remediation has occurred. A soil sampling protocol will be prepared and submitted to the Agency prior to the next sampling event. Western will submit to the Agency additional semi-annual progress reports approximately thirty days after the end of each semi-annual period. If you should require any additional information or assistance in this matter, please contact me at the number listed below or via e-mail.

Sincerely,



Beck Larsen, CHMM/REM/PG  
Environmental Engineer  
Western Refining Southwest

Direct Line: (505) 722-0258  
e-mail: [Thurman.larsen@wnr.com](mailto:Thurman.larsen@wnr.com)

Cc: File

Attachment #1- Bio-ventilation Monitoring Log  
Attachment #2- Daily Average VOC Concentration and Temperature versus Time  
Attachment #3- Daily Average VOC Concentration and Precipitation versus Time  
Attachment #4- Linear Regression Statistical Analysis Summary  
Attachment #5- Qa/Qc Data; Calibration and Drift Assessment Form

## **Bio-Ventilation Monitoring Log Attachment 1**

Passive Bioremediation Project  
Semi-Annual Report for July 1 – December 31, 2011  
Western Refining Company, L.P. – Gallup Refinery

BIO-VENTILLATION MONITORING LOG																	ATTACHMENT #1
								READING (PPM)									
								DATE									
Map Location	Date →	12/7/2010	12/27/2010	1/14/2011	1/21/2011	2/17/2011	3/22/2011	4/27/2011	5/27/2011	6/28/2011	9/28/2011	11/7/2011	11/15/2011	12/12/2011	2/22/2012	4/30/2012	AVERAGE
	Days from Start of Monitoring	0.00	20.00	38.00	45.00	72.00	105.00	141.00	171.00	203.00	295.00	335.00	343.00	370.00	442.00	510.00	
	Ambient Temperature at 12 pm (deg F)	44.00	39.00	32.00	36.00	46.00	35.00	49.00	74.00	90.00	75.00	41.00	47.00	36.00	47.00	69.00	
	Precipitation during or within 2 days of sampling (in)	0.00	0.00	0.02	0.00	0.00	0.05	0.06	0.00	0.00	0.00	0.25	0.05	0.03	0.00	0.00	
Number	Tag #																
C(1)	22723	2190	6836	2486	4982	2203	91	17	297	1571	1422	1236	1164	197	1303	632	1787.1
C(2)	22724	10006	9963	5444	7731	9991	98	19	992	164	1317	1199	1691	1130	3184	340	3551.1
C(3)	22725	20031	51033	14990	12694	18993	77	43	779	8105	14441	6895	3451	2100	8602	796	10735.3
C(4)	22726	20025	62111	100000	9916	25103	52	7	1098	41555	23331	18409	7387	498	28911	2894	22753.1
C(5)	22727	10084	12163	4290	4014	10223	44	12	208	1623	11844	71925	2449	499	24922	727	10333.8
C(6)	22728	2340	2750	324	108	2119	55	8	35	193	8198	5247	709	22	1338	288	1582.1
C(7)	22729	4012	5006	1148	401	3954	78	8	60	27	9735	8006	184	11	638	34	2220.0
C(8)	22730	20093	67115	10086	6510	23145	72	13	17006	11087	99999	15092	21918	1294	54819	10000	23881.9
C(9)	22731	19072	57336	1583	15	17663	106	31	99999	35767	99999	54332	24897	16088	55881	33000	34384.6
C(10)	22732	70093	89037	11998	10143	74873	91	8	29	6313	13018	25919	2373	34922	4864	890	22971.4
C(11)	22733	30031	31144	7977	9991	37803	112	59	1295	2005	28265	6357	4441	2896	15937	1260	11958.2
C(12)	22734	10056	16800	7079	15699	14002	101	38	412	579	3338	3565	774	936	3198	398	5116.3
C(13)	22735	160080	193828	44112	8652	153218	100	30	66	12774	26897	58611	889	89772	6306	282	50227.5
C(14)	22736	8252	3406	2392	199	9116	101	39	312	996	99999	9901	44	30	19	389	9013.0
C(15)	22737	50094	72116	38849	10341	49660	107	48	3065	3318	99999	29475	7938	1000	16981	12984	26398.3
C(16)	22738	9112	988	579	123	9731	32	7	20	22	12860	8156	24	6	109	10	2785.1
OVERALL DAILY AVG (ppm)		27846.9	42589.3	15831.1	6344.9	28849.7	82.1	24.2	7654.6	7881.2	34653.9	20145.3	5020.8	9462.6	14063.1	4070.3	14981.3
DAILY GEOMETRIC AVG (ppm)		14556.1	19049.0	5555.3	2193.3	15377.6	77.7	18.6	457.3	1607.1	16313.0	10850.0	1480.3	644.9	3897.3	748.6	

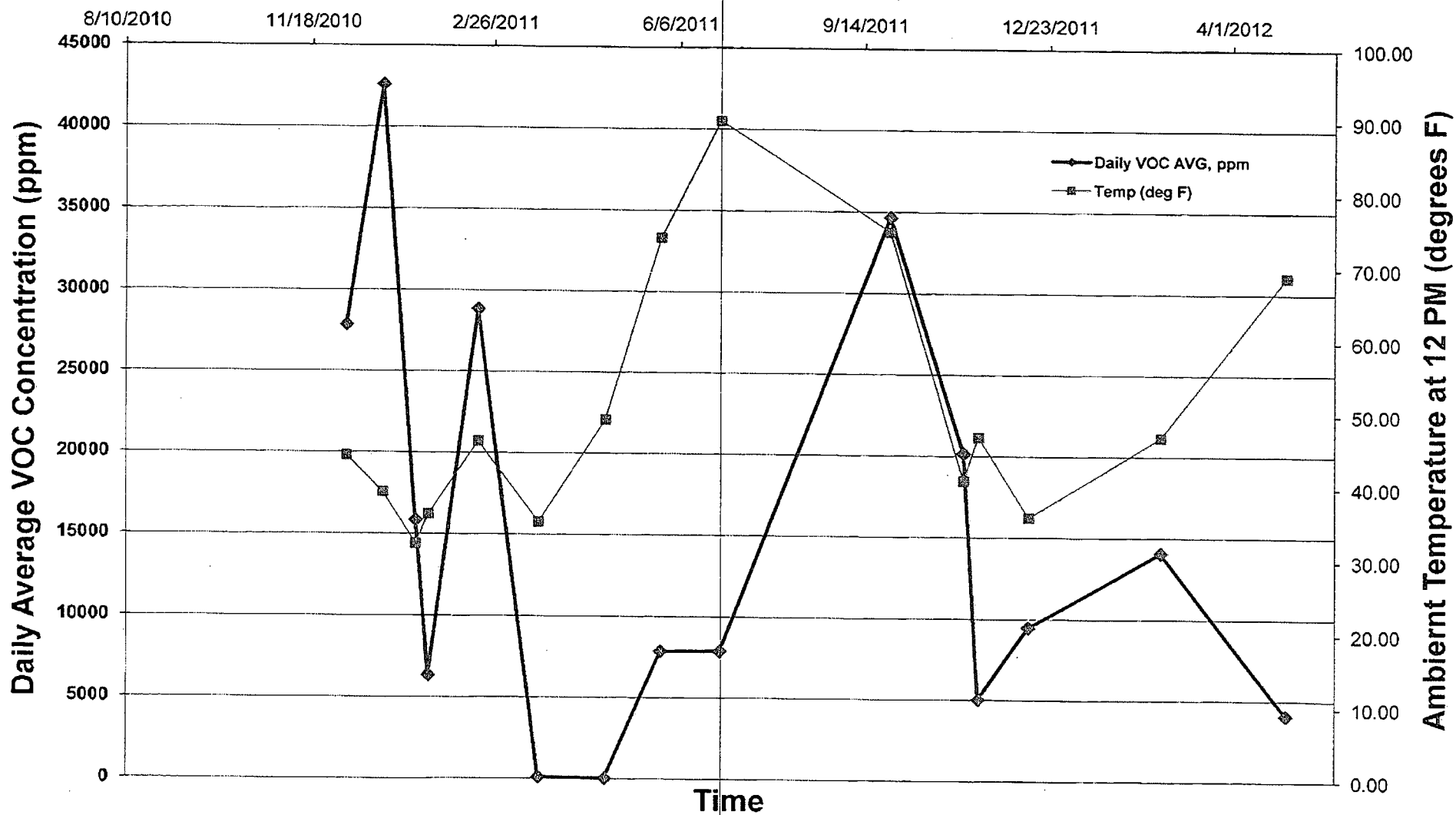
NOTE- Coordinates for C (1)- Lat: 35 deg, 29 min, 23.82285 sec; Long: 108 deg, 25 min, 35.48146 sec

## Daily Average VOC Concentration and Temperature versus Time Attachment 2

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Passive Bioremediation Project  
Semi-Annual Report for July 1 – December 31, 2011  
Western Refining Company, L.P. – Gallup Refinery

Daily Average VOC Concentration and Temperature versus Time



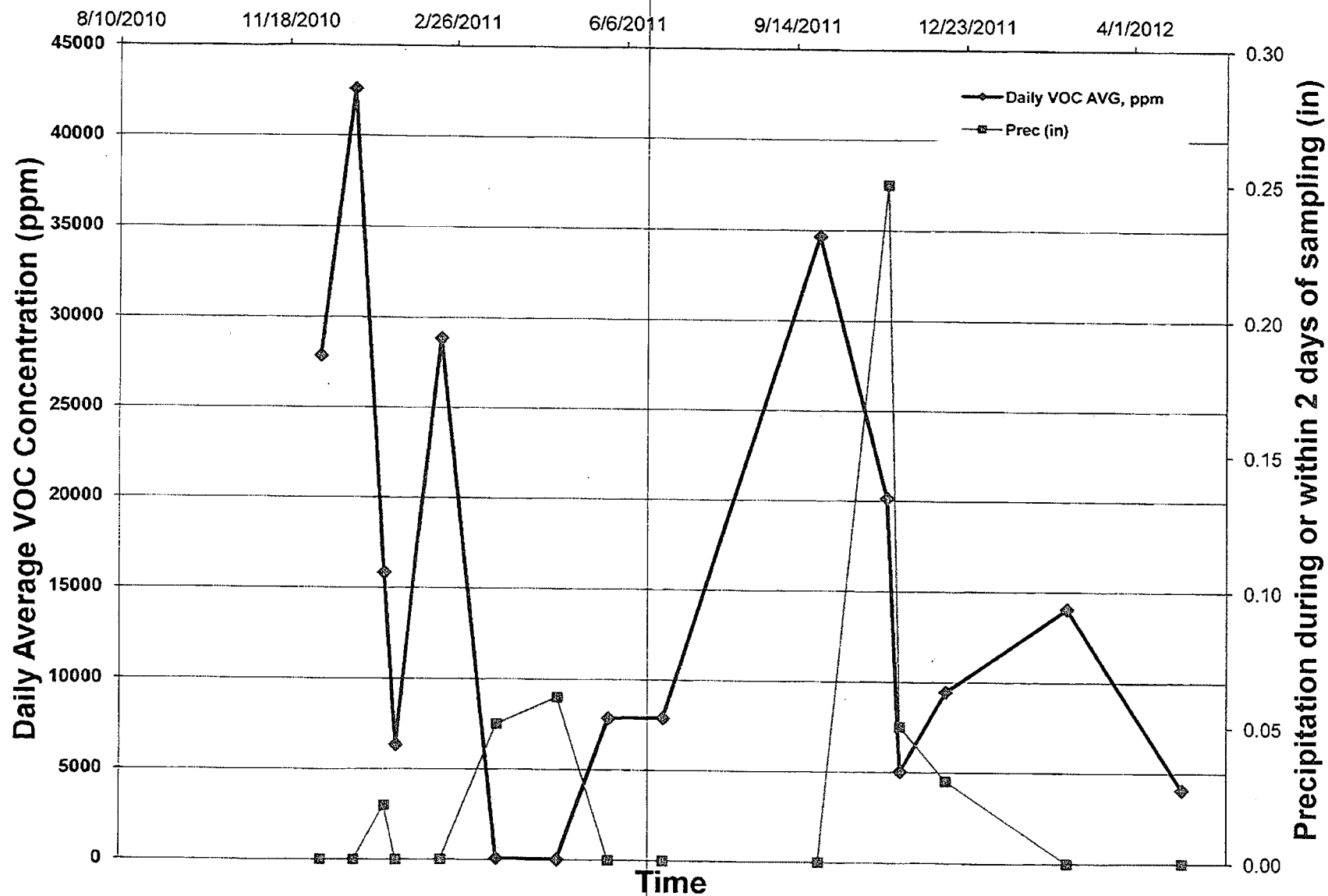
## Daily Average VOC Concentration and Precipitation versus Time Attachment 3

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Passive Bioremediation Project  
Semi-Annual Report for July 1 – December 31, 2011  
Western Refining Company, L.P. – Gallup Refinery



Daily Average VOC Concentration and Precipitation versus Time



## **Linear Regression Statistical Analysis Summary Attachment 4**

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Passive Bioremediation Project  
Semi-Annual Report for July 1 – December 31, 2011  
Western Refining Company, L.P. – Gallup Refinery

## Attachment #4

### Linear Regression Statistical Analysis Summary

C(1)	
-6.72	3094.45
3.22	751.09
0.27	1718.78
4.35	12.00
12844497.87	35450399.34

Key	
Slope	Intercept
SE of Slope	SE of Intercept
R <sup>2</sup> (Coefficient of Determination)	SE of C(1)
F Statistic	Degrees of Freedom
Regress Sum of Squares	Residual Sum of Squares

0.992 Probability that trend exists (1 - P(F<x)).

C(2)	
-17.14	6938.69
6.02	1402.13
0.40	3208.59
8.11	12.00
83442412.71	123540910.79

Key	
Slope	Intercept
SE of Slope	SE of Intercept
R <sup>2</sup> (Coefficient of Determination)	SE of C(1)
F Statistic	Degrees of Freedom
Regress Sum of Squares	Residual Sum of Squares

1.000 Probability that trend exists (1 - P(F<x)).

C(3)	
-44.91	19720.82
22.51	5243.33
0.25	11998.68
3.98	12.00
572931517.51	1727619361.34

Key	
Slope	Intercept
SE of Slope	SE of Intercept
R <sup>2</sup> (Coefficient of Determination)	SE of C(1)
F Statistic	Degrees of Freedom
Regress Sum of Squares	Residual Sum of Squares

0.988 Probability that trend exists (1 - P(F<x)).

C(4)	
-62.97	35776.16
51.90	12088.47
0.11	27662.90
1.47	12.00
1126587869.10	9182835202.11

Key	
Slope	Intercept
SE of Slope	SE of Intercept
R <sup>2</sup> (Coefficient of Determination)	SE of C(1)
F Statistic	Degrees of Freedom
Regress Sum of Squares	Residual Sum of Squares

0.743 Probability that trend exists (1 - P(F<x)).

C(5)	
45.38	2658.02
34.45	8024.72
0.13	18363.55
1.73	12.00
584963172.46	4046638037.54

Key	
Slope	Intercept
SE of Slope	SE of Intercept
R <sup>2</sup> (Coefficient of Determination)	SE of C(1)
F Statistic	Degrees of Freedom
Regress Sum of Squares	Residual Sum of Squares

0.823 Probability that trend exists (1 - P(F<x)).

C(6)	
3.43	1042.54
4.60	1071.24

Key	
Slope	Intercept
SE of Slope	SE of Intercept

## Attachment #4

0.04	2451.40
0.56	12.00
3341847.22	72112238.21

0.161

Probability that trend exists (1 - P(F<x)).

C(7)	
0.86	2217.95
6.37	1483.70
0.00	3395.25
0.02	12.00
209360.90	138332322.82

R <sup>2</sup> (Coefficient of Determination)	SE of C(1)
F Statistic	Degrees of Freedom
Regress Sum of Squares	Residual Sum of Squares

Key	
Slope	Intercept
SE of Slope	SE of Intercept
R <sup>2</sup> (Coefficient of Determination)	SE of C(1)
F Statistic	Degrees of Freedom
Regress Sum of Squares	Residual Sum of Squares

0.000

Probability that trend exists (1 - P(F<x)).

C(8)	
40.34	17439.65
55.73	12981.96
0.04	29707.54
0.52	12.00
462314822.26	10590453845.24

Key	
Slope	Intercept
SE of Slope	SE of Intercept
R <sup>2</sup> (Coefficient of Determination)	SE of C(1)
F Statistic	Degrees of Freedom
Regress Sum of Squares	Residual Sum of Squares

0.138

Probability that trend exists (1 - P(F<x)).

C(9)	
87.22	18410.13
62.67	14596.76
0.14	33402.80
1.94	12.00
2161345629.77	13388962547.73

Key	
Slope	Intercept
SE of Slope	SE of Intercept
R <sup>2</sup> (Coefficient of Determination)	SE of C(1)
F Statistic	Degrees of Freedom
Regress Sum of Squares	Residual Sum of Squares

0.867

Probability that trend exists (1 - P(F<x)).

C(10)	
-89.92	41118.71
54.40	12671.19
0.19	28996.38
2.73	12.00
2296991407.09	10089482816.12

Key	
Slope	Intercept
SE of Slope	SE of Intercept
R <sup>2</sup> (Coefficient of Determination)	SE of C(1)
F Statistic	Degrees of Freedom
Regress Sum of Squares	Residual Sum of Squares

0.953

Probability that trend exists (1 - P(F<x)).

C(11)	
-28.11	17901.95
24.73	5761.45
0.10	13184.34
1.29	12.00
224440594.63	2085922138.59

Key	
Slope	Intercept
SE of Slope	SE of Intercept
R <sup>2</sup> (Coefficient of Determination)	SE of C(1)
F Statistic	Degrees of Freedom
Regress Sum of Squares	Residual Sum of Squares

0.667

Probability that trend exists (1 - P(F<x)).

C(12)	
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Key	
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## Attachment #4

-25.87	10223.80
9.36	2179.47
0.39	4987.43
7.65	12.00
190212198.42	298493535.08

Slope	Intercept
SE of Slope	SE of Intercept
R <sup>2</sup> (Coefficient of Determination)	SE of C(1)
F Statistic	Degrees of Freedom
Regress Sum of Squares	Residual Sum of Squares

0.999 Probability that trend exists (1 - P(F<x)).

C(13)	
-197.28	90151.07
120.25	28008.97
0.18	64094.92
2.69	12.00
11057650443.38	49297899999.54

Key	
Slope	Intercept
SE of Slope	SE of Intercept
R <sup>2</sup> (Coefficient of Determination)	SE of C(1)
F Statistic	Degrees of Freedom
Regress Sum of Squares	Residual Sum of Squares

0.950 Probability that trend exists (1 - P(F<x)).

C(14)	
32.04	3723.68
50.45	11751.28
0.03	26891.30
0.40	12.00
291740673.21	8677705494.79

Key	
Slope	Intercept
SE of Slope	SE of Intercept
R <sup>2</sup> (Coefficient of Determination)	SE of C(1)
F Statistic	Degrees of Freedom
Regress Sum of Squares	Residual Sum of Squares

0.065 Probability that trend exists (1 - P(F<x)).

C(15)	
-43.76	35420.60
59.36	13826.07
0.04	31639.19
0.54	12.00
544028865.05	12012459750.45

Key	
Slope	Intercept
SE of Slope	SE of Intercept
R <sup>2</sup> (Coefficient of Determination)	SE of C(1)
F Statistic	Degrees of Freedom
Regress Sum of Squares	Residual Sum of Squares

0.152 Probability that trend exists (1 - P(F<x)).

C(16)	
-1.24	3211.90
9.16	2133.05
0.00	4881.21
0.02	12.00
436971.59	285915007.63

Key	
Slope	Intercept
SE of Slope	SE of Intercept
R <sup>2</sup> (Coefficient of Determination)	SE of C(1)
F Statistic	Degrees of Freedom
Regress Sum of Squares	Residual Sum of Squares

0.000 Probability that trend exists (1 - P(F<x)).

Overall Average	
-19.29	19315.63
25.24	5879.43
0.05	13454.33
0.58	12.00
105725027.40	2172227928.36

Key	
Slope	Intercept
SE of Slope	SE of Intercept
R <sup>2</sup> (Coefficient of Determination)	SE of C(1)
F Statistic	Degrees of Freedom
Regress Sum of Squares	Residual Sum of Squares

## Calibration and Drift Assessment Form Attachment 5

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Passive Bioremediation Project  
Semi-Annual Report for July 1 - December 31, 2011  
Western Refining Company, L.P. - Gallup Refinery

WESTERN REFINING SOUTHWEST GALLUP REFINERY

CALIBRATION REPORT

INSTRUMENT: 1008240826 - TVA-1000

DATE CALIBRATED: 4/30/12 8:43

TECHNICIAN: 1417 - DANIEL CASTANEDA

CALIBRATION GASES				
GAS TYPE	GAS CODE	DESCRIPTION	CERTIFICATION DATE	CONCENTRATION
LOW	L0004	L0004-EXP:12/5/2013 METHANE MIX/LOT#1204SE08 PO	12/05/2008	1.950
HIGH	H0003	METHANE MIX / LOT# 1204SF08 PO# 46043	12/05/2008	9.620
ZERO	Z0003	AIR ULTRA ZERO CYLINDER#TG-074076DOCUMENT#0	04/26/2011	0

METER CERTIFICATION RESPONSE		
	LOW	HIGH
READING #1	2.050	9.699
READING #2	2.021	9.693
READING #3	2.017	9.684
ERROR PRECISION	4.07	0.75
PASSED	Yes	Yes

PRECISION FOR THE INSTRUMENT IS ACCEPTED WHEN THE AVERAGE OF THE ABSOLUTE VALUE OF % ERROR IS EQUAL TO OR LESS THAN 10%

$$\% \text{ ERROR PRECISION} = \left| \frac{(\text{METER READING}) - (\text{KNOWN VALUE OF CALIBRATION GAS})}{(\text{KNOWN VALUE OF THE CALIBRATION GAS})} \right| \times 100$$

RESPONSE TIME				
FIRST READING	SECOND READING	THIRD READING	AVERAGE	PASSED
4	4	3	4	Yes

ACCEPTABLE RESPONSE TIME SHOULD BE 30 SECONDS OR LESS FROM THE TIME THE CALIBRATION GAS IS INTRODUCED, TO THE TIME THE INSTRUMENT IS EQUAL TO OR LESS THAN +/- TEN PERCENT (<=10%)

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WESTERN REFINING SOUTH-WEST GALLUP REFINERY

CALIBRATION REPORT

INSTRUMENT: 1008240826 - TVA-1000

DATE CALIBRATED: 4/30/12 8:44

TECHNICIAN: 1417 - DANIEL CASTANEDA

CALIBRATION GASES

GAS TYPE	GAS CODE	DESCRIPTION	CERTIFICATION DATE	CONCENTRATION
LOW	L0005	EXP 12/5/13 METHANE MIX/ LOT# 1204SD08 PO # 0840	12/05/2008	504
HIGH	H0003	METHANE MIX / LOT# 1204SF08 PO# 46043	12/05/2008	9,620
ZERO	Z0003	AIR ULTRA ZERO CYLINDER#TG-074076DOCUMENT#0	04/26/2011	0

METER CERTIFICATION RESPONSE

	LOW	HIGH
READING #1	489	9.699
READING #2	480	9.693
READING #3	491	9.684
ERROR PRECISION	3.44	0.75
PASSED	Yes	Yes

PRECISION FOR THE INSTRUMENT IS ACCEPTED WHEN THE AVERAGE OF THE ABSOLUTE VALUE OF % ERROR IS EQUAL TO OR LESS THAN 10%

$$\% \text{ ERROR PRECISION} = \left| \frac{(\text{METER READING}) - (\text{KNOWN VALUE OF CALIBRATION GAS})}{(\text{KNOWN VALUE OF THE CALIBRATION GAS})} \right| \times 100$$

RESPONSE TIME

FIRST READING	SECOND READING	THIRD READING	AVERAGE	PASSED
3	4	3	3	Yes

ACCEPTABLE RESPONSE TIME SHOULD BE 30 SECONDS OR LESS FROM THE TIME THE CALIBRATION GAS IS INTRODUCED, TO THE TIME THE INSTRUMENT IS EQUAL TO OR LESS THAN +/- TEN PERCENT (<=10%)

PRINTED ON 4/30/2012 AT 2:38:42PM



WESTERN REFINING SOUTHWEST GALLUP REFINERY

CALIBRATION REPORT

INSTRUMENT: 1008240826 - TVA-1000

DATE CALIBRATED: 4/30/12 12:00

TECHNICIAN: 1417 - DANIEL CASTANEDA

CALIBRATION GASES				
GAS TYPE	GAS CODE	DESCRIPTION	CERTIFICATION DATE	CONCENTRATION
LOW	L0004	L0004-EXP:12/5/2013 METHANE MIX/LOT#1204SE08 PO	12/05/2008	1.950
HIGH	H0003	METHANE MIX / LOT# 1204SF08 PO# 46043	12/05/2008	9.620
ZERO	Z0003	AIR ULTRA ZERO CYLINDER#TG-074076DOCUMENT#0	04/26/2011	0

METER CERTIFICATION RESPONSE		
	LOW	HIGH
READING #1	2.034	9.729
READING #2	2.034	9.729
READING #3	2.034	9.729
ERROR PRECISION	4.31	1.13
PASSED	Yes	Yes

PRECISION FOR THE INSTRUMENT IS ACCEPTED WHEN THE AVERAGE OF THE ABSOLUTE VALUE OF % ERROR IS EQUAL TO OR LESS THAN 10%

$$\% \text{ ERROR PRECISION} = \left| \frac{(\text{METER READING}) - (\text{KNOWN VALUE OF CALIBRATION GAS})}{(\text{KNOWN VALUE OF THE CALIBRATION GAS})} \right| \times 100$$

RESPONSE TIME				
FIRST READING	SECOND READING	THIRD READING	AVERAGE	PASSED
4	4	4	4	Yes

ACCEPTABLE RESPONSE TIME SHOULD BE 30 SECONDS OR LESS FROM THE TIME THE CALIBRATION GAS IS INTRODUCED, TO THE TIME THE INSTRUMENT IS EQUAL TO OR LESS THAN +/- TEN PERCENT (<=10%)

PRINTED ON 4/30/2012 AT 2:38:42PM

## WESTERN REFINING SOUTHWEST GALLUP REFINERY

## CALIBRATION REPORT

INSTRUMENT: 1008240826 - TVA-1000

DATE CALIBRATED: 4/30/12 12:00

TECHNICIAN: 1417 - DANIEL CASTANEDA

## CALIBRATION GASES

GAS TYPE	GAS CODE	DESCRIPTION	CERTIFICATION DATE	CONCENTRATION
LOW	L0005	EXP 12/5/13 METHANE MIX/ LOT# 1204SD08 PO # 0840	12/05/2008	504
HIGH	H0003	METHANE MIX / LOT# 1204SF08 PO# 46043	12/05/2008	9.620
ZERO	Z0003	AIR ULTRA ZERO CYLINDER#TG-074076DOCUMENT#0	04/26/2011	0

## METER CERTIFICATION RESPONSE

	LOW	HIGH
READING #1	496	9.729
READING #2	498	9.729
READING #3	496	9.729
ERROR PRECISION	1.59	1.13

PASSED	Yes	Yes
--------	-----	-----

PRECISION FOR THE INSTRUMENT IS ACCEPTED WHEN THE AVERAGE OF THE ABSOLUTE VALUE OF % ERROR IS EQUAL TO OR LESS THAN 10%

$$\% \text{ ERROR PRECISION} = \left| \frac{(\text{METER READING}) - (\text{KNOWN VALUE OF CALIBRATION GAS})}{(\text{KNOWN VALUE OF THE CALIBRATION GAS})} \right| \cdot 100$$

## RESPONSE TIME

FIRST READING	SECOND READING	THIRD READING	AVERAGE	PASSED
4	4	4	4	Yes

ACCEPTABLE RESPONSE TIME SHOULD BE 30 SECONDS OR LESS FROM THE TIME THE CALIBRATION GAS IS INTRODUCED, TO THE TIME THE INSTRUMENT IS EQUAL TO OR LESS THAN +/- TEN PERCENT (<=10%)

PRINTED ON 4/30/2012 AT 2:38:42PM

WESTERN REFINING SOUTH-WEST GALLUP REFINERY

CALIBRATION REPORT

INSTRUMENT: 70801 - TVA-1000

DATE CALIBRATED: 2/22/12 9:39

TECHNICIAN: 1086 - BARBIE PRIETO

CALIBRATION GASES				
GAS TYPE	GAS CODE	DESCRIPTION	CERTIFICATION DATE	CONCENTRATION
LOW	L0004	L0004-EXP:12/5/2013 METHANE MIX/LOT#1204SE08 PO	12/05/2008	1.950
HIGH	H0003	METHANE MIX / LOT# 1204SF08 PO# 46043	12/05/2008	9.620
ZERO	Z0003	AIR ULTRA ZERO CYLINDER#TG-074076DOCUMENT#0	04/26/2011	0

METER CERTIFICATION RESPONSE		
	LOW	HIGH
READING #1	2.020	9.992
READING #2	2.021	9.998
READING #3	2.020	9.990
ERROR PRECISION	3.76	3.88
PASSED	Yes	Yes

PRECISION FOR THE INSTRUMENT IS ACCEPTED WHEN THE AVERAGE OF THE ABSOLUTE VALUE OF % ERROR IS EQUAL TO OR LESS THAN 10%

$$\text{ERROR PRECISION} = \left| \frac{(\text{METER READING}) - (\text{KNOWN VALUE OF CALIBRATION GAS})}{(\text{KNOWN VALUE OF THE CALIBRATION GAS})} \right| \times 100$$

RESPONSE TIME				
FIRST READING	SECOND READING	THIRD READING	AVERAGE	PASSED
3	3	3	3	Yes

ACCEPTABLE RESPONSE TIME SHOULD BE 30 SECONDS OR LESS FROM THE TIME THE CALIBRATION GAS IS INTRODUCED, TO THE TIME THE INSTRUMENT IS EQUAL TO OR LESS THAN +/- TEN PERCENT (<=10%)

PRINTED ON 2/23/2012 AT 8:24:09AM

WESTERN REFINING SOUTHWEST GALLUP REFINERY

CALIBRATION REPORT

INSTRUMENT: 70801 - TVA-1000

DATE CALIBRATED: 2/22/12 9:39

TECHNICIAN: 1086 - BARBIE PRIETO

CALIBRATION GASES

GAS TYPE	GAS CODE	DESCRIPTION	CERTIFICATION DATE	CONCENTRATION
LOW	L0005	EXP 12/6/13 METHANE MIX/ LOT# 1204SD08 PO # 0840	12/05/2008	504
HIGH	H0003	METHANE MIX / LOT# 1204SF08 PO# 46043	12/05/2008	9.620
ZERO	Z0003	AIR ULTRA ZERO CYLINDER#TG-074076DOCUMENT#0	04/26/2011	0

METER CERTIFICATION RESPONSE

	LOW	HIGH
READING #1	520	9.992
READING #2	520	9.998
READING #3	519	9.990
ERROR PRECISION	3.11	3.88
PASSED	Yes	Yes

PRECISION FOR THE INSTRUMENT IS ACCEPTED WHEN THE AVERAGE OF THE ABSOLUTE VALUE OF % ERROR IS EQUAL TO OR LESS THAN 10%

$$\% \text{ ERROR PRECISION} = \left| \frac{(\text{METER READING}) - (\text{KNOWN VALUE OF CALIBRATION GAS})}{(\text{KNOWN VALUE OF THE CALIBRATION GAS})} \right| \times 100$$

RESPONSE TIME

FIRST READING	SECOND READING	THIRD READING	AVERAGE	PASSED
3	3	3	3	Yes

ACCEPTABLE RESPONSE TIME SHOULD BE 30 SECONDS OR LESS FROM THE TIME THE CALIBRATION GAS IS INTRODUCED, TO THE TIME THE INSTRUMENT IS EQUAL TO OR LESS THAN +/- TEN PERCENT (<=10%)

PRINTED ON 2/23/2012 AT 8:24:09AM

WESTERN REFINING SOUTH-WEST GALLUP REFINERY

CALIBRATION REPORT

INSTRUMENT: 70801 - TVA-1000

DATE CALIBRATED: 2/22/12 12:00

TECHNICIAN: 1417 - DANIEL CASTANEDA

CALIBRATION GASES

GAS TYPE	GAS CODE	DESCRIPTION	CERTIFICATION DATE	CONCENTRATION
LOW	L0004	L0004-EXP:12/5/2013 METHANE MIX/LOT#1204SE08 PO	12/05/2008	1.950
HIGH	H0003	METHANE MIX / LOT# 1204SF08 PO# 46043	12/05/2008	9.620
ZERO	Z0003	AIR ULTRA ZERO CYLINDER#TG-074076DOCUMENT#0	04/26/2011	0

METER CERTIFICATION RESPONSE

	LOW	HIGH
READING #1	1.987	9.752
READING #2	1.987	9.752
READING #3	1.987	9.752
ERROR PRECISION	1.90	1.37
PASSED	Yes	Yes

PRECISION FOR THE INSTRUMENT IS ACCEPTED WHEN THE AVERAGE OF THE ABSOLUTE VALUE OF % ERROR IS EQUAL TO OR LESS THAN 10%

$$\% \text{ ERROR PRECISION} = \left| \frac{(\text{METER READING}) - (\text{KNOWN VALUE OF CALIBRATION GAS})}{(\text{KNOWN VALUE OF THE CALIBRATION GAS})} \right| \times 100$$

RESPONSE TIME

FIRST READING	SECOND READING	THIRD READING	AVERAGE	PASSED
4	4	4	4	Yes

ACCEPTABLE RESPONSE TIME SHOULD BE 30 SECONDS OR LESS FROM THE TIME THE CALIBRATION GAS IS INTRODUCED, TO THE TIME THE INSTRUMENT IS EQUAL TO OR LESS THAN +/- TEN PERCENT (<=10%)

PRINTED ON 2/23/2012 AT 8:24:00AM

## WESTERN REFINING SOUTHWEST GALLUP REFINERY

## CALIBRATION REPORT

INSTRUMENT: 70801 - TVA-1000

DATE CALIBRATED: 2/22/12 12:00

TECHNICIAN: 1417 - DANIEL CASTANEDA

## CALIBRATION GASES

GAS TYPE	GAS CODE	DESCRIPTION	CERTIFICATION DATE	CONCENTRATION
LOW	L0005	EXP 12/5/13 METHANE MIX/ LOT# 1204SD08 PO # 0840	12/05/2008	504
HIGH	H0003	METHANE MIX / LOT# 1204SF08 PO# 48043	12/05/2008	9.620
ZERO	Z0003	AIR ULTRA ZERO CYLINDER#TG-074076DOCUMENT#0	04/26/2011	0

## METER CERTIFICATION RESPONSE

	LOW	HIGH
READING #1	515	9.752
READING #2	515	9.752
READING #3	515	9.752
ERROR PRECISION	2.18	1.37
PASSED	Yes	Yes

PRECISION FOR THE INSTRUMENT IS ACCEPTED WHEN THE AVERAGE OF THE ABSOLUTE VALUE OF % ERROR IS EQUAL TO OR LESS THAN 10%

$$\% \text{ ERROR PRECISION} = \left| \frac{(\text{METER READING}) - (\text{KNOWN VALUE OF CALIBRATION GAS})}{(\text{KNOWN VALUE OF THE CALIBRATION GAS})} \right| \times 100$$

## RESPONSE TIME

FIRST READING	SECOND READING	THIRD READING	AVERAGE	PASSED
4	4	4	4	Yes

ACCEPTABLE RESPONSE TIME SHOULD BE 30 SECONDS OR LESS FROM THE TIME THE CALIBRATION GAS IS INTRODUCED, TO THE TIME THE INSTRUMENT IS EQUAL TO OR LESS THAN +/- TEN PERCENT (<=10%)

PRINTED ON 2/23/2012 AT 8:24:09AM

WESTERN REFINING SOUTH-WEST GALLUP REFINERY

CALIBRATION REPORT

INSTRUMENT: 70801 - TVA-1000

DATE CALIBRATED: 2/22/12 16:20

TECHNICIAN: 1323 - TRACEY PRIETO

CALIBRATION GASES

GAS TYPE	GAS CODE	DESCRIPTION	CERTIFICATION DATE	CONCENTRATION
LOW	L0004	L0004-EXP:12/5/2013 METHANE MIX/LOT#1204SE08 PO	12/05/2008	1.950
HIGH	H0003	METHANE MIX / LOT# 1204SF08 PO# 48043	12/05/2008	9.620
ZERO	Z0003	AIR ULTRA ZERO CYLINDER#TG-074076DOCUMENT#0	04/26/2011	0

METER CERTIFICATION RESPONSE

	LOW	HIGH
READING #1	1.951	9.596
READING #2	1.951	9.596
READING #3	1.951	9.596
ERROR PRECISION	0.05	0.25
PASSED	Yes	Yes

PRECISION FOR THE INSTRUMENT IS ACCEPTED WHEN THE AVERAGE OF THE ABSOLUTE VALUE OF % ERROR IS EQUAL TO OR LESS THAN 10%

$$\% \text{ ERROR PRECISION} = \frac{(\text{METER READING}) - (\text{KNOWN VALUE OF CALIBRATION GAS})}{(\text{KNOWN VALUE OF THE CALIBRATION GAS})} \times 100$$

RESPONSE TIME

FIRST READING	SECOND READING	THIRD READING	AVERAGE	PASSED
4	4	4	4	Yes

ACCEPTABLE RESPONSE TIME SHOULD BE 30 SECONDS OR LESS FROM THE TIME THE CALIBRATION GAS IS INTRODUCED, TO THE TIME THE INSTRUMENT IS EQUAL TO OR LESS THAN +/- TEN PERCENT (<=10%)

PRINTED ON 2/23/2012 AT 8:24:09AM

WESTERN REFINING SOUTHWEST GALLUP REFINERY

CALIBRATION REPORT

INSTRUMENT: 70801 - TVA-1000

DATE CALIBRATED: 2/22/12 16:20

TECHNICIAN: 1323 - TRACEY PRIETO

CALIBRATION GASES

GAS TYPE	GAS CODE	DESCRIPTION	CERTIFICATION DATE	CONCENTRATION
LOW	L0005	EXP 12/5/13 METHANE MIX/ LOT# 1204SD08 PO # 0840	12/05/2008	504
HIGH	H0003	METHANE MIX / LOT# 1204SF08 PO# 46043	12/05/2008	9.620
ZERO	Z0003	AIR ULTRA ZERO CYLINDER#TG-074076DOCUMENT#0	04/26/2011	0

METER CERTIFICATION RESPONSE

	LOW	HIGH
READING #1	507	9.596
READING #2	507	9.596
READING #3	507	9.596
ERROR PRECISION	0.60	0.25
PASSED	Yes	Yes

PRECISION FOR THE INSTRUMENT IS ACCEPTED WHEN THE AVERAGE OF THE ABSOLUTE VALUE OF % ERROR IS EQUAL TO OR LESS THAN 10%

$$\% \text{ ERROR PRECISION} = \left| \frac{(\text{METER READING}) - (\text{KNOWN VALUE OF CALIBRATION GAS})}{(\text{KNOWN VALUE OF THE CALIBRATION GAS})} \right| \times 100$$

RESPONSE TIME

FIRST READING	SECOND READING	THIRD READING	AVERAGE	PASSED
4	4	4	4	Yes

ACCEPTABLE RESPONSE TIME SHOULD BE 30 SECONDS OR LESS FROM THE TIME THE CALIBRATION GAS IS INTRODUCED, TO THE TIME THE INSTRUMENT IS EQUAL TO OR LESS THAN +/- TEN PERCENT (<=10%)

PRINTED ON 2/23/2012 AT 8:24:09AM



## Chavez, Carl J, EMNRD

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Thursday, August 02, 2012 7:30 AM  
**To:** 'Larsen, Thurman'; VanHorn, Kristen, NMENV  
**Cc:** VonGonten, Glenn, EMNRD  
**Subject:** RE: SEMI-ANNUAL BIO-VENTING MONITORING REPORT #4

Beck:

NMED and OCD have reviewed the report and agree with your observations and recommendations cited in the report.

Please implement the recommendations and submit monitoring information as specified. Please provide at least 72 hours advance notice on sampling events to allow the agencies to witness the field activities.

Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Department  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Drive, Santa Fe, New Mexico 87505  
Office: (505) 476-3490  
E-mail: [CarlJ.Chavez@State.NM.US](mailto:CarlJ.Chavez@State.NM.US)  
Website: <http://www.emnrd.state.nm.us/oed/>

"Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the Nation?" To see how, please go to: "Pollution Prevention & Waste Minimization" at <http://www.emnrd.state.nm.us/oed/environmental.htm#environmental>

---

**From:** Larsen, Thurman [<mailto:Thurman.Larsen@wnr.com>]  
**Sent:** Tuesday, July 31, 2012 12:29 PM  
**To:** VanHorn, Kristen, NMENV; Chavez, Carl J, EMNRD  
**Subject:** SEMI-ANNUAL BIO-VENTING MONITORING REPORT #4

Dear Kristen and Carl,

The above attachment is the Semi-annual Bio-venting Monitoring Report #4 for the passive bio-venting and remediation project of the ULSD tanks (T-115/116) area. I have included the entire report as a "\*pdf" attachment above. If you should have any questions regarding this report, please either call me directly or via e-mail.

Regards,

Beck Larsen; CHMM, REM, RPG  
Environmental Engineer  
Western Refining- Gallup Refinery

## Chavez, Carl J, EMNRD

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Thursday, May 24, 2012 12:09 PM  
**To:** Ed.Riege@wnr.com  
**Subject:** Western Refining Southwest Refineries: GW-001 and AP-110

Ed:

FYI, the OCD is now logging spills/releases at refineries into its OCD Online system "Spills" (click [here](#)).

Please contact me if you have questions. Thank you.

xc: OCD Online "C-141s" thumbnail

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Department  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Drive, Santa Fe, New Mexico 87505  
Office: (505) 476-3490  
E-mail: [CarlJ.Chavez@State.NM.US](mailto:CarlJ.Chavez@State.NM.US)  
Website: <http://www.emnrd.state.nm.us/oed/>

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## Chavez, Carl J, EMNRD

---

**From:** Larsen, Thurman [Thurman.Larsen@wnr.com]  
**Sent:** Monday, April 16, 2012 6:46 AM  
**To:** Chavez, Carl J, EMNRD; Powell, Brandon, EMNRD  
**Cc:** VanHorn, Kristen, NMENV  
**Subject:** RE: API Overflow- 4/12/2012

As a normal procedure, I will send a C-141 to the Agencies that will show more detail.

The API is in a normal working condition. The overflow was due to the benzene pump issue. When the benzene pump going to the benzene strippers stopped operating due to the flapper valve, there was no flow out of the API. This caused the flow in to exceed the flow out causing the API to overflow from the standpipes on top.

---

**From:** Chavez, Carl J, EMNRD [<mailto:CarlJ.Chavez@state.nm.us>]  
**Sent:** Friday, April 13, 2012 1:24 PM  
**To:** Larsen, Thurman; Powell, Brandon, EMNRD  
**Cc:** VanHorn, Kristen, NMENV  
**Subject:** RE: API Overflow- 4/12/2012

Mr. Larsen:

Please provide a C-141 to the OCD and NMED with more details.

Is the New API Unit repaired and in working condition or is it operating with leakage? Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3490  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)

Website: <http://www.emnrd.state.nm.us/oed/>

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<http://www.emnrd.state.nm.us/oed/environmental.htm#environmental>)

---

**From:** Larsen, Thurman [<mailto:Thurman.Larsen@wnr.com>]  
**Sent:** Friday, April 13, 2012 12:58 PM  
**To:** Powell, Brandon, EMNRD  
**Cc:** Chavez, Carl J, EMNRD; VanHorn, Kristen, NMENV  
**Subject:** API Overflow- 4/12/2012

Brandon,

I left ER Notification messages with NMED Ms Ruth Horowitz at (12:12 PM) and a courtesy msg with Ms Kristen Van Horn at (12:28).

I also left an ER Notification message OCD (Brandon Powell) at (12:34) and a Courtesy msg with Mr Carl Chavez at (12:38).

The following is a brief summary of an incident that occurred yesterday, April 12, 2012 at 13:30 hrs.

On 4/12/2012 at about 13:30 hrs, the API Overflowed from the spouts from each bay. This was due to a flapper came off of a check valve the is connected to the benzene pumps. When the flapper came loose and the pump failed, the API flow in exceeded the maximum design flow of the API causing oily wastewater to come out of the API spouts. The wastewater was contained in an area located surrounding the API. The on-site Vacuum truck immediately began to remove the wastewater. It was estimated that there was approximately 17 bbl (715 gal) of oily API wastewater released. Approximately 17 blls of this oily wastewater has been cleaned up.

If you need to contact me in regards this incident, please contact me at (505) 722-0258 or via my cell (505) 862-1749.  
Regards,

Beck Larsen  
Western Refining (Gallup Refinery)

## Chavez, Carl J, EMNRD

---

**From:** Larsen, Thurman [Thurman.Larsen@wnr.com]  
**Sent:** Monday, April 16, 2012 10:09 AM  
**To:** VanHorn, Kristen, NMENV; Cobrain, Dave, NMENV; Chavez, Carl J, EMNRD  
**Subject:** API OVERFLOW on 4-12-2012  
**Attachments:** API OF 041212 C-141 Init.pdf

Dear Kristen, et all.

The following is the C-141 for the API Overflow that occurred on April 12, 2012. If you should have any questions regarding this matter, please don't hesitate to call me at (505) 722-0258 or via e-mail.

Regards,  
Beck Larsen

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised October 10, 2003

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

**Release Notification and Corrective Action**

**OPERATOR**

☒ Initial Report ☐ Final Report

Name of Company: Western Refining	Contact: Beck Larsen
Address 1-40 / Exit 39, Jamestown, NM 87347	Telephone No: (505) 722-0258
Facility Name: Western Refining (Gallup)	Facility Type: Petroleum Refinery

Surface Owner:	Mineral Owner:	Lease No.
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**LOCATION OF RELEASE**

Unit Letter	Section 28	Township 15 N	Range 15 W	Feet from the	North/South Line	Feet from the	East/West Line	County McKinley
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Latitude 35° 29' 022" Longitude 108° 24' 024"

**NATURE OF RELEASE**

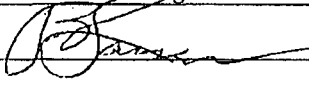
Type of Release API Wastewater	Volume of Release ~17 bbls (est 715 gal) (oily water w/slight sheen)	Volume Recovered ~17 bbls (est 715 gal) (oily wastewater/ slight sheen)
Source of Release: API Overflow	Date and Hour of Occurrence 4/12/2012; 1330 hrs (1:30 PM)	Date and Hour of Discovery 10/02/2011; 1540 hrs (3:40 PM)
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Ruth Horowitz, NMED HWB (Msg @ 4/13/2012, 12:25 hrs) Kristen Van Horn, NMED HWB (Msg @4/13/2012, 12:28 hrs) Brandon Powell, NMED HWB (telephone @4/13/2012, 12:34 hrs) Carl J Chavez, OCD (Msg @4/13/2012, 12:38 hrs)	
By Whom? Beck Larsen	Date and Hour NMED (HWB, (Msgs 4/13/2012 @ 1225; 1228 hrs) OCD (telephone 4/13/2012 @ 12:34 hrs; Msg 4/13/2012 @ 12:28 hrs)	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully. \* N/A

Describe Cause of Problem and Remedial Action Taken. \* At the time, the new API was operating properly with no issues. At 1:30PM on 4/12/2012, the flapper came off the check valve causing the benzene pump to fail. The pump failure cause the API to back up where the flow out of the API (Q~0 gpm) was much less than the flow in (Qmax=500 gpm). API Wastewater overflowed from the API spouts on each bay onto the ground.

Describe Area Affected and Cleanup Action Taken. \* Immediately after the flapper came off of the check valve causing the benzene pump to fail causing the API to overflow, a second pump was put online. It was estimated that about 17 bbls of oily wastewater overflowed from the new API area to the ground to several depression areas near the API. The onsite vacuum truck was immediately dispatched to cleanup the oily wastewater. All wastewater was removed by about 17:00 hrs (4/12/2012). The wastewater only had an oily sheen with no measurable quantity on oil in the wastewater. Remediation is in progress near the new API and affected areas in order to cleanup the contaminate soil.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOC rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOC marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOC acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	<b>OIL CONSERVATION DIVISION</b>		
Printed Name: Beck Larsen	Approved by District Supervisor:		
Title: Environmental Engineer	Approval Date:	Expiration Date:	
E-mail Address: Thurman.larsen@wnr.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 4/16/2012	Phone: (505) 722-0258		

\* Attach Additional Sheets If Necessary

## Chavez, Carl J, EMNRD

---

**From:** Chavez, Carl J, EMNRD  
**Sent:** Friday, April 13, 2012 1:24 PM  
**To:** 'Larsen, Thurman'; Powell, Brandon, EMNRD  
**Cc:** VanHorn, Kristen, NMENV  
**Subject:** RE: API Overflow- 4/12/2012

Mr. Larsen:

Please provide a C-141 to the OCD and NMED with more details.

Is the New API Unit repaired and in working condition or is it operating with leakage? Thank you.

Carl J. Chavez, CHMM  
New Mexico Energy, Minerals & Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Dr., Santa Fe, New Mexico 87505  
Office: (505) 476-3490  
Fax: (505) 476-3462  
E-mail: [CarlJ.Chavez@state.nm.us](mailto:CarlJ.Chavez@state.nm.us)

Website: <http://www.emnrd.state.nm.us/ocd/>

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<http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental>)

---

**From:** Larsen, Thurman [<mailto:Thurman.Larsen@wnr.com>]

**Sent:** Friday, April 13, 2012 12:58 PM

**To:** Powell, Brandon, EMNRD

**Cc:** Chavez, Carl J, EMNRD; VanHorn, Kristen, NMENV

**Subject:** API Overflow- 4/12/2012

Brandon,

I left ER Notification messages with NMED Ms Ruth Horowitz at (12:12 PM) and a courtesy msg with Ms Kristen Van Horn at (12:28).

I also left an ER Notification message OCD (Brandon Powell) at (12:34) and a Courtesy msg with Mr Carl Chavez at (12:38).

The following is a brief summary of an incident that occurred yesterday, April 12, 2012 at 13:30 hrs.

On 4/12/2012 at about 13:30 hrs, the API Overflowed from the spouts from each bay. This was due to a flapper came off of a check valve the is connected to the benzene pumps. When the flapper came loose and the pump failed, the API flow in exceeded the maximum design flow of the API causing oily wastewater to come out of the API spouts. The wastewater was contained in an area located surrounding the API. The on-site Vacuum truck immediately began to remove the wastewater. It was estimated that there was approximately 17 bbl (715 gal) of oily API wastewater released. Approximately 17 bls of this oily wastewater has been cleaned up.

If you need to contact me in regards this incident, please contact me at (505) 722-0258 or via my cell (505) 862-1749.

Regards,

Beck Larsen





District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Form C-141  
Revised August 8, 2011

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Submit 1 Copy to appropriate District Office in  
accordance with 19.15.29 NMAC.

## Release Notification and Corrective Action

### OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: WESTERN REFINING	Contact: Beck Larsen	
Address: I-40 / EXIT 39, JAMESTOWN, NM 87347	Telephone No. (505) 722-0258	
Facility Name: WESTERN RENINING (GALLUP REFINERY)	Facility Type: Petroleum Refinery	
Surface Owner	Mineral Owner	API No.

### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	28	15 N	15 W					MCKINLEY

Latitude 35° 029' 13.2" Longitude 108° 025' 28.4"

### NATURE OF RELEASE

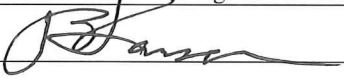
Type of Release: FCC Feed	Volume of Release 50 bbls	Volume Recovery Estimated at 50 bbls
Source of Release: Open Bleeder Valve at T-703 Suction Pump	Date and Hour of Occurrence 02/07/15 @ 1100 hrs	Date and Hour of Discovery 02/07/15 @ 1100 hrs
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? OCD (B. Powell/ C. Chavez); NMED (R Horowitz/K. Vanhorn); NM St Police	
By Whom? Beck Larsen	Date and Hour: 2/7/15- (1418, 1418); (1408, 1411); 1405	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.\* No (Area of spill was localized inside T-703 dike area.)

Describe Cause of Problem and Remedial Action Taken.\* On February 7, 2015, T-703 suction valve and the FCC/RRR loading pump bleeder valve was left open allowing FCC Feed to flow out of the Sample valve onto the ground. The FCC Feed was contained within an earthen dike in the tank farm. Spill Coordinates: are approximately Lat: 35 deg 29'13.2" N, Long: 108 deg 25'28.4" W. Initial cleanup was initiated immediately using onsite vacuum trucks and contract labor. Additional contract personnel were dispatched to begin a more extensive clean up operations on 2/8/2015. Cleanup was completed after 16 non-consecutive days and finalized on 5/8/2015.

Describe Area Affected and Cleanup Action Taken.\* The affected area was about 140 feet long by 20-30 feet wide (estimated) underneath the center pipe rack in the Hot Oil Tank Farm near Tank T-703 inside an earthen dike. Lat: 35 deg 29'13.2" N, Long: 108 deg 25'28.4" W. Initial soil samples were collected on 3/10/2015 under # 1503615 in order to determine the extent of contamination. (see attached analytical) The FCC material was removed via super- sucker and by manual labor with shovels. The material was put into roll-off boxes for disposal. Confirmation samples were collected on 7/9/2015 under Lab# 1507492. (see attached analytical) The project of spill cleanup is completed. Initial analysis revealed that this material is characteristically non-hazardous and is classified as Total Petroleum Hydrocarbon (TPH) or Petroleum Contaminated Soil (PCS). This contaminated soil was transported offsite on June 3 and 4 to a non-hazardous landfill (NM Solid Waste Authority, Redrock Facility) in Thoreau, NM. Approximately 84 tons (~69 yd<sup>3</sup>) of TPH material was removed. (Photos attached)

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Beck Larsen	Approved by Environmental Specialist:	
Title: Environmental Engineer	Approval Date:	Expiration Date:
E-mail Address: thurman.larsen@wnr.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 08/27/2015 Phone: (505) 722-0258		

\* Attach Additional Sheets If Necessary











District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in  
accordance with 19.15.29 NMAC.

## Release Notification and Corrective Action

### OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: WESTERN REFINING	Contact: Beck Larsen	
Address: I-40 / EXIT 39, JAMESTOWN, NM 87347	Telephone No. (505) 722-0258	
Facility Name: WESTERN RENINING (GALLUP REFINERY)	Facility Type: Petroleum Refinery	
Surface Owner	Mineral Owner	API No.

### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	28	15 N	15 W					MCKINLEY

Latitude 35° 029' 024" Longitude 108° 024' 024"

### NATURE OF RELEASE

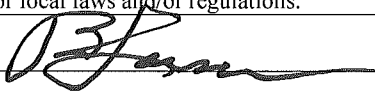
Type of Release: FCC Feed	Volume of Release 50 bbls	Volume Recovered: Pending
Source of Release: Open Bleeder Valve at T-703 Suction Pump	Date and Hour of Occurrence 02/07/15 @ 1100 hrs	Date and Hour of Discovery 02/07/15 @ 1100 hrs
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? OCD (B. Powell/ C. Chavez); NMED (R Horowitz/K. Vanhorn); NM St Police	
By Whom? Beck Larsen	Date and Hour: 2/7/15- (1418, 1418); (1408, 1411); 1405	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.\* No

Describe Cause of Problem and Remedial Action Taken.\* At about 1100 hrs, offsite operators opened the T-703 suction valve and the FCC/RRR loading pump valve. The bleeder to T-703 suction side was left open. The pump was turned on allowing FCC Feed to flow out of the Sample valve onto the ground. The FCC Feed was contained earthen dike in the tank farm. The onsite vacuum truck was dispatched. The Environment depart (On-call) was notified. Environmental personnel arrived at 1230 hrs. A remediation plan was discussed. Agency personnel were notified as indicated above. Contractor cleanup personnel were notified. Contractor personnel and equipment arrived on scene on Sunday, February 8, and began to remove the material via shovels and a super-sucker vacuum truck. Cleanup is in progress. Spill Coordinates: are approximately Lat: 35 deg 29'13.2" N, Long: 108 deg 25'28.4" W. There were no injuries or fires that occurred during the incident.

Describe Area Affected and Cleanup Action Taken.\* The affected area was about 140 feet long by 20-30 feet wide (estimated) underneath the center pipe rack in the Hot Oil Tank Farm near Tank T-703. Lat: 35 deg 29'13.2" N, Long: 108 deg 25'28.4" W. The FCC material congeals and will have to be removed via super- sucker and via manual labor. The material will have to be dug using shovel and put into drums or a roll-off box. Once the FCC material is properly removed, initial soil samples will be collected so as to determine the extent of contamination; however, due to the age of the refinery and from past practices, a proper clean up standard will be difficult to ascertain.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	<u>OIL CONSERVATION DIVISION</u>		
Printed Name: Beck Larsen	Approved by Environmental Specialist:		
Title: Environmental Engineer	Approval Date:	Expiration Date:	
E-mail Address: thurman.larsen@wnr.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 02/13/20145	Phone: (505) 722-0258		

\* Attach Additional Sheets If Necessary

**Chavez, Carl J, EMNRD**

---

**From:** Larsen, Thurman <Thurman.Larsen@wnr.com>  
**Sent:** Thursday, August 27, 2015 2:49 PM  
**To:** Chavez, Carl J, EMNRD; VanHorn, Kristen, NMENV; Cobrain, Dave, NMENV  
**Cc:** Riege, Ed  
**Subject:** FCC SPILL 020715 FINAL REPORT (1 of 2)  
**Attachments:** C-141 FINAL FCC FEED 020715.pdf; FCC SPILL C-141 Initial 020715.pdf; Rpt\_1503615\_Final\_v1.pdf; Rpt\_1507492\_Final.pdf

Carl and Kristen,

The above attachments (part 1 of 2) are the final report for the FCC Spill that occurred on February 7, 2015. Please let me know if you should require any additional assistance. I can be reached at either of the numbers listed below.

Regards,

Beck Larsen  
Environmental Engineer  
Western Refining Southwest (Gallup Refinery)  
92 Giant Crossing Road - New Mailing Address  
Gallup, NM 87301  
Office: (505) 722-0258  
cell: (505) 862-1749



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

March 20, 2015

Beck Larsen

Western Refining Southwest, Gallup  
92 Giant Crossing Road  
Gallup, NM 87301  
TEL: (505) 722-0258  
FAX (505) 722-0210

RE: Hot Oil Tank Area Spill

OrderNo.: 1503615

Dear Beck Larsen:

Hall Environmental Analysis Laboratory received 7 sample(s) on 3/13/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1503615**

Date Reported: **3/20/2015**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Sample Location #1

**Project:** Hot Oil Tank Area Spill

**Collection Date:** 3/10/2015 10:30:00 AM

**Lab ID:** 1503615-001

**Matrix:** SOIL

**Received Date:** 3/13/2015 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>					Analyst: <b>JME</b>		
Diesel Range Organics (DRO)	28000	4900		mg/Kg	500	3/18/2015 8:51:36 AM	18142
Motor Oil Range Organics (MRO)	44000	25000		mg/Kg	500	3/18/2015 8:51:36 AM	18142
Surr: DNOP	0	63.5-128	S	%REC	500	3/18/2015 8:51:36 AM	18142
<b>EPA METHOD 8015D: GASOLINE RANGE</b>					Analyst: <b>NSB</b>		
Gasoline Range Organics (GRO)	28	24		mg/Kg	5	3/17/2015 3:50:03 PM	18158
Surr: BFB	115	80-120		%REC	5	3/17/2015 3:50:03 PM	18158
<b>EPA METHOD 7471: MERCURY</b>					Analyst: <b>MED</b>		
Mercury	ND	0.033		mg/Kg	1	3/18/2015 3:34:30 PM	18175
<b>EPA METHOD 6010B: SOIL METALS</b>					Analyst: <b>ELS</b>		
Arsenic	ND	2.6		mg/Kg	1	3/18/2015 2:28:29 PM	18174
Barium	230	0.10		mg/Kg	1	3/18/2015 2:28:29 PM	18174
Cadmium	0.20	0.10		mg/Kg	1	3/18/2015 2:28:29 PM	18174
Chromium	12	0.31		mg/Kg	1	3/18/2015 2:28:29 PM	18174
Lead	13	0.26		mg/Kg	1	3/18/2015 2:28:29 PM	18174
Selenium	ND	2.6		mg/Kg	1	3/18/2015 2:28:29 PM	18174
Silver	ND	0.26		mg/Kg	1	3/18/2015 2:28:29 PM	18174
<b>EPA METHOD 8260B: VOLATILES</b>					Analyst: <b>cadg</b>		
Benzene	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
Toluene	0.55	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
Ethylbenzene	0.29	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
Methyl tert-butyl ether (MTBE)	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
1,2,4-Trimethylbenzene	1.3	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
1,3,5-Trimethylbenzene	0.35	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
1,2-Dichloroethane (EDC)	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
1,2-Dibromoethane (EDB)	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
Naphthalene	1.0	0.48		mg/Kg	5	3/17/2015 3:45:30 PM	18158
1-Methylnaphthalene	3.5	0.97		mg/Kg	5	3/17/2015 3:45:30 PM	18158
2-Methylnaphthalene	4.8	0.97		mg/Kg	5	3/17/2015 3:45:30 PM	18158
Acetone	ND	3.6		mg/Kg	5	3/17/2015 3:45:30 PM	18158
Bromobenzene	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
Bromodichloromethane	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
Bromoform	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
Bromomethane	ND	0.73		mg/Kg	5	3/17/2015 3:45:30 PM	18158
2-Butanone	ND	2.4		mg/Kg	5	3/17/2015 3:45:30 PM	18158
Carbon disulfide	ND	2.4		mg/Kg	5	3/17/2015 3:45:30 PM	18158
Carbon tetrachloride	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
Chlorobenzene	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 1 of 27
	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	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1503615**

Date Reported: **3/20/2015**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Sample Location #1

**Project:** Hot Oil Tank Area Spill

**Collection Date:** 3/10/2015 10:30:00 AM

**Lab ID:** 1503615-001

**Matrix:** SOIL

**Received Date:** 3/13/2015 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: <b>cadg</b>
Chloroethane	ND	0.48		mg/Kg	5	3/17/2015 3:45:30 PM	18158
Chloroform	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
Chloromethane	ND	0.73		mg/Kg	5	3/17/2015 3:45:30 PM	18158
2-Chlorotoluene	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
4-Chlorotoluene	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
cis-1,2-DCE	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
cis-1,3-Dichloropropene	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
1,2-Dibromo-3-chloropropane	ND	0.48		mg/Kg	5	3/17/2015 3:45:30 PM	18158
Dibromochloromethane	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
Dibromomethane	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
1,2-Dichlorobenzene	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
1,3-Dichlorobenzene	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
1,4-Dichlorobenzene	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
Dichlorodifluoromethane	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
1,1-Dichloroethane	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
1,1-Dichloroethene	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
1,2-Dichloropropane	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
1,3-Dichloropropane	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
2,2-Dichloropropane	ND	0.48		mg/Kg	5	3/17/2015 3:45:30 PM	18158
1,1-Dichloropropene	ND	0.48		mg/Kg	5	3/17/2015 3:45:30 PM	18158
Hexachlorobutadiene	ND	0.48		mg/Kg	5	3/17/2015 3:45:30 PM	18158
2-Hexanone	ND	2.4		mg/Kg	5	3/17/2015 3:45:30 PM	18158
Isopropylbenzene	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
4-Isopropyltoluene	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
4-Methyl-2-pentanone	ND	2.4		mg/Kg	5	3/17/2015 3:45:30 PM	18158
Methylene chloride	ND	0.73		mg/Kg	5	3/17/2015 3:45:30 PM	18158
n-Butylbenzene	ND	0.73		mg/Kg	5	3/17/2015 3:45:30 PM	18158
n-Propylbenzene	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
sec-Butylbenzene	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
Styrene	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
tert-Butylbenzene	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
1,1,1,2-Tetrachloroethane	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
1,1,2,2-Tetrachloroethane	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
Tetrachloroethene (PCE)	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
trans-1,2-DCE	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
trans-1,3-Dichloropropene	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
1,2,3-Trichlorobenzene	ND	0.48		mg/Kg	5	3/17/2015 3:45:30 PM	18158
1,2,4-Trichlorobenzene	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
1,1,1-Trichloroethane	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 2 of 27
	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	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1503615**

Date Reported: **3/20/2015**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Sample Location #1

**Project:** Hot Oil Tank Area Spill

**Collection Date:** 3/10/2015 10:30:00 AM

**Lab ID:** 1503615-001

**Matrix:** SOIL

**Received Date:** 3/13/2015 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: <b>cadg</b>
1,1,2-Trichloroethane	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
Trichloroethene (TCE)	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
Trichlorofluoromethane	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
1,2,3-Trichloropropane	ND	0.48		mg/Kg	5	3/17/2015 3:45:30 PM	18158
Vinyl chloride	ND	0.24		mg/Kg	5	3/17/2015 3:45:30 PM	18158
Xylenes, Total	1.9	0.48		mg/Kg	5	3/17/2015 3:45:30 PM	18158
Surr: Dibromofluoromethane	95.9	70-130		%REC	5	3/17/2015 3:45:30 PM	18158
Surr: 1,2-Dichloroethane-d4	93.2	70-130		%REC	5	3/17/2015 3:45:30 PM	18158
Surr: Toluene-d8	94.5	70-130		%REC	5	3/17/2015 3:45:30 PM	18158
Surr: 4-Bromofluorobenzene	90.0	70-130		%REC	5	3/17/2015 3:45:30 PM	18158

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 3 of 27
	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	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1503615**

Date Reported: **3/20/2015**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Sample Location #2

**Project:** Hot Oil Tank Area Spill

**Collection Date:** 3/10/2015 10:33:00 AM

**Lab ID:** 1503615-002

**Matrix:** SOIL

**Received Date:** 3/13/2015 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	13000	1000		mg/Kg	100	3/18/2015 9:34:38 AM	18142
Motor Oil Range Organics (MRO)	20000	5100		mg/Kg	100	3/18/2015 9:34:38 AM	18142
Surr: DNOP	0	63.5-128	S	%REC	100	3/18/2015 9:34:38 AM	18142
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	24		mg/Kg	5	3/17/2015 12:00:12 PM	18158
Surr: BFB	106	80-120		%REC	5	3/17/2015 12:00:12 PM	18158
<b>EPA METHOD 7471: MERCURY</b>							Analyst: <b>MED</b>
Mercury	ND	0.034		mg/Kg	1	3/18/2015 3:36:16 PM	18175
<b>EPA METHOD 6010B: SOIL METALS</b>							Analyst: <b>ELS</b>
Arsenic	3.6	2.5		mg/Kg	1	3/18/2015 2:32:32 PM	18174
Barium	220	0.098		mg/Kg	1	3/18/2015 2:32:32 PM	18174
Cadmium	0.44	0.098		mg/Kg	1	3/18/2015 2:32:32 PM	18174
Chromium	19	0.29		mg/Kg	1	3/18/2015 2:32:32 PM	18174
Lead	23	0.25		mg/Kg	1	3/18/2015 2:32:32 PM	18174
Selenium	ND	2.5		mg/Kg	1	3/18/2015 2:32:32 PM	18174
Silver	ND	0.25		mg/Kg	1	3/18/2015 2:32:32 PM	18174
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: <b>cadg</b>
Benzene	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
Toluene	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
Ethylbenzene	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
Methyl tert-butyl ether (MTBE)	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
1,2,4-Trimethylbenzene	0.85	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
1,3,5-Trimethylbenzene	0.27	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
1,2-Dichloroethane (EDC)	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
1,2-Dibromoethane (EDB)	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
Naphthalene	0.63	0.47		mg/Kg	5	3/17/2015 5:11:40 PM	18158
1-Methylnaphthalene	2.4	0.94		mg/Kg	5	3/17/2015 5:11:40 PM	18158
2-Methylnaphthalene	2.9	0.94		mg/Kg	5	3/17/2015 5:11:40 PM	18158
Acetone	ND	3.5		mg/Kg	5	3/17/2015 5:11:40 PM	18158
Bromobenzene	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
Bromodichloromethane	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
Bromoform	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
Bromomethane	ND	0.71		mg/Kg	5	3/17/2015 5:11:40 PM	18158
2-Butanone	ND	2.4		mg/Kg	5	3/17/2015 5:11:40 PM	18158
Carbon disulfide	ND	2.4		mg/Kg	5	3/17/2015 5:11:40 PM	18158
Carbon tetrachloride	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
Chlorobenzene	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1503615

Date Reported: 3/20/2015

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Sample Location #2

**Project:** Hot Oil Tank Area Spill

**Collection Date:** 3/10/2015 10:33:00 AM

**Lab ID:** 1503615-002

**Matrix:** SOIL

**Received Date:** 3/13/2015 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Chloroethane	ND	0.47		mg/Kg	5	3/17/2015 5:11:40 PM	18158
Chloroform	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
Chloromethane	ND	0.71		mg/Kg	5	3/17/2015 5:11:40 PM	18158
2-Chlorotoluene	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
4-Chlorotoluene	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
cis-1,2-DCE	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
cis-1,3-Dichloropropene	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
1,2-Dibromo-3-chloropropane	ND	0.47		mg/Kg	5	3/17/2015 5:11:40 PM	18158
Dibromochloromethane	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
Dibromomethane	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
1,2-Dichlorobenzene	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
1,3-Dichlorobenzene	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
1,4-Dichlorobenzene	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
Dichlorodifluoromethane	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
1,1-Dichloroethane	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
1,1-Dichloroethene	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
1,2-Dichloropropane	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
1,3-Dichloropropane	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
2,2-Dichloropropane	ND	0.47		mg/Kg	5	3/17/2015 5:11:40 PM	18158
1,1-Dichloropropene	ND	0.47		mg/Kg	5	3/17/2015 5:11:40 PM	18158
Hexachlorobutadiene	ND	0.47		mg/Kg	5	3/17/2015 5:11:40 PM	18158
2-Hexanone	ND	2.4		mg/Kg	5	3/17/2015 5:11:40 PM	18158
Isopropylbenzene	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
4-Isopropyltoluene	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
4-Methyl-2-pentanone	ND	2.4		mg/Kg	5	3/17/2015 5:11:40 PM	18158
Methylene chloride	ND	0.71		mg/Kg	5	3/17/2015 5:11:40 PM	18158
n-Butylbenzene	ND	0.71		mg/Kg	5	3/17/2015 5:11:40 PM	18158
n-Propylbenzene	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
sec-Butylbenzene	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
Styrene	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
tert-Butylbenzene	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
1,1,1,2-Tetrachloroethane	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
1,1,2,2-Tetrachloroethane	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
Tetrachloroethene (PCE)	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
trans-1,2-DCE	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
trans-1,3-Dichloropropene	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
1,2,3-Trichlorobenzene	ND	0.47		mg/Kg	5	3/17/2015 5:11:40 PM	18158
1,2,4-Trichlorobenzene	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
1,1,1-Trichloroethane	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 5 of 27
	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	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1503615**

Date Reported: **3/20/2015**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Sample Location #2

**Project:** Hot Oil Tank Area Spill

**Collection Date:** 3/10/2015 10:33:00 AM

**Lab ID:** 1503615-002

**Matrix:** SOIL

**Received Date:** 3/13/2015 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: <b>cadg</b>
1,1,2-Trichloroethane	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
Trichloroethene (TCE)	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
Trichlorofluoromethane	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
1,2,3-Trichloropropane	ND	0.47		mg/Kg	5	3/17/2015 5:11:40 PM	18158
Vinyl chloride	ND	0.24		mg/Kg	5	3/17/2015 5:11:40 PM	18158
Xylenes, Total	0.90	0.47		mg/Kg	5	3/17/2015 5:11:40 PM	18158
Surr: Dibromofluoromethane	92.5	70-130		%REC	5	3/17/2015 5:11:40 PM	18158
Surr: 1,2-Dichloroethane-d4	90.9	70-130		%REC	5	3/17/2015 5:11:40 PM	18158
Surr: Toluene-d8	95.6	70-130		%REC	5	3/17/2015 5:11:40 PM	18158
Surr: 4-Bromofluorobenzene	87.4	70-130		%REC	5	3/17/2015 5:11:40 PM	18158

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 6 of 27
	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	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1503615**

Date Reported: **3/20/2015**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Sample Location #3

**Project:** Hot Oil Tank Area Spill

**Collection Date:** 3/10/2015 10:37:00 AM

**Lab ID:** 1503615-003

**Matrix:** SOIL

**Received Date:** 3/13/2015 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	37000	5000		mg/Kg	500	3/18/2015 9:56:13 AM	18142
Motor Oil Range Organics (MRO)	60000	25000		mg/Kg	500	3/18/2015 9:56:13 AM	18142
Surr: DNOP	0	63.5-128	S	%REC	500	3/18/2015 9:56:13 AM	18142
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	130	48		mg/Kg	10	3/17/2015 4:18:48 PM	18158
Surr: BFB	148	80-120	S	%REC	10	3/17/2015 4:18:48 PM	18158
<b>EPA METHOD 7471: MERCURY</b>							Analyst: <b>MED</b>
Mercury	ND	0.035		mg/Kg	1	3/18/2015 3:38:02 PM	18175
<b>EPA METHOD 6010B: SOIL METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	2.6		mg/Kg	1	3/18/2015 2:36:49 PM	18174
Barium	210	0.10		mg/Kg	1	3/18/2015 2:36:49 PM	18174
Cadmium	0.42	0.10		mg/Kg	1	3/18/2015 2:36:49 PM	18174
Chromium	10	0.31		mg/Kg	1	3/18/2015 2:36:49 PM	18174
Lead	16	0.26		mg/Kg	1	3/18/2015 2:36:49 PM	18174
Selenium	ND	2.6		mg/Kg	1	3/18/2015 2:36:49 PM	18174
Silver	ND	0.26		mg/Kg	1	3/18/2015 2:36:49 PM	18174
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: <b>cadg</b>
Benzene	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
Toluene	3.2	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
Ethylbenzene	1.7	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
Methyl tert-butyl ether (MTBE)	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
1,2,4-Trimethylbenzene	5.1	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
1,3,5-Trimethylbenzene	1.5	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
1,2-Dichloroethane (EDC)	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
1,2-Dibromoethane (EDB)	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
Naphthalene	3.7	0.96		mg/Kg	10	3/17/2015 5:40:31 PM	18158
1-Methylnaphthalene	11	1.9		mg/Kg	10	3/17/2015 5:40:31 PM	18158
2-Methylnaphthalene	15	1.9		mg/Kg	10	3/17/2015 5:40:31 PM	18158
Acetone	ND	7.2		mg/Kg	10	3/17/2015 5:40:31 PM	18158
Bromobenzene	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
Bromodichloromethane	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
Bromoform	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
Bromomethane	ND	1.4		mg/Kg	10	3/17/2015 5:40:31 PM	18158
2-Butanone	ND	4.8		mg/Kg	10	3/17/2015 5:40:31 PM	18158
Carbon disulfide	ND	4.8		mg/Kg	10	3/17/2015 5:40:31 PM	18158
Carbon tetrachloride	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
Chlorobenzene	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1503615**

Date Reported: **3/20/2015**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Sample Location #3

**Project:** Hot Oil Tank Area Spill

**Collection Date:** 3/10/2015 10:37:00 AM

**Lab ID:** 1503615-003

**Matrix:** SOIL

**Received Date:** 3/13/2015 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: <b>cadg</b>
Chloroethane	ND	0.96		mg/Kg	10	3/17/2015 5:40:31 PM	18158
Chloroform	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
Chloromethane	ND	1.4		mg/Kg	10	3/17/2015 5:40:31 PM	18158
2-Chlorotoluene	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
4-Chlorotoluene	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
cis-1,2-DCE	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
cis-1,3-Dichloropropene	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
1,2-Dibromo-3-chloropropane	ND	0.96		mg/Kg	10	3/17/2015 5:40:31 PM	18158
Dibromochloromethane	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
Dibromomethane	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
1,2-Dichlorobenzene	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
1,3-Dichlorobenzene	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
1,4-Dichlorobenzene	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
Dichlorodifluoromethane	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
1,1-Dichloroethane	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
1,1-Dichloroethene	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
1,2-Dichloropropane	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
1,3-Dichloropropane	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
2,2-Dichloropropane	ND	0.96		mg/Kg	10	3/17/2015 5:40:31 PM	18158
1,1-Dichloropropene	ND	0.96		mg/Kg	10	3/17/2015 5:40:31 PM	18158
Hexachlorobutadiene	ND	0.96		mg/Kg	10	3/17/2015 5:40:31 PM	18158
2-Hexanone	ND	4.8		mg/Kg	10	3/17/2015 5:40:31 PM	18158
Isopropylbenzene	0.72	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
4-Isopropyltoluene	0.50	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
4-Methyl-2-pentanone	ND	4.8		mg/Kg	10	3/17/2015 5:40:31 PM	18158
Methylene chloride	ND	1.4		mg/Kg	10	3/17/2015 5:40:31 PM	18158
n-Butylbenzene	ND	1.4		mg/Kg	10	3/17/2015 5:40:31 PM	18158
n-Propylbenzene	1.0	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
sec-Butylbenzene	0.60	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
Styrene	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
tert-Butylbenzene	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
1,1,1,2-Tetrachloroethane	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
1,1,2,2-Tetrachloroethane	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
Tetrachloroethene (PCE)	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
trans-1,2-DCE	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
trans-1,3-Dichloropropene	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
1,2,3-Trichlorobenzene	ND	0.96		mg/Kg	10	3/17/2015 5:40:31 PM	18158
1,2,4-Trichlorobenzene	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
1,1,1-Trichloroethane	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 8 of 27
	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	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1503615**

Date Reported: **3/20/2015**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Sample Location #3

**Project:** Hot Oil Tank Area Spill

**Collection Date:** 3/10/2015 10:37:00 AM

**Lab ID:** 1503615-003

**Matrix:** SOIL

**Received Date:** 3/13/2015 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: <b>cadg</b>
1,1,2-Trichloroethane	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
Trichloroethene (TCE)	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
Trichlorofluoromethane	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
1,2,3-Trichloropropane	ND	0.96		mg/Kg	10	3/17/2015 5:40:31 PM	18158
Vinyl chloride	ND	0.48		mg/Kg	10	3/17/2015 5:40:31 PM	18158
Xylenes, Total	9.8	0.96		mg/Kg	10	3/17/2015 5:40:31 PM	18158
Surr: Dibromofluoromethane	96.4	70-130		%REC	10	3/17/2015 5:40:31 PM	18158
Surr: 1,2-Dichloroethane-d4	91.1	70-130		%REC	10	3/17/2015 5:40:31 PM	18158
Surr: Toluene-d8	93.5	70-130		%REC	10	3/17/2015 5:40:31 PM	18158
Surr: 4-Bromofluorobenzene	80.7	70-130		%REC	10	3/17/2015 5:40:31 PM	18158

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 9 of 27
	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	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1503615**

Date Reported: **3/20/2015**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Sample Location #4

**Project:** Hot Oil Tank Area Spill

**Collection Date:** 3/10/2015 10:40:00 AM

**Lab ID:** 1503615-004

**Matrix:** SOIL

**Received Date:** 3/13/2015 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	97000	12000		mg/Kg	1E	3/18/2015 1:36:09 AM	18142
Motor Oil Range Organics (MRO)	140000	62000		mg/Kg	1E	3/18/2015 1:36:09 AM	18142
Surr: DNOP	0	63.5-128	S	%REC	1E	3/18/2015 1:36:09 AM	18142
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	30	25		mg/Kg	5	3/17/2015 4:47:32 PM	18158
Surr: BFB	120	80-120		%REC	5	3/17/2015 4:47:32 PM	18158
<b>EPA METHOD 7471: MERCURY</b>							Analyst: <b>MED</b>
Mercury	ND	0.035		mg/Kg	1	3/18/2015 3:39:49 PM	18175
<b>EPA METHOD 6010B: SOIL METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	2.4		mg/Kg	1	3/18/2015 2:40:41 PM	18174
Barium	240	0.096		mg/Kg	1	3/18/2015 2:40:41 PM	18174
Cadmium	0.18	0.096		mg/Kg	1	3/18/2015 2:40:41 PM	18174
Chromium	6.6	0.29		mg/Kg	1	3/18/2015 2:40:41 PM	18174
Lead	5.6	0.24		mg/Kg	1	3/18/2015 2:40:41 PM	18174
Selenium	ND	2.4		mg/Kg	1	3/18/2015 2:40:41 PM	18174
Silver	ND	0.24		mg/Kg	1	3/18/2015 2:40:41 PM	18174
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: <b>cadg</b>
Benzene	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
Toluene	0.50	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
Ethylbenzene	0.31	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
Methyl tert-butyl ether (MTBE)	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
1,2,4-Trimethylbenzene	1.2	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
1,3,5-Trimethylbenzene	0.31	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
1,2-Dichloroethane (EDC)	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
1,2-Dibromoethane (EDB)	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
Naphthalene	1.1	0.49		mg/Kg	5	3/17/2015 6:09:15 PM	18158
1-Methylnaphthalene	5.4	0.99		mg/Kg	5	3/17/2015 6:09:15 PM	18158
2-Methylnaphthalene	7.2	0.99		mg/Kg	5	3/17/2015 6:09:15 PM	18158
Acetone	ND	3.7		mg/Kg	5	3/17/2015 6:09:15 PM	18158
Bromobenzene	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
Bromodichloromethane	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
Bromoform	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
Bromomethane	ND	0.74		mg/Kg	5	3/17/2015 6:09:15 PM	18158
2-Butanone	ND	2.5		mg/Kg	5	3/17/2015 6:09:15 PM	18158
Carbon disulfide	ND	2.5		mg/Kg	5	3/17/2015 6:09:15 PM	18158
Carbon tetrachloride	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
Chlorobenzene	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1503615

Date Reported: 3/20/2015

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Sample Location #4

**Project:** Hot Oil Tank Area Spill

**Collection Date:** 3/10/2015 10:40:00 AM

**Lab ID:** 1503615-004

**Matrix:** SOIL

**Received Date:** 3/13/2015 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Chloroethane	ND	0.49		mg/Kg	5	3/17/2015 6:09:15 PM	18158
Chloroform	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
Chloromethane	ND	0.74		mg/Kg	5	3/17/2015 6:09:15 PM	18158
2-Chlorotoluene	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
4-Chlorotoluene	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
cis-1,2-DCE	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
cis-1,3-Dichloropropene	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
1,2-Dibromo-3-chloropropane	ND	0.49		mg/Kg	5	3/17/2015 6:09:15 PM	18158
Dibromochloromethane	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
Dibromomethane	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
1,2-Dichlorobenzene	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
1,3-Dichlorobenzene	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
1,4-Dichlorobenzene	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
Dichlorodifluoromethane	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
1,1-Dichloroethane	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
1,1-Dichloroethene	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
1,2-Dichloropropane	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
1,3-Dichloropropane	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
2,2-Dichloropropane	ND	0.49		mg/Kg	5	3/17/2015 6:09:15 PM	18158
1,1-Dichloropropene	ND	0.49		mg/Kg	5	3/17/2015 6:09:15 PM	18158
Hexachlorobutadiene	ND	0.49		mg/Kg	5	3/17/2015 6:09:15 PM	18158
2-Hexanone	ND	2.5		mg/Kg	5	3/17/2015 6:09:15 PM	18158
Isopropylbenzene	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
4-Isopropyltoluene	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
4-Methyl-2-pentanone	ND	2.5		mg/Kg	5	3/17/2015 6:09:15 PM	18158
Methylene chloride	ND	0.74		mg/Kg	5	3/17/2015 6:09:15 PM	18158
n-Butylbenzene	ND	0.74		mg/Kg	5	3/17/2015 6:09:15 PM	18158
n-Propylbenzene	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
sec-Butylbenzene	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
Styrene	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
tert-Butylbenzene	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
1,1,1,2-Tetrachloroethane	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
1,1,2,2-Tetrachloroethane	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
Tetrachloroethene (PCE)	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
trans-1,2-DCE	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
trans-1,3-Dichloropropene	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
1,2,3-Trichlorobenzene	ND	0.49		mg/Kg	5	3/17/2015 6:09:15 PM	18158
1,2,4-Trichlorobenzene	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
1,1,1-Trichloroethane	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1503615**

Date Reported: **3/20/2015**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Sample Location #4

**Project:** Hot Oil Tank Area Spill

**Collection Date:** 3/10/2015 10:40:00 AM

**Lab ID:** 1503615-004

**Matrix:** SOIL

**Received Date:** 3/13/2015 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: <b>cadg</b>
1,1,2-Trichloroethane	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
Trichloroethene (TCE)	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
Trichlorofluoromethane	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
1,2,3-Trichloropropane	ND	0.49		mg/Kg	5	3/17/2015 6:09:15 PM	18158
Vinyl chloride	ND	0.25		mg/Kg	5	3/17/2015 6:09:15 PM	18158
Xylenes, Total	1.9	0.49		mg/Kg	5	3/17/2015 6:09:15 PM	18158
Surr: Dibromofluoromethane	97.6	70-130		%REC	5	3/17/2015 6:09:15 PM	18158
Surr: 1,2-Dichloroethane-d4	94.1	70-130		%REC	5	3/17/2015 6:09:15 PM	18158
Surr: Toluene-d8	93.0	70-130		%REC	5	3/17/2015 6:09:15 PM	18158
Surr: 4-Bromofluorobenzene	84.0	70-130		%REC	5	3/17/2015 6:09:15 PM	18158

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 12 of 27
	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	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1503615**

Date Reported: **3/20/2015**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Sample Location #5

**Project:** Hot Oil Tank Area Spill

**Collection Date:** 3/10/2015 10:45:00 AM

**Lab ID:** 1503615-005

**Matrix:** SOIL

**Received Date:** 3/13/2015 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	74000	10000		mg/Kg	1E	3/18/2015 2:18:30 AM	18142
Motor Oil Range Organics (MRO)	110000	51000		mg/Kg	1E	3/18/2015 2:18:30 AM	18142
Surr: DNOP	0	63.5-128	S	%REC	1E	3/18/2015 2:18:30 AM	18142
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	24		mg/Kg	5	3/17/2015 3:21:16 PM	18158
Surr: BFB	114	80-120		%REC	5	3/17/2015 3:21:16 PM	18158
<b>EPA METHOD 7471: MERCURY</b>							Analyst: <b>MED</b>
Mercury	ND	0.031		mg/Kg	1	3/18/2015 3:41:37 PM	18175
<b>EPA METHOD 6010B: SOIL METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	2.6		mg/Kg	1	3/18/2015 2:51:44 PM	18174
Barium	440	0.21		mg/Kg	2	3/18/2015 2:53:33 PM	18174
Cadmium	1.1	0.10		mg/Kg	1	3/18/2015 2:51:44 PM	18174
Chromium	9.5	0.31		mg/Kg	1	3/18/2015 2:51:44 PM	18174
Lead	14	0.26		mg/Kg	1	3/18/2015 2:51:44 PM	18174
Selenium	ND	2.6		mg/Kg	1	3/18/2015 2:51:44 PM	18174
Silver	ND	0.26		mg/Kg	1	3/18/2015 2:51:44 PM	18174
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: <b>cadg</b>
Benzene	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
Toluene	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
Ethylbenzene	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
Methyl tert-butyl ether (MTBE)	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
1,2,4-Trimethylbenzene	1.0	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
1,3,5-Trimethylbenzene	0.28	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
1,2-Dichloroethane (EDC)	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
1,2-Dibromoethane (EDB)	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
Naphthalene	1.1	0.47		mg/Kg	5	3/17/2015 6:37:54 PM	18158
1-Methylnaphthalene	4.7	0.94		mg/Kg	5	3/17/2015 6:37:54 PM	18158
2-Methylnaphthalene	5.8	0.94		mg/Kg	5	3/17/2015 6:37:54 PM	18158
Acetone	ND	3.5		mg/Kg	5	3/17/2015 6:37:54 PM	18158
Bromobenzene	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
Bromodichloromethane	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
Bromoform	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
Bromomethane	ND	0.71		mg/Kg	5	3/17/2015 6:37:54 PM	18158
2-Butanone	ND	2.4		mg/Kg	5	3/17/2015 6:37:54 PM	18158
Carbon disulfide	ND	2.4		mg/Kg	5	3/17/2015 6:37:54 PM	18158
Carbon tetrachloride	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
Chlorobenzene	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1503615

Date Reported: 3/20/2015

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Sample Location #5

**Project:** Hot Oil Tank Area Spill

**Collection Date:** 3/10/2015 10:45:00 AM

**Lab ID:** 1503615-005

**Matrix:** SOIL

**Received Date:** 3/13/2015 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Chloroethane	ND	0.47		mg/Kg	5	3/17/2015 6:37:54 PM	18158
Chloroform	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
Chloromethane	ND	0.71		mg/Kg	5	3/17/2015 6:37:54 PM	18158
2-Chlorotoluene	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
4-Chlorotoluene	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
cis-1,2-DCE	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
cis-1,3-Dichloropropene	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
1,2-Dibromo-3-chloropropane	ND	0.47		mg/Kg	5	3/17/2015 6:37:54 PM	18158
Dibromochloromethane	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
Dibromomethane	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
1,2-Dichlorobenzene	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
1,3-Dichlorobenzene	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
1,4-Dichlorobenzene	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
Dichlorodifluoromethane	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
1,1-Dichloroethane	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
1,1-Dichloroethene	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
1,2-Dichloropropane	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
1,3-Dichloropropane	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
2,2-Dichloropropane	ND	0.47		mg/Kg	5	3/17/2015 6:37:54 PM	18158
1,1-Dichloropropene	ND	0.47		mg/Kg	5	3/17/2015 6:37:54 PM	18158
Hexachlorobutadiene	ND	0.47		mg/Kg	5	3/17/2015 6:37:54 PM	18158
2-Hexanone	ND	2.4		mg/Kg	5	3/17/2015 6:37:54 PM	18158
Isopropylbenzene	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
4-Isopropyltoluene	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
4-Methyl-2-pentanone	ND	2.4		mg/Kg	5	3/17/2015 6:37:54 PM	18158
Methylene chloride	ND	0.71		mg/Kg	5	3/17/2015 6:37:54 PM	18158
n-Butylbenzene	ND	0.71		mg/Kg	5	3/17/2015 6:37:54 PM	18158
n-Propylbenzene	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
sec-Butylbenzene	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
Styrene	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
tert-Butylbenzene	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
1,1,1,2-Tetrachloroethane	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
1,1,2,2-Tetrachloroethane	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
Tetrachloroethene (PCE)	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
trans-1,2-DCE	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
trans-1,3-Dichloropropene	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
1,2,3-Trichlorobenzene	ND	0.47		mg/Kg	5	3/17/2015 6:37:54 PM	18158
1,2,4-Trichlorobenzene	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
1,1,1-Trichloroethane	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1503615**

Date Reported: **3/20/2015**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Sample Location #5

**Project:** Hot Oil Tank Area Spill

**Collection Date:** 3/10/2015 10:45:00 AM

**Lab ID:** 1503615-005

**Matrix:** SOIL

**Received Date:** 3/13/2015 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: <b>cadg</b>
1,1,2-Trichloroethane	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
Trichloroethene (TCE)	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
Trichlorofluoromethane	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
1,2,3-Trichloropropane	ND	0.47		mg/Kg	5	3/17/2015 6:37:54 PM	18158
Vinyl chloride	ND	0.24		mg/Kg	5	3/17/2015 6:37:54 PM	18158
Xylenes, Total	1.3	0.47		mg/Kg	5	3/17/2015 6:37:54 PM	18158
Surr: Dibromofluoromethane	99.6	70-130		%REC	5	3/17/2015 6:37:54 PM	18158
Surr: 1,2-Dichloroethane-d4	95.1	70-130		%REC	5	3/17/2015 6:37:54 PM	18158
Surr: Toluene-d8	91.5	70-130		%REC	5	3/17/2015 6:37:54 PM	18158
Surr: 4-Bromofluorobenzene	82.3	70-130		%REC	5	3/17/2015 6:37:54 PM	18158

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 15 of 27
	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	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1503615**Date Reported: **3/20/2015****CLIENT:** Western Refining Southwest, Gallup**Client Sample ID:** Roll Off Composite**Project:** Hot Oil Tank Area Spill**Collection Date:** 3/10/2015 11:15:00 AM**Lab ID:** 1503615-006**Matrix:** SOIL**Received Date:** 3/13/2015 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	57000	10000		mg/Kg	1E	3/18/2015 3:00:52 AM	18172
Motor Oil Range Organics (MRO)	89000	50000		mg/Kg	1E	3/18/2015 3:00:52 AM	18172
Surr: DNOP	0	63.5-128	S	%REC	1E	3/18/2015 3:00:52 AM	18172
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	92		mg/Kg	20	3/17/2015 5:16:13 PM	18158
Surr: BFB	105	80-120		%REC	20	3/17/2015 5:16:13 PM	18158
<b>MERCURY, TCLP</b>							Analyst: <b>MED</b>
Mercury	ND	0.020		mg/L	1	3/18/2015 3:02:07 PM	18195
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	5.0		mg/L	1	3/18/2015 2:06:01 PM	18186
Barium	ND	100		mg/L	1	3/18/2015 2:06:01 PM	18186
Cadmium	ND	1.0		mg/L	1	3/18/2015 2:06:01 PM	18186
Chromium	ND	5.0		mg/L	1	3/18/2015 2:06:01 PM	18186
Lead	ND	5.0		mg/L	1	3/18/2015 2:06:01 PM	18186
Selenium	ND	1.0		mg/L	1	3/18/2015 2:06:01 PM	18186
Silver	ND	5.0		mg/L	1	3/18/2015 2:06:01 PM	18186
<b>VOLATILES BY 8260B/1311</b>							Analyst: <b>cadg</b>
Benzene	ND	0.50		mg/L	1	3/17/2015 1:50:30 PM	18164
2-Butanone	ND	200		mg/L	1	3/17/2015 1:50:30 PM	18164
Carbon Tetrachloride	ND	0.50		mg/L	1	3/17/2015 1:50:30 PM	18164
Chlorobenzene	ND	100		mg/L	1	3/17/2015 1:50:30 PM	18164
Chloroform	ND	6.0		mg/L	1	3/17/2015 1:50:30 PM	18164
1,4-Dichlorobenzene	ND	7.5		mg/L	1	3/17/2015 1:50:30 PM	18164
1,2-Dichloroethane (EDC)	ND	0.50		mg/L	1	3/17/2015 1:50:30 PM	18164
1,1-Dichloroethene	ND	0.70		mg/L	1	3/17/2015 1:50:30 PM	18164
Hexachlorobutadiene	ND	0.50		mg/L	1	3/17/2015 1:50:30 PM	18164
Tetrachloroethene (PCE)	ND	0.70		mg/L	1	3/17/2015 1:50:30 PM	18164
Trichloroethene (TCE)	ND	0.50		mg/L	1	3/17/2015 1:50:30 PM	18164
Vinyl chloride	ND	0.20		mg/L	1	3/17/2015 1:50:30 PM	18164
Surr: 1,2-Dichloroethane-d4	91.6	70-130		%REC	1	3/17/2015 1:50:30 PM	18164
Surr: 4-Bromofluorobenzene	98.7	70-130		%REC	1	3/17/2015 1:50:30 PM	18164
Surr: Dibromofluoromethane	92.2	70-130		%REC	1	3/17/2015 1:50:30 PM	18164
Surr: Toluene-d8	94.0	70-130		%REC	1	3/17/2015 1:50:30 PM	18164

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.
	E Value above quantitation range
	J Analyte detected below quantitation limits
	O RSD is greater than RSDlimit
	R RPD outside accepted recovery limits
	S Spike Recovery outside accepted recovery limits

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
RL	Reporting Detection Limit

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# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1503615**

Date Reported: **3/20/2015**

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** Roll Off Composite

**Project:** Hot Oil Tank Area Spill

**Collection Date:** 3/10/2015 11:02:00 AM

**Lab ID:** 1503615-007

**Matrix:** SOIL

**Received Date:** 3/13/2015 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015D: DIESEL RANGE ORGANICS</b>							Analyst: <b>BCN</b>
Diesel Range Organics (DRO)	88000	10000		mg/Kg	1E	3/18/2015 3:43:08 AM	18172
Motor Oil Range Organics (MRO)	130000	50000		mg/Kg	1E	3/18/2015 3:43:08 AM	18172
Surr: DNOP	0	63.5-128	S	%REC	1E	3/18/2015 3:43:08 AM	18172
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	94		mg/Kg	20	3/17/2015 5:44:55 PM	18158
Surr: BFB	103	80-120		%REC	20	3/17/2015 5:44:55 PM	18158
<b>MERCURY, TCLP</b>							Analyst: <b>MED</b>
Mercury	ND	0.020		mg/L	1	3/18/2015 3:03:57 PM	18195
<b>EPA METHOD 6010B: TCLP METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	5.0		mg/L	1	3/18/2015 2:08:02 PM	18186
Barium	ND	100		mg/L	1	3/18/2015 2:08:02 PM	18186
Cadmium	ND	1.0		mg/L	1	3/18/2015 2:08:02 PM	18186
Chromium	ND	5.0		mg/L	1	3/18/2015 2:08:02 PM	18186
Lead	ND	5.0		mg/L	1	3/18/2015 2:08:02 PM	18186
Selenium	ND	1.0		mg/L	1	3/18/2015 2:08:02 PM	18186
Silver	ND	5.0		mg/L	1	3/18/2015 2:08:02 PM	18186
<b>VOLATILES BY 8260B/1311</b>							Analyst: <b>cadg</b>
Benzene	ND	0.50		mg/L	1	3/17/2015 2:19:12 PM	18164
2-Butanone	ND	200		mg/L	1	3/17/2015 2:19:12 PM	18164
Carbon Tetrachloride	ND	0.50		mg/L	1	3/17/2015 2:19:12 PM	18164
Chlorobenzene	ND	100		mg/L	1	3/17/2015 2:19:12 PM	18164
Chloroform	ND	6.0		mg/L	1	3/17/2015 2:19:12 PM	18164
1,4-Dichlorobenzene	ND	7.5		mg/L	1	3/17/2015 2:19:12 PM	18164
1,2-Dichloroethane (EDC)	ND	0.50		mg/L	1	3/17/2015 2:19:12 PM	18164
1,1-Dichloroethene	ND	0.70		mg/L	1	3/17/2015 2:19:12 PM	18164
Hexachlorobutadiene	ND	0.50		mg/L	1	3/17/2015 2:19:12 PM	18164
Tetrachloroethene (PCE)	ND	0.70		mg/L	1	3/17/2015 2:19:12 PM	18164
Trichloroethene (TCE)	ND	0.50		mg/L	1	3/17/2015 2:19:12 PM	18164
Vinyl chloride	ND	0.20		mg/L	1	3/17/2015 2:19:12 PM	18164
Surr: 1,2-Dichloroethane-d4	91.9	70-130		%REC	1	3/17/2015 2:19:12 PM	18164
Surr: 4-Bromofluorobenzene	97.8	70-130		%REC	1	3/17/2015 2:19:12 PM	18164
Surr: Dibromofluoromethane	97.4	70-130		%REC	1	3/17/2015 2:19:12 PM	18164
Surr: Toluene-d8	96.9	70-130		%REC	1	3/17/2015 2:19:12 PM	18164

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

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**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 150317021  
**Project Name:** 1503615

## Analytical Results Report

<b>Sample Number</b>	150317021-001	<b>Sampling Date</b>	3/10/2015	<b>Date/Time Received</b>	3/17/2015 11:42 AM
<b>Client Sample ID</b>	1503615-001B / SAMPLE LOCATION #1			<b>Sampling Time</b>	10:30 AM
<b>Matrix</b>	Soil	<b>Sample Location</b>			
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	0.231	3/19/2015	CRW	SW846 CH7	
Ignitability	Negative			3/18/2015	JWC	EPA 1030	
pH	8.04	ph Units		3/18/2015	KJS	EPA 9045	
Reactive sulfide	ND	mg/kg	23.1	3/19/2015	HSW	SW846 CH7	

<b>Sample Number</b>	150317021-002	<b>Sampling Date</b>	3/10/2015	<b>Date/Time Received</b>	3/17/2015 11:42 AM
<b>Client Sample ID</b>	1503615-002B / SAMPLE LOCATION #2			<b>Sampling Time</b>	10:33 AM
<b>Matrix</b>	Soil	<b>Sample Location</b>			
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	0.245	3/19/2015	CRW	SW846 CH7	
Ignitability	Negative			3/18/2015	JWC	EPA 1030	
pH	8.33	ph Units		3/18/2015	KJS	EPA 9045	
Reactive sulfide	ND	mg/kg	24.5	3/19/2015	HSW	SW846 CH7	

<b>Sample Number</b>	150317021-003	<b>Sampling Date</b>	3/10/2015	<b>Date/Time Received</b>	3/17/2015 11:42 AM
<b>Client Sample ID</b>	1503615-003B / SAMPLE LOCATION #3			<b>Sampling Time</b>	10:37 AM
<b>Matrix</b>	Soil	<b>Sample Location</b>			
<b>Comments</b>					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	0.236	3/19/2015	CRW	SW846 CH7	
Ignitability	Negative			3/18/2015	JWC	EPA 1030	
pH	8.40	ph Units		3/18/2015	KJS	EPA 9045	
Reactive sulfide	23.6	mg/kg	23.6	3/19/2015	HSW	SW846 CH7	



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**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 150317021  
**Project Name:** 1503615

## Analytical Results Report

Sample Number	150317021-004	Sampling Date	3/10/2015	Date/Time Received	3/17/2015	11:42 AM	
Client Sample ID	1503615-004B / SAMPLE LOCATION #4			Sampling Time	10:40 AM		
Matrix	Soil	Sample Location					
Comments							
Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	0.248	3/19/2015	CRW	SW846 CH7	
Ignitability	Negative			3/18/2015	JWC	EPA 1030	
pH	8.00	ph Units		3/18/2015	KJS	EPA 9045	
Reactive sulfide	ND	mg/kg	24.8	3/19/2015	HSW	SW846 CH7	

Sample Number	150317021-005	Sampling Date	3/10/2015	Date/Time Received	3/17/2015	11:42 AM	
Client Sample ID	1503615-005B / SAMPLE LOCATION #5			Sampling Time	10:45 AM		
Matrix	Soil	Sample Location					
Comments							
Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	0.248	3/19/2015	CRW	SW846 CH7	
Ignitability	Negative			3/18/2015	JWC	EPA 1030	
pH	8.26	ph Units		3/18/2015	KJS	EPA 9045	
Reactive sulfide	ND	mg/kg	24.8	3/19/2015	HSW	SW846 CH7	

Sample Number	150317021-006	Sampling Date	3/10/2015	Date/Time Received	3/17/2015	11:42 AM	
Client Sample ID	1503615-006B / ROLL OFF COMPOSITE			Sampling Time	11:15 AM		
Matrix	Soil	Sample Location					
Comments							
Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	0.252	3/19/2015	CRW	SW846 CH7	
Ignitability	Negative			3/18/2015	JWC	EPA 1030	
pH	7.89	ph Units		3/18/2015	KJS	EPA 9045	
Reactive sulfide	ND	mg/kg	31.5	3/19/2015	HSW	SW846 CH7	

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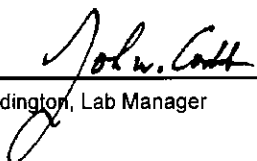
**Client:** HALL ENVIRONMENTAL ANALYSIS LAB  
**Address:** 4901 HAWKINS NE SUITE D  
ALBUQUERQUE, NM 87109  
**Attn:** ANDY FREEMAN

**Batch #:** 150317021  
**Project Name:** 1503615

## Analytical Results Report

Sample Number	150317021-007	Sampling Date	3/10/2015	Date/Time Received	3/17/2015	11:42 AM	
Client Sample ID	1503615-007B / ROLL OFF COMPOSITE			Sampling Time	11:02 AM		
Matrix	Soil	Sample Location					
Comments							
Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/Kg	0.226	3/19/2015	CRW	SW846 CH7	
Ignitability	Negative			3/18/2015	JWC	EPA 1030	
pH	7.40	ph Units		3/18/2015	KJS	EPA 9045	
Reactive sulfide	ND	mg/kg	22.6	3/19/2015	HSW	SW846 CH7	

Authorized Signature

  
John Coddington, Lab Manager

MCL EPA's Maximum Contaminant Level  
ND Not Detected  
PQL Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.  
The results reported relate only to the samples indicated.  
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

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**Attn:** ANDY FREEMAN

**Batch #:** 150317021  
**Project Name:** 1503615

## Analytical Results Report Quality Control Data

### Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Reactive sulfide	0.2	mg/kg	0.2	100.0	80-120	3/19/2015	3/19/2015
Cyanide (reactive)	0.487	mg/kg	0.5	97.4	70-130	3/19/2015	3/19/2015

### Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
150317021-003	Reactive sulfide	23.6	66.1	mg/kg	47.2	90.0	70-130	3/19/2015	3/19/2015
150317021-006	Cyanide (reactive)	ND	12.4	mg/kg	12.6	98.4	70-130	3/19/2015	3/19/2015

### Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Cyanide (reactive)	12.5	mg/kg	12.6	99.2	0.8	0-25	3/19/2015	3/19/2015

### Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Cyanide (reactive)	ND	mg/Kg	1	3/19/2015	3/19/2015
Reactive sulfide	ND	mg/kg	10	3/19/2015	3/19/2015

AR Acceptable Range  
ND Not Detected  
PQL Practical Quantitation Limit  
RPD Relative Percentage Difference

### Comments:

Certifications held by Anatek Labs ID: EPA-ID00013; AZ:0701; CO-ID00013; FL(NELAP):E87893; ID-ID00013; MT:CE00028; NM: ID00013; OR-ID200001-002; WA:C595  
Certifications held by Anatek Labs WA: EPA-WA00169; ID-WA00169; WA:C585; MT:CE00095; FL(NELAP): E871099

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1503615

20-Mar-15

Client: Western Refining Southwest, Gallup

Project: Hot Oil Tank Area Spill

Sample ID	MB-18172		SampType:	MBLK		TestCode:	EPA Method 8015D: Diesel Range Organics				
Client ID:	PBS		Batch ID:	18172		RunNo:	24861				
Prep Date:	3/17/2015		Analysis Date:	3/17/2015		SeqNo:	732781		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	ND	10									
Motor Oil Range Organics (MRO)	ND	50									
Surr: DNOP	11		10.00		113	63.5	128				

Sample ID	LCS-18172		SampType:	LCS		TestCode:	EPA Method 8015D: Diesel Range Organics				
Client ID:	LCSS		Batch ID:	18172		RunNo:	24861				
Prep Date:	3/17/2015		Analysis Date:	3/17/2015		SeqNo:	732873		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	47	10	50.00	0	93.8	67.8	130				
Surr: DNOP	4.9		5.000		97.4	63.5	128				

Sample ID	MB-18142		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 18142		RunNo: 24861					
Prep Date:	3/16/2015		Analysis Date: 3/17/2015		SeqNo: 733137		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		108	63.5	128			

Sample ID	LCS-18142		SampType:	LCS		TestCode:	EPA Method 8015D: Diesel Range Organics				
Client ID:	LCSS		Batch ID:	18142		RunNo:	24861				
Prep Date:	3/16/2015		Analysis Date:	3/17/2015		SeqNo:	733142		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	46	10	50.00	0	92.1	67.8	130				
Surr: DNOP	4.5		5.000		89.4	63.5	128				

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH Not In Range  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1503615

20-Mar-15

Client: Western Refining Southwest, Gallup

Project: Hot Oil Tank Area Spill

Sample ID	MB-18158		SampType:	MBLK		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	PBS		Batch ID:	18158		RunNo:	24877				
Prep Date:	3/16/2015		Analysis Date:	3/17/2015		SeqNo:	733166		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	ND	5.0									
Surr: BFB	920		1000		92.4	80	120				

Sample ID	LCS-18158		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 18158		RunNo: 24877					
Prep Date:	3/16/2015		Analysis Date: 3/17/2015		SeqNo: 733167		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	109	64	130			
Surr: BFB	1000		1000		101	80	120			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH Not In Range  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1503615

20-Mar-15

**Client:** Western Refining Southwest, Gallup**Project:** Hot Oil Tank Area Spill

Sample ID	<b>mb-18158</b>		SampType:	<b>MBLK</b>		TestCode:	<b>EPA Method 8260B: Volatiles</b>			
Client ID:	<b>PBS</b>		Batch ID:	<b>18158</b>		RunNo:	<b>24886</b>			
Prep Date:	<b>3/16/2015</b>		Analysis Date:	<b>3/17/2015</b>		SeqNo:	<b>733097</b>		Units: <b>mg/Kg</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH Not In Range  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1503615

20-Mar-15

**Client:** Western Refining Southwest, Gallup**Project:** Hot Oil Tank Area Spill

Sample ID	<b>mb-18158</b>		SampType:	<b>MBLK</b>		TestCode:	<b>EPA Method 8260B: Volatiles</b>			
Client ID:	<b>PBS</b>		Batch ID:	<b>18158</b>		RunNo:	<b>24886</b>			
Prep Date:	<b>3/16/2015</b>		Analysis Date:	<b>3/17/2015</b>		SeqNo:	<b>733097</b>		Units: <b>mg/Kg</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.49		0.5000		97.5	70	130			
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		92.4	70	130			
Surr: Toluene-d8	0.43		0.5000		85.9	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.4	70	130			

Sample ID	<b>lcs-18158</b>		SampType:	<b>LCS</b>		TestCode:	<b>EPA Method 8260B: Volatiles</b>			
Client ID:	<b>LCSS</b>		Batch ID:	<b>18158</b>		RunNo:	<b>24886</b>			
Prep Date:	<b>3/16/2015</b>		Analysis Date:	<b>3/17/2015</b>		SeqNo:	<b>733098</b>		Units: <b>mg/Kg</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.050	1.000	0	96.4	70	130			
Toluene	0.85	0.050	1.000	0	84.7	70	130			
Chlorobenzene	0.98	0.050	1.000	0	98.1	70	130			

### Qualifiers:

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E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH Not In Range  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1503615

20-Mar-15

Client: Western Refining Southwest, Gallup

Project: Hot Oil Tank Area Spill

Sample ID	Ics-18158		SampType: LCS		TestCode: EPA Method 8260B: Volatiles					
Client ID:	LCSS		Batch ID: 18158		RunNo: 24886					
Prep Date:	3/16/2015		Analysis Date: 3/17/2015		SeqNo: 733098		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.0	0.050	1.000	0	102	60.6	134			
Trichloroethene (TCE)	0.80	0.050	1.000	0	80.0	70	130			
Surr: Dibromofluoromethane	0.48		0.5000		96.9	70	130			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		93.5	70	130			
Surr: Toluene-d8	0.42		0.5000		84.5	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		96.6	70	130			

Sample ID	1503615-001ams		SampType: MS		TestCode: EPA Method 8260B: Volatiles					
Client ID:	Sample Location #1		Batch ID: 18158		RunNo: 24886					
Prep Date:	3/16/2015		Analysis Date: 3/17/2015		SeqNo: 733113		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.24	0.9653	0.04700	90.5	57.8	132			
Toluene	1.3	0.24	0.9653	0.5460	78.1	54.8	139			
Chlorobenzene	0.88	0.24	0.9653	0.02539	88.8	63.5	134			
1,1-Dichloroethene	0.98	0.24	0.9653	0.03430	97.6	26.4	145			
Trichloroethene (TCE)	0.72	0.24	0.9653	0	74.7	54.9	125			
Surr: Dibromofluoromethane	2.4		2.413		101	70	130			
Surr: 1,2-Dichloroethane-d4	2.3		2.413		94.8	70	130			
Surr: Toluene-d8	2.3		2.413		93.6	70	130			
Surr: 4-Bromofluorobenzene	2.0		2.413		83.5	70	130			

Sample ID	1503615-001amsd		SampType: MSD		TestCode: EPA Method 8260B: Volatiles					
Client ID:	Sample Location #1		Batch ID: 18158		RunNo: 24886					
Prep Date:	3/16/2015		Analysis Date: 3/17/2015		SeqNo: 733114		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.24	0.9671	0.04700	91.7	57.8	132	1.37	20	
Toluene	1.5	0.24	0.9671	0.5460	93.8	54.8	139	11.1	20	
Chlorobenzene	0.92	0.24	0.9671	0.02539	92.3	63.5	134	3.90	20	
1,1-Dichloroethene	0.97	0.24	0.9671	0.03430	97.1	26.4	145	0.332	20	
Trichloroethene (TCE)	0.70	0.24	0.9671	0	72.3	54.9	125	3.06	20	
Surr: Dibromofluoromethane	2.2		2.418		92.6	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	2.1		2.418		87.6	70	130	0	0	
Surr: Toluene-d8	2.3		2.418		95.5	70	130	0	0	
Surr: 4-Bromofluorobenzene	2.4		2.418		97.6	70	130	0	0	

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH Not In Range  
RL Reporting Detection Limit



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1503615

20-Mar-15

Client: Western Refining Southwest, Gallup

Project: Hot Oil Tank Area Spill

Sample ID	<b>mb-18164</b>		SampType:	<b>MBLK</b>		TestCode:	<b>Volatiles by 8260B/1311</b>			
Client ID:	<b>PBS</b>		Batch ID:	<b>18164</b>		RunNo:	<b>24886</b>			
Prep Date:	<b>3/16/2015</b>		Analysis Date:	<b>3/17/2015</b>		SeqNo:	<b>733314</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.50								
2-Butanone	ND	200								
Carbon Tetrachloride	ND	0.50								
Chlorobenzene	ND	100								
Chloroform	ND	6.0								
1,4-Dichlorobenzene	ND	7.5								
1,2-Dichloroethane (EDC)	ND	0.50								
1,1-Dichloroethene	ND	0.70								
Hexachlorobutadiene	ND	0.50								
Tetrachloroethene (PCE)	ND	0.70								
Trichloroethene (TCE)	ND	0.50								
Vinyl chloride	ND	0.20								
Surr: 1,2-Dichloroethane-d4	0.18		0.2000		89.0	70	130			
Surr: 4-Bromofluorobenzene	0.21		0.2000		103	70	130			
Surr: Dibromofluoromethane	0.18		0.2000		89.0	70	130			
Surr: Toluene-d8	0.19		0.2000		93.7	70	130			

Sample ID	<b>lcs-18164</b>		SampType:	<b>LCS</b>		TestCode:	<b>Volatiles by 8260B/1311</b>			
Client ID:	<b>LCSS</b>		Batch ID:	<b>18164</b>		RunNo:	<b>24920</b>			
Prep Date:	<b>3/16/2015</b>		Analysis Date:	<b>3/19/2015</b>		SeqNo:	<b>734305</b>		Units: <b>mg/L</b>	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.43	0.10	0.4000	0	108	70	130			
Chlorobenzene	0.41	0.10	0.4000	0	102	70	130			
1,1-Dichloroethene	0.47	0.10	0.4000	0	118	66.4	139			
Trichloroethene (TCE)	0.38	0.10	0.4000	0	95.7	70	130			
Surr: 1,2-Dichloroethane-d4	0.19		0.2000		97.4	70	130			
Surr: 4-Bromofluorobenzene	0.20		0.2000		101	70	130			
Surr: Dibromofluoromethane	0.19		0.2000		97.3	70	130			
Surr: Toluene-d8	0.20		0.2000		99.3	70	130			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH Not In Range  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1503615

20-Mar-15

Client: Western Refining Southwest, Gallup

Project: Hot Oil Tank Area Spill

Sample ID	MB-18175	SampType:	MBLK	TestCode:	EPA Method 7471: Mercury					
Client ID:	PBS	Batch ID:	18175	RunNo:	24906					
Prep Date:	3/17/2015	Analysis Date:	3/18/2015	SeqNo:	733774	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	LCS-18175	SampType:	LCS	TestCode:	EPA Method 7471: Mercury					
Client ID:	LCSS	Batch ID:	18175	RunNo:	24906					
Prep Date:	3/17/2015	Analysis Date:	3/18/2015	SeqNo:	733775	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	99.5	80	120			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH Not In Range  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1503615

20-Mar-15

Client: Western Refining Southwest, Gallup

Project: Hot Oil Tank Area Spill

Sample ID	MB-18195	SampType:	MBLK	TestCode:	MERCURY, TCLP					
Client ID:	PBW	Batch ID:	18195	RunNo:	24905					
Prep Date:	3/18/2015	Analysis Date:	3/18/2015	SeqNo:	733752	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020								

Sample ID	LCS-18195	SampType:	LCS	TestCode:	MERCURY, TCLP					
Client ID:	LCSW	Batch ID:	18195	RunNo:	24905					
Prep Date:	3/18/2015	Analysis Date:	3/18/2015	SeqNo:	733755	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020	0.005000	0	120	80	120			

Sample ID	TCLP Fluid #1703	SampType:	MBLK	TestCode:	MERCURY, TCLP					
Client ID:	PBW	Batch ID:	18195	RunNo:	24905					
Prep Date:	3/18/2015	Analysis Date:	3/18/2015	SeqNo:	733756	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.020								

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH Not In Range  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1503615

20-Mar-15

Client: Western Refining Southwest, Gallup

Project: Hot Oil Tank Area Spill

Sample ID	MB-18174		SampType: MBLK		TestCode: EPA Method 6010B: Soil Metals					
Client ID:	PBS		Batch ID: 18174		RunNo: 24901					
Prep Date:	3/17/2015		Analysis Date: 3/18/2015		SeqNo: 733676		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	2.5								
Barium	ND	0.10								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Lead	ND	0.25								
Selenium	ND	2.5								
Silver	ND	0.25								

Sample ID	LCS-18174		SampType: LCS		TestCode: EPA Method 6010B: Soil Metals					
Client ID:	LCSS		Batch ID: 18174		RunNo: 24901					
Prep Date:	3/17/2015		Analysis Date: 3/18/2015		SeqNo: 733677		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	25	2.5	25.00	0	100	80	120			
Barium	24	0.10	25.00	0	96.1	80	120			
Cadmium	24	0.10	25.00	0	97.7	80	120			
Chromium	24	0.30	25.00	0	97.8	80	120			
Lead	25	0.25	25.00	0	98.5	80	120			
Selenium	25	2.5	25.00	0	100	80	120			
Silver	5.4	0.25	5.000	0	108	80	120			

### Qualifiers:

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E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH Not In Range  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1503615

20-Mar-15

Client: Western Refining Southwest, Gallup

Project: Hot Oil Tank Area Spill

Sample ID	MB-18186		SampType: MBLK		TestCode: EPA Method 6010B: TCLP Metals					
Client ID:	PBW		Batch ID: 18186		RunNo: 24901					
Prep Date:	3/17/2015		Analysis Date: 3/18/2015		SeqNo: 733662		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	5.0								
Barium	ND	100								
Cadmium	ND	1.0								
Chromium	ND	5.0								
Lead	ND	5.0								
Selenium	ND	1.0								
Silver	ND	5.0								

Sample ID	LCS-18186		SampType: LCS		TestCode: EPA Method 6010B: TCLP Metals					
Client ID:	LCSW		Batch ID: 18186		RunNo: 24901					
Prep Date:	3/17/2015		Analysis Date: 3/18/2015		SeqNo: 733663		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	5.0	0.5000	0	109	80	120			
Barium	ND	100	0.5000	0	95.9	80	120			
Cadmium	ND	1.0	0.5000	0	101	80	120			
Chromium	ND	5.0	0.5000	0	97.5	80	120			
Lead	ND	5.0	0.5000	0	101	80	120			
Selenium	ND	1.0	0.5000	0	104	80	120			
Silver	ND	5.0	0.1000	0	115	80	120			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH Not In Range  
RL Reporting Detection Limit



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1503615

RcptNo: 1

Received by/date:

*CS*

*03/13/15*

Logged By: Lindsay Mangin

3/13/2015 4:20:00 PM

*Lindsay Mangin*

Completed By: Lindsay Mangin

3/16/2015 8:34:50 AM

*Lindsay Mangin*

Reviewed By:

*IO*

*03/16/15*

### Chain of Custody

1. Custody seals intact on sample bottles? Yes ☒ No ☐ Not Present ☐  
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐  
3. How was the sample delivered? Client

### Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐  
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐  
6. Sample(s) in proper container(s)? Yes ☒ No ☐  
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐  
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐  
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐  
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒  
11. Were any sample containers received broken? Yes ☐ No ☒  
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐  
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐  
14. Is it clear what analyses were requested? Yes ☒ No ☐  
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH:

(<2 or >12 unless noted)

Adjusted? \_\_\_\_\_

Checked by: \_\_\_\_\_

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			



**Chavez, Carl J, EMNRD**

---

**From:** Larsen, Thurman <Thurman.Larsen@wnr.com>  
**Sent:** Thursday, August 27, 2015 2:56 PM  
**To:** Chavez, Carl J, EMNRD; VanHorn, Kristen, NMENV; Cobrain, Dave, NMENV  
**Cc:** Riege, Ed  
**Subject:** FCC SPILL 020715 FINAL REPORT (2 of 2)  
**Attachments:** FCC FEED Analytical.xlsx; 20150826\_125952.jpg; 20150826\_125901.jpg; 20150826\_125800.jpg; 20150826\_125532.jpg

Carl and Kristen,

The above attachments (part 2 of 2) are the final report for the FCC Spill that occurred on February 7, 2015. Please let me know if you should require any additional assistance. I can be reached at either of the numbers listed below.

Beck Larsen  
Environmental Engineer  
Western Refining Southwest (Gallup Refinery)  
92 Giant Crossing Road - New Mailing Address  
Gallup, NM 87301  
Office: (505) 722-0258  
cell: (505) 862-1749



FCC FEED SPILL											
DATE:		2/7/2015									
		INDIVIDUAL SAMPLE POINTS					Roll-Off Box Comp (TCLP)				
		Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Average	Sample 1	Sample 2	Average	
		DRO	28000	13000	37000	97,000	74000	49800	57000	88000	67200
		MRO	44000	20000	60000	140000	110000	74800	89000	130000	100950
		GRO	28		130	30		63			63
		DMG	72028	33000	97130	237030	184000	124638	146000	218000	168159
		TPH									
		METALS:									
		Arsenic	ND	3.6	ND	ND	ND	3.6	ND	ND	ND
		Barium	230	220	210	240	440	268	ND	ND	ND
Cadmium	0.2	0.44	0.42	0.18	1.1	0	ND	ND	ND		
Chromium	12	19	10	6.6	9.5	11	ND	ND	ND		
Lead	13	23	16	5.6	14	14	ND	ND	ND		
Mercury	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Silver	ND	ND	ND	ND	ND	ND	ND	ND	ND		
VOLATILES											
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Toluene	0.55	ND	3.2	0.5	ND	1.4					
Ethylbenzene	0.29	ND	1.7	0.31	ND	0.8					
Butanone, 2-							ND	ND	ND		
Carbon Tetrachloride							ND	ND	ND		
Chlorobenzene							ND	ND	ND		
Chloroform							ND	ND	ND		
Cichlorobenzene, 1,4-							ND	ND	ND		
Dichloroethane, 1,2- (EDC)							ND	ND	ND		
Dichloroethene, 1,1-							ND	ND	ND		
Hexachlorobutadiene							ND	ND	ND		
Tetrachloroethene (PCE)							ND	ND	ND		
Trichloroethene (TCE)							ND	ND	ND		
Vinyl Chloride							ND	ND	ND		
TMB, 1,2,4-	1.3	0.85	5.1	1.2	1	1.9					
TMB, 1,3,5-	0.35	0.27	1.5	0.31	0.28	0.5					
EDC							ND	ND	ND		
Naphthalene	1	0.65	3.7	1.1	1.1	1.5					
Methylnaphthalee, 1-	3.5	2.4	11 5,4		4.7	5.4					
Methylnaphthalee, 2-	4.8	2.9	15	7.2	5.8	7.1					
Isopropylbenzene	ND	ND	0.72	ND	ND	0.7					
Isopropyltoluene, 4-	ND	ND	0.5	ND	ND	0.5					
Propylbenzene, n-	ND	ND	1	ND	ND	1.0					
Butylbenzene, sec-	ND	ND	0.6	ND	ND	0.6					
Xylene, Total	1.9	0.9	9.8	1.9	1.3	3.2					
pH	8.04	8.33	8.4	8	8.26	8.2	7.89	7.4	7.94		
Reactive Cynaide	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Ignitability	Neg	Neg	Neg	Neg	Neg	Neg	Neg	Neg	Neg		
Reactive Sulfides	ND	ND	ND	ND	ND	ND	ND	ND	ND		
ADDITIONAL METALS:											
Calcium											
Magnesium											
Potassium											
Sodium											

3/10/2015						
INDIVIDUAL SAMPLE POINTS						
Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Average	
250	540	2300	41	1900	1006.2	
ND	ND	ND	ND	ND	ND	
300	630	430	310	480	430	
ND	ND	ND	ND	ND	ND	
10	9.7	9.4	9.3	7.4	9	
4.8	6.3	4.4	1.7	9.9	5	
ND	ND	ND	ND	ND	ND	
ND	ND	ND	ND	ND	ND	
ND	ND	ND	ND	ND	ND	
ND	ND	ND	ND	ND	ND	
ND	ND	ND	ND	ND	ND	
ND	ND	ND	ND	ND	ND	
ND	ND	ND	ND	ND	ND	
ND	ND	ND	ND	ND	ND	
ND	ND	ND	ND	ND	ND	
ND	ND	ND	ND	ND	ND	
ND	ND	ND	ND	ND	ND	
ND	ND	ND	ND	ND	ND	
ND	ND	ND	ND	ND	ND	
11000	60000	41000	34000	53000	39800	
4500	5000	5300	5600	4300	4940	
2500	2000	1800	1900	1500	1940	
ND	ND	ND	ND	ND	ND	













Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

July 20, 2015

Thurman B. Larsen

Western Refining Southwest, Gallup

92 Giant Crossing Road

Gallup, NM 87301

TEL: (505) 722-0258

FAX (505) 722-0210

RE: FCC Overflow

OrderNo.: 1507492

Dear Thurman B. Larsen:

Hall Environmental Analysis Laboratory received 5 sample(s) on 7/10/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman".

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 1507492

Date Reported: 7/20/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: #1

Project: FCC Overflow

Collection Date: 7/9/2015 1:45:00 PM

Lab ID: 1507492-001

Matrix: SOIL

Received Date: 7/10/2015 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 418.1: TPH</b>							Analyst: <b>TOM</b>
Petroleum Hydrocarbons, TR	250	20		mg/Kg	1	7/13/2015	20221
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Fluoride	1.5	1.5		mg/Kg	5	7/15/2015 12:46:38 PM	20264
Chloride	ND	7.5		mg/Kg	5	7/15/2015 12:46:38 PM	20264
Nitrogen, Nitrite (As N)	ND	1.5		mg/Kg	5	7/15/2015 12:46:38 PM	20264
Bromide	ND	1.5		mg/Kg	5	7/15/2015 12:46:38 PM	20264
Nitrogen, Nitrate (As N)	ND	1.5		mg/Kg	5	7/15/2015 12:46:38 PM	20264
Phosphorus, Orthophosphate (As P)	ND	7.5		mg/Kg	5	7/15/2015 12:46:38 PM	20264
Sulfate	ND	7.5		mg/Kg	5	7/15/2015 12:46:38 PM	20264
<b>EPA METHOD 7471: MERCURY</b>							Analyst: <b>TES</b>
Mercury	ND	0.032		mg/Kg	1	7/15/2015 2:13:16 PM	20245
<b>EPA METHOD 6010B: SOIL METALS</b>							Analyst: <b>ELS</b>
Arsenic	ND	5.0		mg/Kg	2	7/15/2015 2:06:12 PM	20243
Barium	300	0.20		mg/Kg	2	7/15/2015 2:06:12 PM	20243
Cadmium	ND	0.20		mg/Kg	2	7/15/2015 2:06:12 PM	20243
Calcium	11000	120		mg/Kg	5	7/15/2015 2:08:04 PM	20243
Chromium	10	0.60		mg/Kg	2	7/15/2015 2:06:12 PM	20243
Lead	4.8	0.50		mg/Kg	2	7/15/2015 2:06:12 PM	20243
Magnesium	4500	120		mg/Kg	5	7/15/2015 2:08:04 PM	20243
Potassium	2500	250		mg/Kg	5	7/15/2015 2:08:04 PM	20243
Selenium	ND	5.0		mg/Kg	2	7/15/2015 2:06:12 PM	20243
Silver	ND	0.50		mg/Kg	2	7/15/2015 2:06:12 PM	20243
Sodium	ND	120		mg/Kg	5	7/15/2015 2:08:04 PM	20243
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: <b>cadg</b>
Benzene	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
Toluene	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
Ethylbenzene	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
Methyl tert-butyl ether (MTBE)	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
1,2,4-Trimethylbenzene	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
1,3,5-Trimethylbenzene	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
1,2-Dichloroethane (EDC)	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
1,2-Dibromoethane (EDB)	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
Naphthalene	ND	0.096		mg/Kg	1	7/14/2015 1:08:49 PM	20225
1-Methylnaphthalene	ND	0.19		mg/Kg	1	7/14/2015 1:08:49 PM	20225
2-Methylnaphthalene	ND	0.19		mg/Kg	1	7/14/2015 1:08:49 PM	20225
Acetone	ND	0.72		mg/Kg	1	7/14/2015 1:08:49 PM	20225
Bromobenzene	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers: \* Value exceeds Maximum Contaminant Level.  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 O RSD is greater than RSDlimit  
 R RPD outside accepted recovery limits  
 S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 ND Not Detected at the Reporting Limit  
 P Sample pH Not In Range  
 RL Reporting Detection Limit

## Analytical Report

Lab Order 1507492

Date Reported: 7/20/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: #1

Project: FCC Overflow

Collection Date: 7/9/2015 1:45:00 PM

Lab ID: 1507492-001

Matrix: SOIL

Received Date: 7/10/2015 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Bromodichloromethane	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
Bromoform	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
Bromomethane	ND	0.14		mg/Kg	1	7/14/2015 1:08:49 PM	20225
2-Butanone	ND	0.48		mg/Kg	1	7/14/2015 1:08:49 PM	20225
Carbon disulfide	ND	0.48		mg/Kg	1	7/14/2015 1:08:49 PM	20225
Carbon tetrachloride	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
Chlorobenzene	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
Chloroethane	ND	0.096		mg/Kg	1	7/14/2015 1:08:49 PM	20225
Chloroform	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
Chloromethane	ND	0.14		mg/Kg	1	7/14/2015 1:08:49 PM	20225
2-Chlorotoluene	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
4-Chlorotoluene	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
cis-1,2-DCE	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
cis-1,3-Dichloropropene	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
1,2-Dibromo-3-chloropropane	ND	0.096		mg/Kg	1	7/14/2015 1:08:49 PM	20225
Dibromochloromethane	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
Dibromomethane	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
1,2-Dichlorobenzene	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
1,3-Dichlorobenzene	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
1,4-Dichlorobenzene	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
Dichlorodifluoromethane	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
1,1-Dichloroethane	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
1,1-Dichloroethene	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
1,2-Dichloropropane	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
1,3-Dichloropropane	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
2,2-Dichloropropane	ND	0.096		mg/Kg	1	7/14/2015 1:08:49 PM	20225
1,1-Dichloropropene	ND	0.096		mg/Kg	1	7/14/2015 1:08:49 PM	20225
Hexachlorobutadiene	ND	0.096		mg/Kg	1	7/14/2015 1:08:49 PM	20225
2-Hexanone	ND	0.48		mg/Kg	1	7/14/2015 1:08:49 PM	20225
Isopropylbenzene	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
4-Isopropyltoluene	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
4-Methyl-2-pentanone	ND	0.48		mg/Kg	1	7/14/2015 1:08:49 PM	20225
Methylene chloride	ND	0.14		mg/Kg	1	7/14/2015 1:08:49 PM	20225
n-Butylbenzene	ND	0.14		mg/Kg	1	7/14/2015 1:08:49 PM	20225
n-Propylbenzene	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
sec-Butylbenzene	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
Styrene	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
tert-Butylbenzene	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
1,1,1,2-Tetrachloroethane	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers: \* Value exceeds Maximum Contaminant Level.  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 O RSD is greater than RSDlimit  
 R RPD outside accepted recovery limits  
 S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 ND Not Detected at the Reporting Limit  
 P Sample pH Not In Range  
 RL Reporting Detection Limit



## Analytical Report

Lab Order 1507492

Date Reported: 7/20/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: #1

Project: FCC Overflow

Collection Date: 7/9/2015 1:45:00 PM

Lab ID: 1507492-001

Matrix: SOIL

Received Date: 7/10/2015 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
1,1,2,2-Tetrachloroethane	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
Tetrachloroethene (PCE)	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
trans-1,2-DCE	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
trans-1,3-Dichloropropene	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
1,2,3-Trichlorobenzene	ND	0.096		mg/Kg	1	7/14/2015 1:08:49 PM	20225
1,2,4-Trichlorobenzene	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
1,1,1-Trichloroethane	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
1,1,2-Trichloroethane	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
Trichloroethene (TCE)	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
Trichlorofluoromethane	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
1,2,3-Trichloropropane	ND	0.096		mg/Kg	1	7/14/2015 1:08:49 PM	20225
Vinyl chloride	ND	0.048		mg/Kg	1	7/14/2015 1:08:49 PM	20225
Xylenes, Total	ND	0.096		mg/Kg	1	7/14/2015 1:08:49 PM	20225
Surr: Dibromofluoromethane	102	70-130		%REC	1	7/14/2015 1:08:49 PM	20225
Surr: 1,2-Dichloroethane-d4	99.1	70-130		%REC	1	7/14/2015 1:08:49 PM	20225
Surr: Toluene-d8	94.0	70-130		%REC	1	7/14/2015 1:08:49 PM	20225
Surr: 4-Bromofluorobenzene	101	70-130		%REC	1	7/14/2015 1:08:49 PM	20225

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 3 of 22
	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	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

## Analytical Report

Lab Order 1507492

Date Reported: 7/20/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: #2

Project: FCC Overflow

Collection Date: 7/9/2015 1:50:00 PM

Lab ID: 1507492-002

Matrix: SOIL

Received Date: 7/10/2015 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 418.1: TPH</b>							Analyst: TOM
Petroleum Hydrocarbons, TR	540	20		mg/Kg	1	7/13/2015	20221
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: LGT
Fluoride	4.6	1.5		mg/Kg	5	7/15/2015 12:59:02 PM	20264
Chloride	ND	7.5		mg/Kg	5	7/15/2015 12:59:02 PM	20264
Nitrogen, Nitrite (As N)	ND	1.5		mg/Kg	5	7/15/2015 12:59:02 PM	20264
Bromide	ND	1.5		mg/Kg	5	7/15/2015 12:59:02 PM	20264
Nitrogen, Nitrate (As N)	ND	1.5		mg/Kg	5	7/15/2015 12:59:02 PM	20264
Phosphorus, Orthophosphate (As P)	ND	7.5		mg/Kg	5	7/15/2015 12:59:02 PM	20264
Sulfate	ND	7.5		mg/Kg	5	7/15/2015 12:59:02 PM	20264
<b>EPA METHOD 7471: MERCURY</b>							Analyst: TES
Mercury	ND	0.032		mg/Kg	1	7/15/2015 1:29:21 PM	20245
<b>EPA METHOD 6010B: SOIL METALS</b>							Analyst: ELS
Arsenic	ND	2.5		mg/Kg	1	7/15/2015 2:09:48 PM	20243
Barium	630	0.49		mg/Kg	5	7/15/2015 2:21:22 PM	20243
Cadmium	ND	0.098		mg/Kg	1	7/15/2015 2:09:48 PM	20243
Calcium	60000	490		mg/Kg	20	7/16/2015 4:28:19 PM	20243
Chromium	9.7	0.29		mg/Kg	1	7/15/2015 2:09:48 PM	20243
Lead	6.3	0.25		mg/Kg	1	7/15/2015 2:09:48 PM	20243
Magnesium	5000	120		mg/Kg	5	7/15/2015 2:21:22 PM	20243
Potassium	2000	250		mg/Kg	5	7/15/2015 2:21:22 PM	20243
Selenium	ND	2.5		mg/Kg	1	7/15/2015 2:09:48 PM	20243
Silver	ND	0.25		mg/Kg	1	7/15/2015 2:09:48 PM	20243
Sodium	ND	120		mg/Kg	5	7/15/2015 2:21:22 PM	20243
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Benzene	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
Toluene	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
Ethylbenzene	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
Methyl tert-butyl ether (MTBE)	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
1,2,4-Trimethylbenzene	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
1,3,5-Trimethylbenzene	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
1,2-Dichloroethane (EDC)	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
1,2-Dibromoethane (EDB)	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
Naphthalene	ND	0.094		mg/Kg	1	7/14/2015 1:37:36 PM	20225
1-Methylnaphthalene	ND	0.19		mg/Kg	1	7/14/2015 1:37:36 PM	20225
2-Methylnaphthalene	ND	0.19		mg/Kg	1	7/14/2015 1:37:36 PM	20225
Acetone	ND	0.71		mg/Kg	1	7/14/2015 1:37:36 PM	20225
Bromobenzene	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



## Analytical Report

Lab Order 1507492

Date Reported: 7/20/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: #2

Project: FCC Overflow

Collection Date: 7/9/2015 1:50:00 PM

Lab ID: 1507492-002

Matrix: SOIL

Received Date: 7/10/2015 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Bromodichloromethane	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
Bromoform	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
Bromomethane	ND	0.14		mg/Kg	1	7/14/2015 1:37:36 PM	20225
2-Butanone	ND	0.47		mg/Kg	1	7/14/2015 1:37:36 PM	20225
Carbon disulfide	ND	0.47		mg/Kg	1	7/14/2015 1:37:36 PM	20225
Carbon tetrachloride	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
Chlorobenzene	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
Chloroethane	ND	0.094		mg/Kg	1	7/14/2015 1:37:36 PM	20225
Chloroform	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
Chloromethane	ND	0.14		mg/Kg	1	7/14/2015 1:37:36 PM	20225
2-Chlorotoluene	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
4-Chlorotoluene	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
cis-1,2-DCE	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
cis-1,3-Dichloropropene	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
1,2-Dibromo-3-chloropropane	ND	0.094		mg/Kg	1	7/14/2015 1:37:36 PM	20225
Dibromochloromethane	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
Dibromomethane	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
1,2-Dichlorobenzene	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
1,3-Dichlorobenzene	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
1,4-Dichlorobenzene	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
Dichlorodifluoromethane	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
1,1-Dichloroethane	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
1,1-Dichloroethene	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
1,2-Dichloropropane	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
1,3-Dichloropropane	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
2,2-Dichloropropane	ND	0.094		mg/Kg	1	7/14/2015 1:37:36 PM	20225
1,1-Dichloropropene	ND	0.094		mg/Kg	1	7/14/2015 1:37:36 PM	20225
Hexachlorobutadiene	ND	0.094		mg/Kg	1	7/14/2015 1:37:36 PM	20225
2-Hexanone	ND	0.47		mg/Kg	1	7/14/2015 1:37:36 PM	20225
Isopropylbenzene	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
4-Isopropyltoluene	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
4-Methyl-2-pentanone	ND	0.47		mg/Kg	1	7/14/2015 1:37:36 PM	20225
Methylene chloride	ND	0.14		mg/Kg	1	7/14/2015 1:37:36 PM	20225
n-Butylbenzene	ND	0.14		mg/Kg	1	7/14/2015 1:37:36 PM	20225
n-Propylbenzene	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
sec-Butylbenzene	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
Styrene	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
tert-Butylbenzene	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
1,1,1,2-Tetrachloroethane	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

## Analytical Report

Lab Order 1507492

Date Reported: 7/20/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: #2

Project: FCC Overflow

Collection Date: 7/9/2015 1:50:00 PM

Lab ID: 1507492-002

Matrix: SOIL

Received Date: 7/10/2015 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
1,1,2,2-Tetrachloroethane	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
Tetrachloroethene (PCE)	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
trans-1,2-DCE	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
trans-1,3-Dichloropropene	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
1,2,3-Trichlorobenzene	ND	0.094		mg/Kg	1	7/14/2015 1:37:36 PM	20225
1,2,4-Trichlorobenzene	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
1,1,1-Trichloroethane	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
1,1,2-Trichloroethane	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
Trichloroethene (TCE)	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
Trichlorofluoromethane	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
1,2,3-Trichloropropane	ND	0.094		mg/Kg	1	7/14/2015 1:37:36 PM	20225
Vinyl chloride	ND	0.047		mg/Kg	1	7/14/2015 1:37:36 PM	20225
Xylenes, Total	ND	0.094		mg/Kg	1	7/14/2015 1:37:36 PM	20225
Surr: Dibromofluoromethane	99.3	70-130		%REC	1	7/14/2015 1:37:36 PM	20225
Surr: 1,2-Dichloroethane-d4	97.5	70-130		%REC	1	7/14/2015 1:37:36 PM	20225
Surr: Toluene-d8	95.9	70-130		%REC	1	7/14/2015 1:37:36 PM	20225
Surr: 4-Bromofluorobenzene	102	70-130		%REC	1	7/14/2015 1:37:36 PM	20225

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

## Analytical Report

Lab Order 1507492

Date Reported: 7/20/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: #3

Project: FCC Overflow

Collection Date: 7/9/2015 1:55:00 PM

Lab ID: 1507492-003

Matrix: SOIL

Received Date: 7/10/2015 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 418.1: TPH</b>							Analyst: TOM
Petroleum Hydrocarbons, TR	2300	200		mg/Kg	10	7/13/2015	20221
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: LGT
Fluoride	1.7	1.5		mg/Kg	5	7/15/2015 1:11:27 PM	20264
Chloride	ND	7.5		mg/Kg	5	7/15/2015 1:11:27 PM	20264
Nitrogen, Nitrite (As N)	ND	1.5		mg/Kg	5	7/15/2015 1:11:27 PM	20264
Bromide	ND	1.5		mg/Kg	5	7/15/2015 1:11:27 PM	20264
Nitrogen, Nitrate (As N)	ND	1.5		mg/Kg	5	7/15/2015 1:11:27 PM	20264
Phosphorus, Orthophosphate (As P)	ND	7.5		mg/Kg	5	7/15/2015 1:11:27 PM	20264
Sulfate	ND	7.5		mg/Kg	5	7/15/2015 1:11:27 PM	20264
<b>EPA METHOD 7471: MERCURY</b>							Analyst: TES
Mercury	ND	0.033		mg/Kg	1	7/15/2015 1:31:10 PM	20245
<b>EPA METHOD 6010B: SOIL METALS</b>							Analyst: ELS
Arsenic	ND	5.0		mg/Kg	2	7/15/2015 2:25:08 PM	20243
Barium	430	0.20		mg/Kg	2	7/15/2015 2:25:08 PM	20243
Cadmium	ND	0.20		mg/Kg	2	7/15/2015 2:25:08 PM	20243
Calcium	41000	250		mg/Kg	10	7/16/2015 4:29:17 PM	20243
Chromium	9.4	0.60		mg/Kg	2	7/15/2015 2:25:08 PM	20243
Lead	4.4	0.50		mg/Kg	2	7/15/2015 2:25:08 PM	20243
Magnesium	5300	130		mg/Kg	5	7/15/2015 2:27:10 PM	20243
Potassium	1800	250		mg/Kg	5	7/15/2015 2:27:10 PM	20243
Selenium	ND	5.0		mg/Kg	2	7/15/2015 2:25:08 PM	20243
Silver	ND	0.50		mg/Kg	2	7/15/2015 2:25:08 PM	20243
Sodium	ND	130		mg/Kg	5	7/15/2015 2:27:10 PM	20243
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Benzene	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
Toluene	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
Ethylbenzene	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
Methyl tert-butyl ether (MTBE)	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
1,2,4-Trimethylbenzene	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
1,3,5-Trimethylbenzene	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
1,2-Dichloroethane (EDC)	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
1,2-Dibromoethane (EDB)	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
Naphthalene	ND	0.096		mg/Kg	1	7/14/2015 2:06:24 PM	20225
1-Methylnaphthalene	ND	0.19		mg/Kg	1	7/14/2015 2:06:24 PM	20225
2-Methylnaphthalene	ND	0.19		mg/Kg	1	7/14/2015 2:06:24 PM	20225
Acetone	ND	0.72		mg/Kg	1	7/14/2015 2:06:24 PM	20225
Bromobenzene	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



## Analytical Report

Lab Order 1507492

Date Reported: 7/20/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: #3

Project: FCC Overflow

Collection Date: 7/9/2015 1:55:00 PM

Lab ID: 1507492-003

Matrix: SOIL

Received Date: 7/10/2015 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Bromodichloromethane	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
Bromoform	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
Bromomethane	ND	0.14		mg/Kg	1	7/14/2015 2:06:24 PM	20225
2-Butanone	ND	0.48		mg/Kg	1	7/14/2015 2:06:24 PM	20225
Carbon disulfide	ND	0.48		mg/Kg	1	7/14/2015 2:06:24 PM	20225
Carbon tetrachloride	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
Chlorobenzene	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
Chloroethane	ND	0.096		mg/Kg	1	7/14/2015 2:06:24 PM	20225
Chloroform	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
Chloromethane	ND	0.14		mg/Kg	1	7/14/2015 2:06:24 PM	20225
2-Chlorotoluene	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
4-Chlorotoluene	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
cis-1,2-DCE	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
cis-1,3-Dichloropropene	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
1,2-Dibromo-3-chloropropane	ND	0.096		mg/Kg	1	7/14/2015 2:06:24 PM	20225
Dibromochloromethane	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
Dibromomethane	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
1,2-Dichlorobenzene	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
1,3-Dichlorobenzene	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
1,4-Dichlorobenzene	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
Dichlorodifluoromethane	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
1,1-Dichloroethane	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
1,1-Dichloroethene	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
1,2-Dichloropropane	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
1,3-Dichloropropane	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
2,2-Dichloropropane	ND	0.096		mg/Kg	1	7/14/2015 2:06:24 PM	20225
1,1-Dichloropropene	ND	0.096		mg/Kg	1	7/14/2015 2:06:24 PM	20225
Hexachlorobutadiene	ND	0.096		mg/Kg	1	7/14/2015 2:06:24 PM	20225
2-Hexanone	ND	0.48		mg/Kg	1	7/14/2015 2:06:24 PM	20225
Isopropylbenzene	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
4-Isopropyltoluene	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
4-Methyl-2-pentanone	ND	0.48		mg/Kg	1	7/14/2015 2:06:24 PM	20225
Methylene chloride	ND	0.14		mg/Kg	1	7/14/2015 2:06:24 PM	20225
n-Butylbenzene	ND	0.14		mg/Kg	1	7/14/2015 2:06:24 PM	20225
n-Propylbenzene	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
sec-Butylbenzene	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
Styrene	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
tert-Butylbenzene	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
1,1,1,2-Tetrachloroethane	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

**Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Western Refining Southwest, Gallup**Client Sample ID:** #3**Project:** FCC Overflow**Collection Date:** 7/9/2015 1:55:00 PM**Lab ID:** 1507492-003**Matrix:** SOIL**Received Date:** 7/10/2015 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
1,1,2,2-Tetrachloroethane	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
Tetrachloroethene (PCE)	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
trans-1,2-DCE	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
trans-1,3-Dichloropropene	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
1,2,3-Trichlorobenzene	ND	0.096		mg/Kg	1	7/14/2015 2:06:24 PM	20225
1,2,4-Trichlorobenzene	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
1,1,1-Trichloroethane	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
1,1,2-Trichloroethane	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
Trichloroethene (TCE)	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
Trichlorofluoromethane	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
1,2,3-Trichloropropane	ND	0.096		mg/Kg	1	7/14/2015 2:06:24 PM	20225
Vinyl chloride	ND	0.048		mg/Kg	1	7/14/2015 2:06:24 PM	20225
Xylenes, Total	ND	0.096		mg/Kg	1	7/14/2015 2:06:24 PM	20225
Surr: Dibromofluoromethane	102	70-130		%REC	1	7/14/2015 2:06:24 PM	20225
Surr: 1,2-Dichloroethane-d4	95.8	70-130		%REC	1	7/14/2015 2:06:24 PM	20225
Surr: Toluene-d8	94.5	70-130		%REC	1	7/14/2015 2:06:24 PM	20225
Surr: 4-Bromofluorobenzene	99.7	70-130		%REC	1	7/14/2015 2:06:24 PM	20225

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

## Analytical Report

Lab Order 1507492

Date Reported: 7/20/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: #4

Project: FCC Overflow

Collection Date: 7/9/2015 2:00:00 PM

Lab ID: 1507492-004

Matrix: SOIL

Received Date: 7/10/2015 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 418.1: TPH</b>							Analyst: TOM
Petroleum Hydrocarbons, TR	41	20		mg/Kg	1	7/13/2015	20221
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: LGT
Fluoride	2.3	1.5		mg/Kg	5	7/15/2015 1:23:51 PM	20264
Chloride	ND	7.5		mg/Kg	5	7/15/2015 1:23:51 PM	20264
Nitrogen, Nitrite (As N)	ND	1.5		mg/Kg	5	7/15/2015 1:23:51 PM	20264
Bromide	ND	1.5		mg/Kg	5	7/15/2015 1:23:51 PM	20264
Nitrogen, Nitrate (As N)	ND	1.5		mg/Kg	5	7/15/2015 1:23:51 PM	20264
Phosphorus, Orthophosphate (As P)	ND	7.5		mg/Kg	5	7/15/2015 1:23:51 PM	20264
Sulfate	ND	7.5		mg/Kg	5	7/15/2015 1:23:51 PM	20264
<b>EPA METHOD 7471: MERCURY</b>							Analyst: TES
Mercury	ND	0.033		mg/Kg	1	7/15/2015 1:33:01 PM	20245
<b>EPA METHOD 6010B: SOIL METALS</b>							Analyst: ELS
Arsenic	ND	4.9		mg/Kg	2	7/15/2015 2:30:49 PM	20243
Barium	310	0.19		mg/Kg	2	7/15/2015 2:30:49 PM	20243
Cadmium	ND	0.19		mg/Kg	2	7/15/2015 2:30:49 PM	20243
Calcium	34000	240		mg/Kg	10	7/16/2015 4:30:21 PM	20243
Chromium	9.3	0.58		mg/Kg	2	7/15/2015 2:30:49 PM	20243
Lead	1.7	0.49		mg/Kg	2	7/15/2015 2:30:49 PM	20243
Magnesium	5600	120		mg/Kg	5	7/15/2015 2:32:50 PM	20243
Potassium	1900	240		mg/Kg	5	7/15/2015 2:32:50 PM	20243
Selenium	ND	4.9		mg/Kg	2	7/15/2015 2:30:49 PM	20243
Silver	ND	0.49		mg/Kg	2	7/15/2015 2:30:49 PM	20243
Sodium	ND	120		mg/Kg	5	7/15/2015 2:32:50 PM	20243
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Benzene	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
Toluene	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
Ethylbenzene	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
Methyl tert-butyl ether (MTBE)	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
1,2,4-Trimethylbenzene	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
1,3,5-Trimethylbenzene	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
1,2-Dichloroethane (EDC)	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
1,2-Dibromoethane (EDB)	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
Naphthalene	ND	0.098		mg/Kg	1	7/14/2015 2:35:20 PM	20225
1-Methylnaphthalene	ND	0.20		mg/Kg	1	7/14/2015 2:35:20 PM	20225
2-Methylnaphthalene	ND	0.20		mg/Kg	1	7/14/2015 2:35:20 PM	20225
Acetone	ND	0.74		mg/Kg	1	7/14/2015 2:35:20 PM	20225
Bromobenzene	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order 1507492

Date Reported: 7/20/2015

**CLIENT:** Western Refining Southwest, Gallup

**Client Sample ID:** #4

**Project:** FCC Overflow

**Collection Date:** 7/9/2015 2:00:00 PM

**Lab ID:** 1507492-004

**Matrix:** SOIL

**Received Date:** 7/10/2015 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Bromodichloromethane	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
Bromoform	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
Bromomethane	ND	0.15		mg/Kg	1	7/14/2015 2:35:20 PM	20225
2-Butanone	ND	0.49		mg/Kg	1	7/14/2015 2:35:20 PM	20225
Carbon disulfide	ND	0.49		mg/Kg	1	7/14/2015 2:35:20 PM	20225
Carbon tetrachloride	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
Chlorobenzene	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
Chloroethane	ND	0.098		mg/Kg	1	7/14/2015 2:35:20 PM	20225
Chloroform	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
Chloromethane	ND	0.15		mg/Kg	1	7/14/2015 2:35:20 PM	20225
2-Chlorotoluene	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
4-Chlorotoluene	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
cis-1,2-DCE	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
cis-1,3-Dichloropropene	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
1,2-Dibromo-3-chloropropane	ND	0.098		mg/Kg	1	7/14/2015 2:35:20 PM	20225
Dibromochloromethane	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
Dibromomethane	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
1,2-Dichlorobenzene	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
1,3-Dichlorobenzene	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
1,4-Dichlorobenzene	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
Dichlorodifluoromethane	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
1,1-Dichloroethane	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
1,1-Dichloroethene	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
1,2-Dichloropropane	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
1,3-Dichloropropane	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
2,2-Dichloropropane	ND	0.098		mg/Kg	1	7/14/2015 2:35:20 PM	20225
1,1-Dichloropropene	ND	0.098		mg/Kg	1	7/14/2015 2:35:20 PM	20225
Hexachlorobutadiene	ND	0.098		mg/Kg	1	7/14/2015 2:35:20 PM	20225
2-Hexanone	ND	0.49		mg/Kg	1	7/14/2015 2:35:20 PM	20225
Isopropylbenzene	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
4-Isopropyltoluene	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
4-Methyl-2-pentanone	ND	0.49		mg/Kg	1	7/14/2015 2:35:20 PM	20225
Methylene chloride	ND	0.15		mg/Kg	1	7/14/2015 2:35:20 PM	20225
n-Butylbenzene	ND	0.15		mg/Kg	1	7/14/2015 2:35:20 PM	20225
n-Propylbenzene	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
sec-Butylbenzene	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
Styrene	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
tert-Butylbenzene	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
1,1,1,2-Tetrachloroethane	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

## Analytical Report

Lab Order 1507492

Date Reported: 7/20/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: #4

Project: FCC Overflow

Collection Date: 7/9/2015 2:00:00 PM

Lab ID: 1507492-004

Matrix: SOIL

Received Date: 7/10/2015 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
1,1,2,2-Tetrachloroethane	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
Tetrachloroethene (PCE)	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
trans-1,2-DCE	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
trans-1,3-Dichloropropene	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
1,2,3-Trichlorobenzene	ND	0.098		mg/Kg	1	7/14/2015 2:35:20 PM	20225
1,2,4-Trichlorobenzene	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
1,1,1-Trichloroethane	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
1,1,2-Trichloroethane	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
Trichloroethene (TCE)	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
Trichlorofluoromethane	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
1,2,3-Trichloropropane	ND	0.098		mg/Kg	1	7/14/2015 2:35:20 PM	20225
Vinyl chloride	ND	0.049		mg/Kg	1	7/14/2015 2:35:20 PM	20225
Xylenes, Total	ND	0.098		mg/Kg	1	7/14/2015 2:35:20 PM	20225
Surr: Dibromofluoromethane	104	70-130		%REC	1	7/14/2015 2:35:20 PM	20225
Surr: 1,2-Dichloroethane-d4	102	70-130		%REC	1	7/14/2015 2:35:20 PM	20225
Surr: Toluene-d8	102	70-130		%REC	1	7/14/2015 2:35:20 PM	20225
Surr: 4-Bromofluorobenzene	101	70-130		%REC	1	7/14/2015 2:35:20 PM	20225

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 12 of 22
	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	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			



## Analytical Report

Lab Order 1507492

Date Reported: 7/20/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: #5

Project: FCC Overflow

Collection Date: 7/9/2015 2:05:00 PM

Lab ID: 1507492-005

Matrix: SOIL

Received Date: 7/10/2015 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 418.1: TPH</b>							Analyst: TOM
Petroleum Hydrocarbons, TR	1900	200		mg/Kg	10	7/13/2015	20221
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: LGT
Fluoride	ND	1.5		mg/Kg	5	7/15/2015 1:36:16 PM	20264
Chloride	ND	7.5		mg/Kg	5	7/15/2015 1:36:16 PM	20264
Nitrogen, Nitrite (As N)	ND	1.5		mg/Kg	5	7/15/2015 1:36:16 PM	20264
Bromide	ND	1.5		mg/Kg	5	7/15/2015 1:36:16 PM	20264
Nitrogen, Nitrate (As N)	ND	1.5		mg/Kg	5	7/15/2015 1:36:16 PM	20264
Phosphorus, Orthophosphate (As P)	ND	7.5		mg/Kg	5	7/15/2015 1:36:16 PM	20264
Sulfate	ND	7.5		mg/Kg	5	7/15/2015 1:36:16 PM	20264
<b>EPA METHOD 7471: MERCURY</b>							Analyst: TES
Mercury	ND	0.033		mg/Kg	1	7/15/2015 1:34:50 PM	20245
<b>EPA METHOD 6010B: SOIL METALS</b>							Analyst: ELS
Arsenic	ND	2.4		mg/Kg	1	7/15/2015 2:34:39 PM	20243
Barium	460	0.19		mg/Kg	2	7/15/2015 2:36:33 PM	20243
Cadmium	ND	0.095		mg/Kg	1	7/15/2015 2:34:39 PM	20243
Calcium	53000	1200		mg/Kg	50	7/16/2015 4:31:20 PM	20243
Chromium	7.4	0.29		mg/Kg	1	7/15/2015 2:34:39 PM	20243
Lead	9.9	0.24		mg/Kg	1	7/15/2015 2:34:39 PM	20243
Magnesium	4300	120		mg/Kg	5	7/15/2015 2:38:31 PM	20243
Potassium	1500	240		mg/Kg	5	7/15/2015 2:38:31 PM	20243
Selenium	ND	2.4		mg/Kg	1	7/15/2015 2:34:39 PM	20243
Silver	ND	0.24		mg/Kg	1	7/15/2015 2:34:39 PM	20243
Sodium	ND	120		mg/Kg	5	7/15/2015 2:38:31 PM	20243
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Benzene	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
Toluene	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
Ethylbenzene	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
Methyl tert-butyl ether (MTBE)	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
1,2,4-Trimethylbenzene	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
1,3,5-Trimethylbenzene	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
1,2-Dichloroethane (EDC)	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
1,2-Dibromoethane (EDB)	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
Naphthalene	ND	0.098		mg/Kg	1	7/14/2015 3:04:13 PM	20225
1-Methylnaphthalene	ND	0.20		mg/Kg	1	7/14/2015 3:04:13 PM	20225
2-Methylnaphthalene	ND	0.20		mg/Kg	1	7/14/2015 3:04:13 PM	20225
Acetone	ND	0.74		mg/Kg	1	7/14/2015 3:04:13 PM	20225
Bromobenzene	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

## Analytical Report

Lab Order 1507492

Date Reported: 7/20/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: #5

Project: FCC Overflow

Collection Date: 7/9/2015 2:05:00 PM

Lab ID: 1507492-005

Matrix: SOIL

Received Date: 7/10/2015 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
Bromodichloromethane	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
Bromoform	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
Bromomethane	ND	0.15		mg/Kg	1	7/14/2015 3:04:13 PM	20225
2-Butanone	ND	0.49		mg/Kg	1	7/14/2015 3:04:13 PM	20225
Carbon disulfide	ND	0.49		mg/Kg	1	7/14/2015 3:04:13 PM	20225
Carbon tetrachloride	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
Chlorobenzene	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
Chloroethane	ND	0.098		mg/Kg	1	7/14/2015 3:04:13 PM	20225
Chloroform	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
Chloromethane	ND	0.15		mg/Kg	1	7/14/2015 3:04:13 PM	20225
2-Chlorotoluene	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
4-Chlorotoluene	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
cis-1,2-DCE	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
cis-1,3-Dichloropropene	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
1,2-Dibromo-3-chloropropane	ND	0.098		mg/Kg	1	7/14/2015 3:04:13 PM	20225
Dibromochloromethane	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
Dibromomethane	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
1,2-Dichlorobenzene	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
1,3-Dichlorobenzene	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
1,4-Dichlorobenzene	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
Dichlorodifluoromethane	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
1,1-Dichloroethane	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
1,1-Dichloroethene	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
1,2-Dichloropropane	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
1,3-Dichloropropane	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
2,2-Dichloropropane	ND	0.098		mg/Kg	1	7/14/2015 3:04:13 PM	20225
1,1-Dichloropropene	ND	0.098		mg/Kg	1	7/14/2015 3:04:13 PM	20225
Hexachlorobutadiene	ND	0.098		mg/Kg	1	7/14/2015 3:04:13 PM	20225
2-Hexanone	ND	0.49		mg/Kg	1	7/14/2015 3:04:13 PM	20225
Isopropylbenzene	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
4-Isopropyltoluene	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
4-Methyl-2-pentanone	ND	0.49		mg/Kg	1	7/14/2015 3:04:13 PM	20225
Methylene chloride	ND	0.15		mg/Kg	1	7/14/2015 3:04:13 PM	20225
n-Butylbenzene	ND	0.15		mg/Kg	1	7/14/2015 3:04:13 PM	20225
n-Propylbenzene	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
sec-Butylbenzene	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
Styrene	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
tert-Butylbenzene	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
1,1,1,2-Tetrachloroethane	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

## Analytical Report

Lab Order 1507492

Date Reported: 7/20/2015

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: #5

Project: FCC Overflow

Collection Date: 7/9/2015 2:05:00 PM

Lab ID: 1507492-005

Matrix: SOIL

Received Date: 7/10/2015 4:32:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260B: VOLATILES</b>							Analyst: cadg
1,1,2,2-Tetrachloroethane	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
Tetrachloroethene (PCE)	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
trans-1,2-DCE	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
trans-1,3-Dichloropropene	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
1,2,3-Trichlorobenzene	ND	0.098		mg/Kg	1	7/14/2015 3:04:13 PM	20225
1,2,4-Trichlorobenzene	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
1,1,1-Trichloroethane	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
1,1,2-Trichloroethane	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
Trichloroethene (TCE)	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
Trichlorofluoromethane	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
1,2,3-Trichloropropane	ND	0.098		mg/Kg	1	7/14/2015 3:04:13 PM	20225
Vinyl chloride	ND	0.049		mg/Kg	1	7/14/2015 3:04:13 PM	20225
Xylenes, Total	ND	0.098		mg/Kg	1	7/14/2015 3:04:13 PM	20225
Surr: Dibromofluoromethane	101	70-130		%REC	1	7/14/2015 3:04:13 PM	20225
Surr: 1,2-Dichloroethane-d4	96.8	70-130		%REC	1	7/14/2015 3:04:13 PM	20225
Surr: Toluene-d8	96.0	70-130		%REC	1	7/14/2015 3:04:13 PM	20225
Surr: 4-Bromofluorobenzene	102	70-130		%REC	1	7/14/2015 3:04:13 PM	20225

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 15 of 22
	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	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			



# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507492

20-Jul-15

Client: Western Refining Southwest, Gallup

Project: FCC Overflow

Sample ID	MB-20264	SampType: MBLK			TestCode: EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID: 20264			RunNo: 27515					
Prep Date:	7/15/2015	Analysis Date: 7/15/2015			SeqNo: 826176		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Fluoride	ND	0.30								
Chloride	ND	1.5								
Nitrogen, Nitrite (As N)	ND	0.30								
Bromide	ND	0.30								
Nitrogen, Nitrate (As N)	ND	0.30								
Phosphorus, Orthophosphate (As P	ND	1.5								
Sulfate	ND	1.5								

Sample ID	LCS-20264		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 20264		RunNo: 27515					
Prep Date:	7/15/2015		Analysis Date: 7/15/2015		SeqNo: 826177		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Fluoride	1.6	0.30	1.500	0	104	90	110			
Chloride	14	1.5	15.00	0	93.3	90	110			
Nitrogen, Nitrite (As N)	2.9	0.30	3.000	0	95.5	90	110			
Bromide	7.0	0.30	7.500	0	93.5	90	110			
Nitrogen, Nitrate (As N)	7.3	0.30	7.500	0	97.2	90	110			
Phosphorus, Orthophosphate (As P	14	1.5	15.00	0	96.2	90	110			
Sulfate	29	1.5	30.00	0	96.3	90	110			

## Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH Not In Range  
RL Reporting Detection Limit

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507492

20-Jul-15

Client: Western Refining Southwest, Gallup

Project: FCC Overflow

Sample ID	MB-20221	SampType:	MBLK	TestCode:	EPA Method 418.1: TPH					
Client ID:	PBS	Batch ID:	20221	RunNo:	27456					
Prep Date:	7/13/2015	Analysis Date:	7/13/2015	SeqNo:	823655	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	20								

Sample ID	LCS-20221	SampType:	LCS	TestCode:	EPA Method 418.1: TPH					
Client ID:	LCSS	Batch ID:	20221	RunNo:	27456					
Prep Date:	7/13/2015	Analysis Date:	7/13/2015	SeqNo:	823656	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	100	20	100.0	0	101	83.6	116			

Sample ID	LCSD-20221	SampType:	LCSD	TestCode:	EPA Method 418.1: TPH					
Client ID:	LCSS02	Batch ID:	20221	RunNo:	27456					
Prep Date:	7/13/2015	Analysis Date:	7/13/2015	SeqNo:	823657	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	100	20	100.0	0	103	83.6	116	1.35	20	

## 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      | ND Not Detected at the Reporting Limit               |
| O RSD is greater than RSDlimit                    | P Sample pH Not In Range                             |
| R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
| S Spike Recovery outside accepted recovery limits |  |

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507492

20-Jul-15

Client: Western Refining Southwest, Gallup

Project: FCC Overflow

Sample ID	mb-20225	SampType: MBLK			TestCode: EPA Method 8260B: Volatiles					
Client ID:	PBS	Batch ID: 20225			RunNo: 27500					
Prep Date:	7/13/2015	Analysis Date: 7/14/2015			SeqNo: 825178		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

## Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1507492

20-Jul-15

Client: Western Refining Southwest, Gallup

Project: FCC Overflow

Sample ID	mb-20225		SampType: MBLK		TestCode: EPA Method 8260B: Volatiles					
Client ID:	PBS		Batch ID: 20225		RunNo: 27500					
Prep Date:	7/13/2015		Analysis Date: 7/14/2015		SeqNo: 825178		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.51		0.5000		101	70	130			
Surr: 1,2-Dichloroethane-d4	0.49		0.5000		97.1	70	130			
Surr: Toluene-d8	0.49		0.5000		98.6	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		101	70	130			

Sample ID	lcs-20225		SampType: LCS		TestCode: EPA Method 8260B: Volatiles					
Client ID:	LCSS		Batch ID: 20225		RunNo: 27500					
Prep Date:	7/13/2015		Analysis Date: 7/14/2015		SeqNo: 825179		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	102	70	130			
Toluene	0.99	0.050	1.000	0	99.5	70	130			
Chlorobenzene	1.1	0.050	1.000	0	109	70	130			

### 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	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507492

20-Jul-15

Client: Western Refining Southwest, Gallup

Project: FCC Overflow

Sample ID	lcs-20225	SampType: LCS			TestCode: EPA Method 8260B: Volatiles					
Client ID:	LCSS	Batch ID: 20225			RunNo: 27500					
Prep Date:	7/13/2015	Analysis Date: 7/14/2015			SeqNo: 825179		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.2	0.050	1.000	0	122	60.6	134			
Trichloroethene (TCE)	0.96	0.050	1.000	0	96.5	70	130			
Surr: Dibromofluoromethane	0.52		0.5000		103	70	130			
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		100	70	130			
Surr: Toluene-d8	0.47		0.5000		94.8	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		96.1	70	130			

## Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit



# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507492

20-Jul-15

Client: Western Refining Southwest, Gallup

Project: FCC Overflow

Sample ID	MB-20245	SampType:	MBLK	TestCode:	EPA Method 7471: Mercury					
Client ID:	PBS	Batch ID:	20245	RunNo:	27519					
Prep Date:	7/14/2015	Analysis Date:	7/15/2015	SeqNo:	826138	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	LCS-20245	SampType:	LCS	TestCode:	EPA Method 7471: Mercury					
Client ID:	LCSS	Batch ID:	20245	RunNo:	27519					
Prep Date:	7/14/2015	Analysis Date:	7/15/2015	SeqNo:	826139	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	103	80	120			

## Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507492

20-Jul-15

Client: Western Refining Southwest, Gallup

Project: FCC Overflow

Sample ID	MB-20243	SampType:	MBLK	TestCode:	EPA Method 6010B: Soil Metals					
Client ID:	PBS	Batch ID:	20243	RunNo:	27516					
Prep Date:	7/14/2015	Analysis Date:	7/15/2015	SeqNo:	825951	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Arsenic	ND	2.5								
Barium	ND	0.10								
Cadmium	ND	0.10								
Calcium	ND	25								
Chromium	ND	0.30								
Lead	ND	0.25								
Magnesium	ND	25								
Potassium	ND	50								
Selenium	ND	2.5								
Silver	ND	0.25								
Sodium	ND	25								

Sample ID	LCS-20243	SampType:	LCS	TestCode:	EPA Method 6010B: Soil Metals					
Client ID:	LCSS	Batch ID:	20243	RunNo:	27516					
Prep Date:	7/14/2015	Analysis Date:	7/15/2015	SeqNo:	825952	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Arsenic	26	2.5	25.00	0	105	80	120			
Barium	25	0.10	25.00	0	100	80	120			
Cadmium	25	0.10	25.00	0	102	80	120			
Calcium	2700	25	2500	0	108	80	120			
Chromium	25	0.30	25.00	0	101	80	120			
Lead	25	0.25	25.00	0	101	80	120			
Magnesium	2600	25	2500	0	102	80	120			
Potassium	2400	50	2500	0	97.4	80	120			
Selenium	26	2.5	25.00	0	104	80	120			
Silver	5.1	0.25	5.000	0	102	80	120			
Sodium	2500	25	2500	0	101	80	120			

## Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit



Hall Environmental Analysis Laboratory  
4901 Hawks NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-245-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1507492

RcptNo: 1

Received by/date:

Logged By: Lindsay Mangin

7/10/2015 4:32:00 PM

Completed By: Lindsay Mangin

7/13/2015 9:08:36 AM

Reviewed By:

### Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☒

No ☐

Not Present ☐

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Client

### Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$

Yes ☒

No ☐

NA ☐

6. Sample(s) in proper container(s)?

Yes ☒

No ☐

7. Sufficient sample volume for indicated test(s)?

Yes ☒

No ☐

8. Are samples (except VOA and ONG) properly preserved?

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☐

No ☐

No VOA Vials ☒

11. Were any sample containers received broken?

Yes ☐

No ☒

12. Does paperwork match bottle labels?

Yes ☒

No ☐

(Note discrepancies on chain of custody)

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

Yes ☒

No ☐

(If no, notify customer for authorization.)

# of preserved  
bottles checked  
for pH:

(<2 or >12 unless noted)

Adjusted? \_\_\_\_\_

Checked by: \_\_\_\_\_

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐

No ☐

NA ☒

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.9	Good	Yes			



