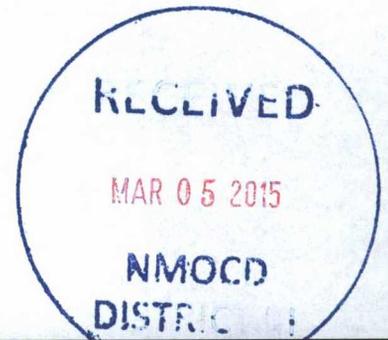


NM2-10

Annual Report

Date
2014



2014 Annual Report

Bisti Landfarm

**Western Refining Centralized Surface Waste
Management Facility NM-02-0010**

San Juan County, New Mexico

March 2015

District Copy
For Scanning Only
Has NOT been processed.

March 4, 2015

Mr. Brad Jones
New Mexico Energy, Minerals, & Natural Resources Department
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Certified Mailer#: 7012 3050 0002 4180 3033 (Santa Fe Office)

Certified Mailer#: 7012 3050 0002 4180 3156 (Aztec Office)

**Re: 2014 Annual Sampling Report
Western Refining Centralized Surface Waste Management Facility
Permit #: NM-02-0010
San Juan County, New Mexico**

Dear Mr. Jones,

Please find enclosed the 2014 Annual Sampling Report for the Western Refining Centralized Surface Waste Management Facility located in San Juan County, New Mexico. This report summarizes the sampling activities performed in 2014.

If you have any questions or require additional information, please do not hesitate to contact myself at 505-632-4169 or Kelly Robinson at 505-632-4166.

Sincerely,



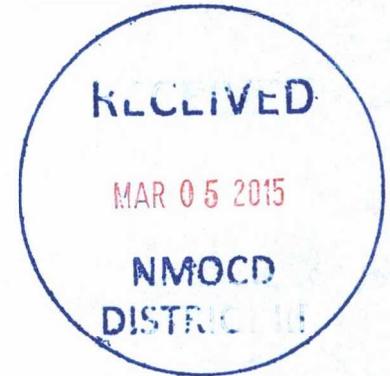
Matt Krakow
Environmental Coordinator
Western Logistics, LLC

cc: J. Kelly – OCD/EMNRD
R. Schmaltz – WNL
K. Robinson – WNL
A. Hains - WNR

2014 ANNUAL REPORT

**BISTI LANDFARM
WESTERN REFINING CENTRALIZED SURFACE WASTE
MANAGEMENT FACILITY NM-02-0010**

SAN JUAN COUNTY, NEW MEXICO



MARCH 2015



**WESTERN REFINING SOUTHWEST, INC.
111 County Road 4990
Bloomfield, New Mexico 87413**

2014 ANNUAL REPORT

**BISTI LANDFARM
WESTERN REFINING CENTRALIZED SURFACE WASTE
MANAGEMENT FACILITY NM-02-0010**

SAN JUAN COUNTY, NEW MEXICO

MARCH 2015

Prepared for:

**WESTERN REFINING SOUTHWEST, INC.
111 COUNTY ROAD 4990
BLOOMFIELD, NEW MEXICO 87413**

Prepared by:

**LT ENVIRONMENTAL, INC.
2243 Main Avenue, Suite 3
Durango, Colorado 81301
(970) 385-1096**



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EXECUTIVE SUMMARY

LT Environmental, Inc. (LTE), on behalf of Western Refining Southwest, Inc. (Western), has prepared this report detailing soil monitoring activities completed between January 2014 through December 2014 at the Bisti Landfarm (Site), permit number NM-02-0010, in San Juan County, New Mexico.

The Site is located in the northwest quarter of the southeast quarter of Section 16, Township 25 North, Range 12 West in San Juan County, New Mexico. The Bisti Landfarm was permitted in February 1998 under 711 Permit NM-02-0010 to Giant Industries, Arizona (Giant). Giant disposed of impacted soil at the Bisti Landfarm resulting in three cells: API Cell, Crude Cell (containing material originating from Pettigrew, East Line, Bisti, and West Line), and Cell 1. Cell 1 is inactive and no longer monitored or maintained. Western acquired the Bisti Landfarm from Giant in June 2007.

The scope of work for this project consisted of soil sampling including semi-annual treatment zone sampling and vadose zone sampling as required by New Mexico Administrative Code 19.15.36.15 (Rule 36) and quarterly vadose zone sampling as required by the original 711 permit. Soil sampling was conducted to monitor the natural attenuation of contaminants of concern in the treatment zone and to monitor potential migration of contaminants of concern into the vadose zone.

Soil sampling results are presented in the report and vadose zone soil analytical results are compared to the laboratory physical quantitation limit and background sample results, when available. Concentrations of total petroleum hydrocarbons (TPH) and chloride in the treatment zone are within the range of impacted soil undergoing treatment at the Site and do not exceed Treatment Zone Closure Performance Standards identified in Rule 36. Laboratory analytical results for vadose zone sampling were consistent with historical monitoring results.

Since treatment zone monitoring results do not exceed Treatment Zone Closure Performance Standards identified in Rule 36, Western will consider pursuing closure of the landfarm in 2015.

1.0 INTRODUCTION

LT Environmental, Inc. (LTE), on behalf of Western Refining Southwest, Inc. (Western), has prepared this report detailing work completed from January 2014 through December 2014 to monitor soil remediation at the Bisti Landfarm (Site), permit number NM-02-0010 in San Juan County, New Mexico.

1.1 SITE DESCRIPTION AND HISTORY

The Site occupies approximately 28 acres in the northwest quarter of the southeast quarter of Section 16, Township 25 North, Range 12 West in San Juan County, New Mexico (Figure 1). In 1998, Giant Industries, Arizona (Giant) permitted the Site as a surface waste management facility under the New Mexico Oil Conservation Division (NMOCD) Rule 711. Giant disposed of impacted soil at the Bisti Landfarm resulting in three cells: API Cell, Crude Cell (containing material originating from Pettigrew, East Line, Bisti, and West Line) and Cell 1, which is currently inactive (Figure 2). In 2007, the NMOCD passed new rules (19.15.36 of the New Mexico Administrative Code [NMAC] [Rule 36]) pertaining to surface waste management facilities and required compliance with the transitional provisions of Rule 36. Western acquired the Bisti Landfarm from Giant in June 2007 and disposed of soil at the Site until 2010. Western continues to monitor and maintain the API Cell and the Crude Cell using the provisional requirements of Rule 711 and Rule 36 as a guide. Cell 1 is no longer tilled based on a letter dated March 8, 2004, from the NMOCD to Giant stating Cell 1 was approved for discontinued maintenance.

1.2 SCOPE OF WORK

The scope of work for this project consisted of soil sampling including semi-annual treatment zone sampling and vadose zone sampling as required by Rule 36 and quarterly vadose zone sampling as required by the original 711 permit. Soil sampling was conducted to monitor the natural attenuation of contaminants of concern in the treatment zone and to monitor potential migration of contaminants of concern into the vadose zone. A summary of field activities, laboratory analytical soil sampling results, and conclusions are presented in the subsequent sections of this report.

2.0 METHODOLOGY

2.1 SEMI-ANNUAL TREATMENT ZONE MONITORING

Treatment zones in the API and Crude cells were composite sampled semi-annually on March 6, 2014, and September 29, 2014, by placing discrete samples collected from approximately 6 inches below the ground surface into a 1-gallon plastic bag. The soil within the bag was thoroughly mixed before filling glass sampling jars provided by the laboratory. The Crude Cell treatment zone samples included four discrete samples one each from the Pettigrew, Bisti, West Line, and East Line source areas. The API Cell treatment zone samples included four discrete samples from the API Cell. Figure 3 depicts treatment zone soil sample locations. Treatment zone samples were analyzed for total petroleum hydrocarbons (TPH)-gasoline range organics (GRO), diesel range organics (DRO), and motor oil range organics (MRO) by United States Environmental Protection Agency (USEPA) Method 8015B, and chloride by USEPA Method 300.0. In a letter dated April 8, 2014, the NMOCD requested Western included analysis of treatment zone soil samples for TPH according to USEPA Method 418.1. Western collected additional treatment zone composite samples from the API and Crude cells on June 17, 2014, for TPH analysis and added the additional analytical method to all future treatment zone sampling events.

2.2 QUARTERLY VADOSE ZONE MONITORING

Discrete vadose zone samples were collected quarterly on March 6, 2014, June 17, 2014, September 29 2014, and December 22 2014, from the two active cells (API and Crude cells) and analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) by USEPA Method 8021B, TPH-GRO, DRO, and MRO by USEPA Method 8015, and chloride by USEPA Method 300.0. To address annual sampling requirements in the original 711 permit in March 2014, soil samples were analyzed for sulfate by USEPA Method 300.0, metals (arsenic, barium, cadmium, calcium, chromium, lead, magnesium, potassium, selenium, silver, and sodium) by USEPA Method 6010B, mercury by USEPA Method 7471, and alkalinity by ASA10-3. As requested by the NMOCD in a letter dated April 8, 2014, all vadose zone samples collected in June, September, and December were also analyzed by USEPA Method 418.1 as required in Rule 36. All future vadose zone samples will be analyzed for TPH by USEPA Method 418.1. The number of vadose zone samples collected within each cell was dependent on the size of the cell. For each sampling event, four soil samples were collected from the Crude Cell: one beneath the East Line source area, one beneath the West Line source area, one beneath the Pettigrew source area, and one beneath the Bisti source area. One sample was collected from beneath the API Cell. Figure 4 depicts quarterly vadose zone soil sample locations. All vadose zone soil samples were collected from 3 feet to 4 feet below natural ground surface and boreholes were filled with hydrated bentonite from total depth to ground surface upon completion.

All samples collected were placed on ice and sealed in a cooler for delivery to Hall Environmental Analysis Laboratory, Inc. in Albuquerque, New Mexico, for analysis. Soil samples were labeled with the date and time of collection, sample name, sampler's name, and parameters to be analyzed. Strict chain-of-custody procedures were documented including the

date and time sampled, sample number, type of sample, sampler's name and signature, preservative used, and analyses required.

3.0 ANALYTICAL RESULTS

3.1 SEMI-ANNUAL TREATMENT ZONE ANALYTICAL RESULTS

Table 1 presents the analytical results from the treatment zone monitoring events in March, June, and September 2014, which are compared to the Treatment Zone Closure Performance Standards defined in Rule 36. The complete laboratory reports are presented in Appendix A.

3.2 QUARTERLY VADOSE ZONE ANALYTICAL RESULTS

The laboratory analytical results from quarterly vadose zone soil samples compared to the laboratory physical quantitation limit (PQL) and background sample results, when available, are presented in Table 2. The complete laboratory analytical reports are presented in Appendix A.

4.0 CONCLUSIONS

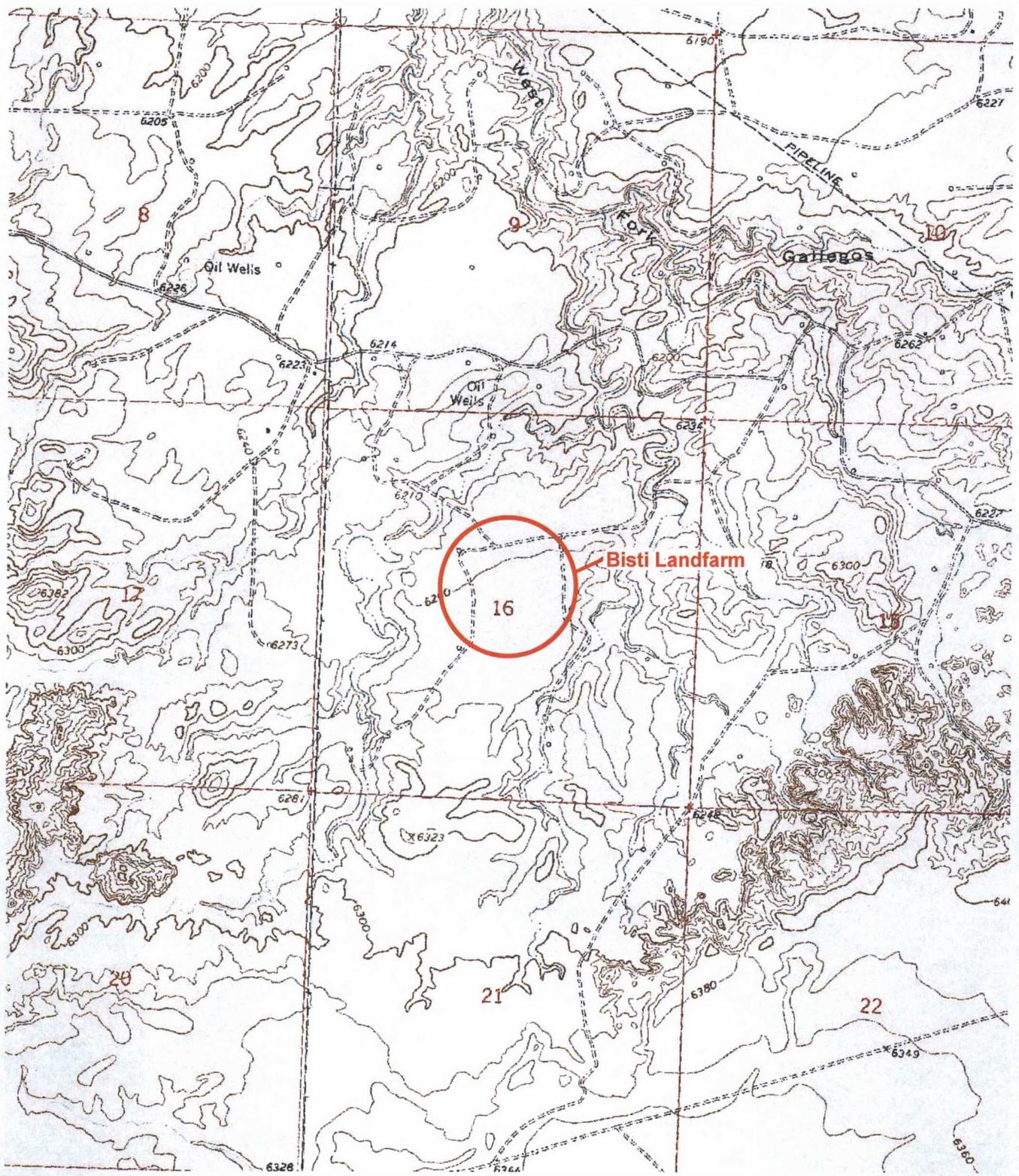
Concentrations of TPH and chloride in the treatment zone have been remediated to below Treatment Zone Closure Performance Standards identified in Rule 36.

Western conducted vadose zone soil sampling in accordance with the original 711 permit and Rule 36, and results were compared to laboratory PQLs and background concentrations for review. Laboratory analytical results were consistent with historical monitoring results. Based on previous vadose zone sampling results, Western submitted a Release Response Plan to the NMOCD on December 31, 2009. Upon approval from the NMOCD, Western initiated the Release Response Plan, and results were reported to the NMOCD on June 3, 2010.

5.0 RECOMMENDATIONS

Since Western is no longer accepting impacted soil at the Site and treatment zone monitoring results do not exceed Treatment Zone Closure Performance Standards identified in Rule 36, Western will be pursuing closure of the landfarm under a separate submittal. Western will continue monitoring the Bisti Landfarm until a closure request is approved.

FIGURES



LEGEND

 SITE LOCATION

IMAGE COURTESY OF USDA/NRCS, VARIOUS DATES

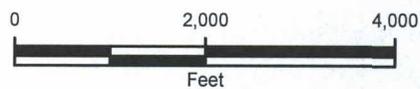


FIGURE 1
SITE LOCATION MAP
BISTI LANDFARM
SEC 16 T25N R12W
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.





IMAGE COURTESY OF GOOGLE EARTH, 06/10/2011

LEGEND

- x — x FENCE
- APPROXIMATE SOURCE IDENTITY BOUNDARY
- CELL 1 BOUNDARY
- API CELL BOUNDARY
- CRUDE CELL BOUNDARY

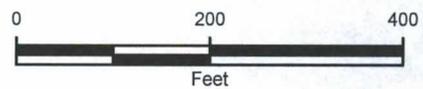


FIGURE 2
SITE MAP
 BISTI LANDFARM
 SEC 16 T25N R12W
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.



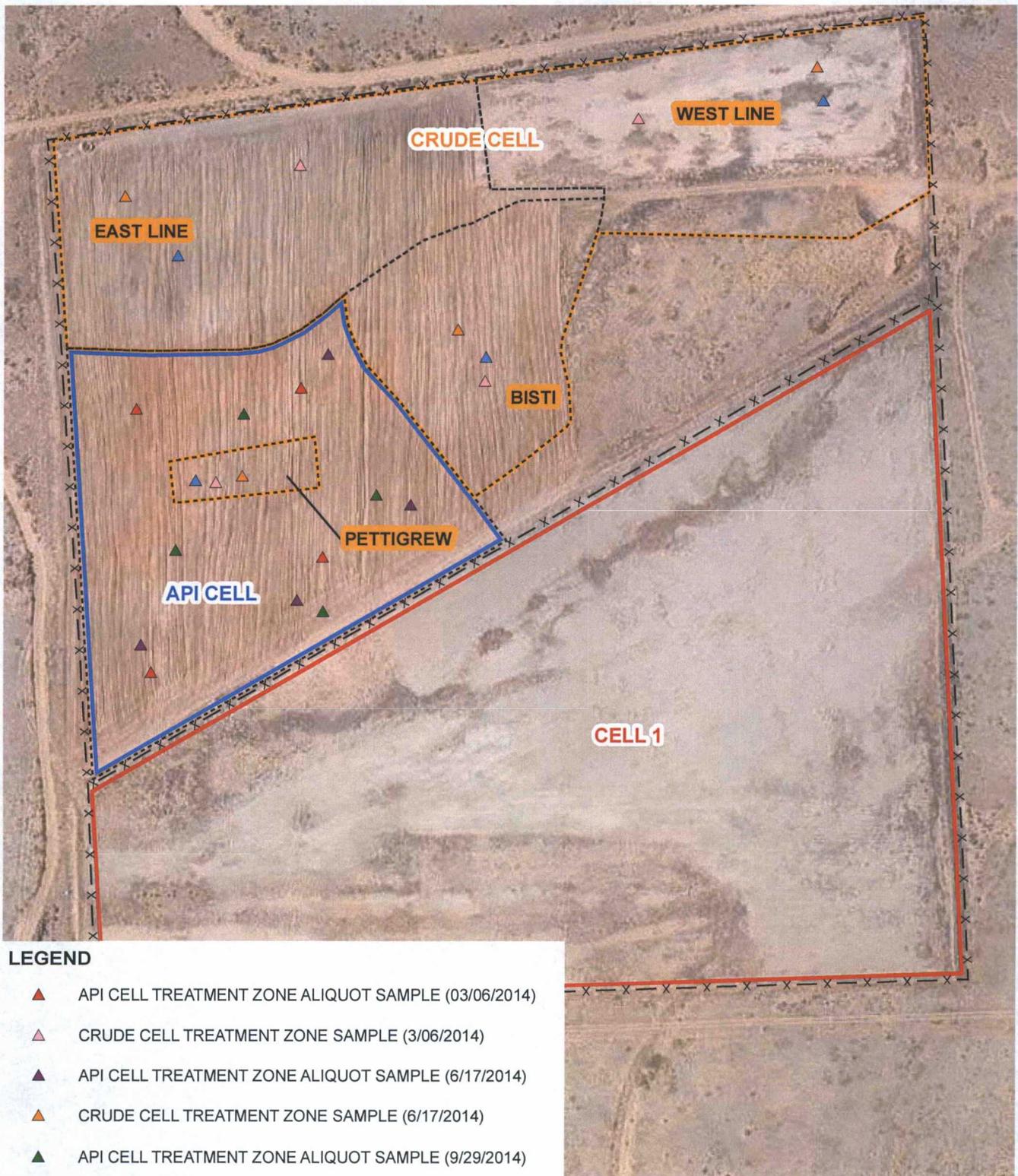


IMAGE COURTESY OF GOOGLE EARTH, 06/10/2011

LEGEND

- ▲ API CELL TREATMENT ZONE ALIQUOT SAMPLE (03/06/2014)
- ▲ CRUDE CELL TREATMENT ZONE SAMPLE (3/06/2014)
- ▲ API CELL TREATMENT ZONE ALIQUOT SAMPLE (6/17/2014)
- ▲ CRUDE CELL TREATMENT ZONE SAMPLE (6/17/2014)
- ▲ API CELL TREATMENT ZONE ALIQUOT SAMPLE (9/29/2014)
- ▲ CRUDE CELL TREATMENT ZONE ALIQUOT SAMPLE (9/29/2014)

- x — x FENCE
- APPROXIMATE SOURCE IDENTITY BOUNDARY
- CELL 1 BOUNDARY
- API CELL BOUNDARY
- CRUDE CELL BOUNDARY

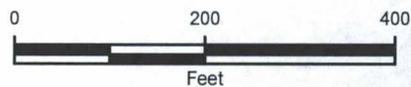


FIGURE 3
TREATMENT ZONE SAMPLE LOCATION MAP
 BISTI LANDFARM
 SEC 16 T25N R12W
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.



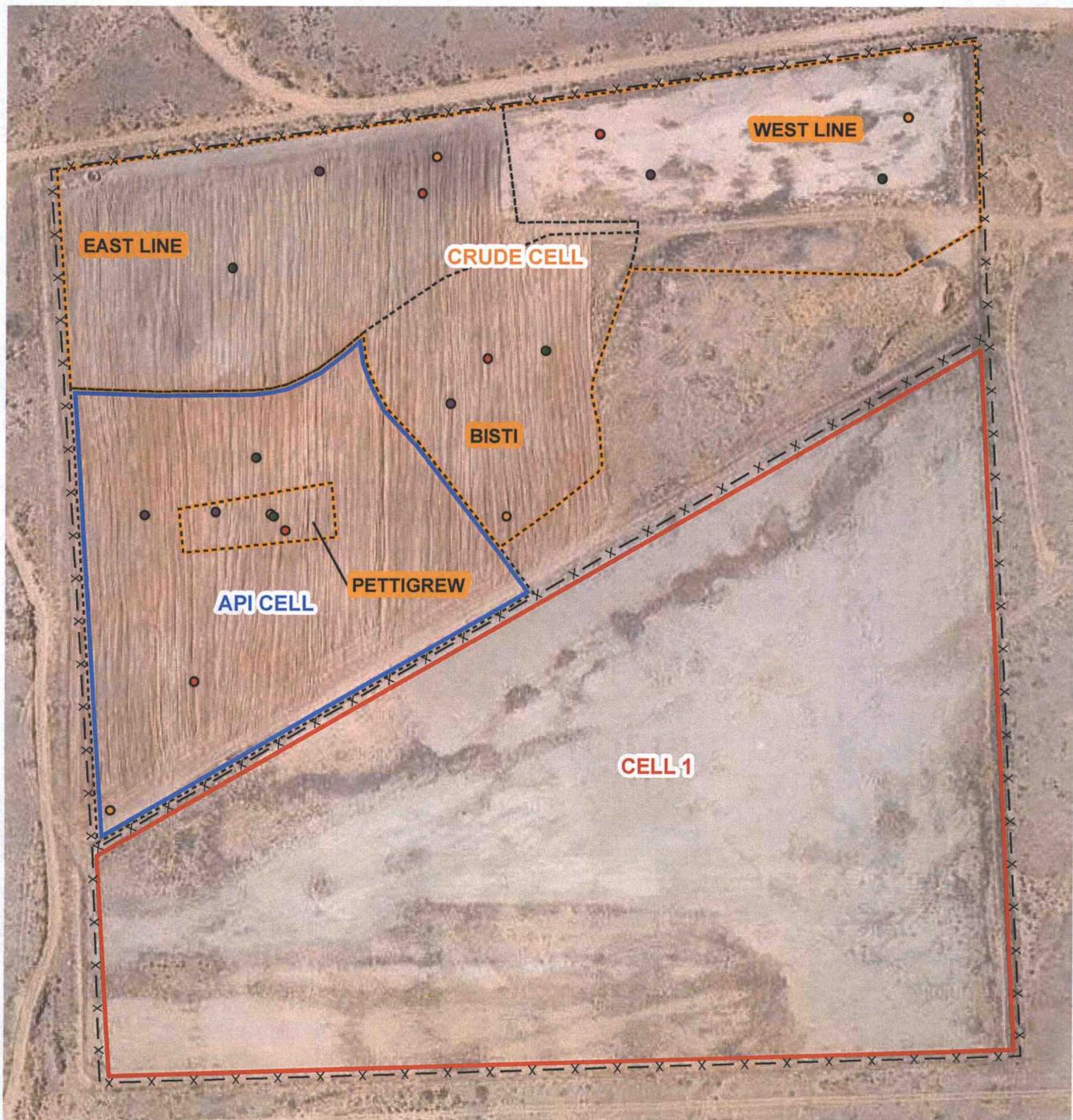


IMAGE COURTESY OF GOOGLE EARTH, 06/10/2011

LEGEND

- QUARTERLY VADOSE ZONE SOIL SAMPLE (COLLECTED 3/6/2014)
- QUARTERLY VADOSE ZONE SOIL SAMPLE (COLLECTED 6/17/2014)
- QUARTERLY VADOSE ZONE SOIL SAMPLE (COLLECTED 9/29/2014)
- QUARTERLY VADOSE ZONE SOIL SAMPLE (COLLECTED 12/29/2014)
- x — x FENCE
- - - - - APPROXIMATE SOURCE IDENTITY BOUNDARY
- ▭ CELL 1 BOUNDARY
- ▭ API CELL BOUNDARY
- ▭ CRUDE CELL BOUNDARY

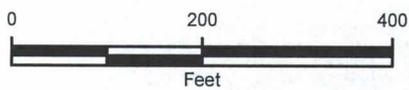


FIGURE 4
 VADOSE ZONE SAMPLE LOCATION MAP
 BISTI LANDFARM
 SEC 16 T25N R12W
 SAN JUAN COUNTY, NEW MEXICO
 WESTERN REFINING SOUTHWEST, INC.



TABLES

TABLE 1
2014 TREATMENT ZONE SOIL ANALYTICAL RESULTS
BISTI LANDFARM
WESTERN REFINING SOUTHWEST, INC.

Cell	Sample ID	Sample Date	GRO (mg/kg)	DRO (mg/kg)	MRO (mg/kg)	TPH 418.1 (mg/kg)	Chloride (mg/kg)
19.15.36.15 Treatment Zone Closure Performance Standards			GRO + DRO = 500		NE	2,500	1,000
Crude Cell	Crude Cell Treatment Zone	6-Mar-14	<4.7	66	88	NA	150
	Crude Treatment Zone	17-Jun-14	NA	NA	NA	400	NA
	Crude Cell Treatment Zone	29-Sep-14	<4.8	40	82	94	110
API Cell	API Cell Treatment Zone	6-Mar-14	<5.0	<10	<50	NA	12
	API Treatment Zone	17-Jun-14	NA	NA	NA	110	NA
	API Cell Treatment Zone	29-Sep-14	<4.7	12	<50	42	500

Notes:

DRO - Diesel Range Organics

GRO - Gasoline Range Organics

MRO - Motor Oil Range Organics

mg/kg - milligrams per kilograms

NA-Not Analyzed

NE - Not Established

TPH- Total petroleum hydrocarbons

< indicates result is less than the stated method reporting limit

TABLE 2
 2014 QUARTERLY VADOSE ZONE SOIL ANALYTICAL RESULTS
 BISTI LANDFARM
 WESTERN REFINING SOUTHWEST, INC.

Cell	Source Area	Sample ID	Sample Date	GRO (mg/kg)	DRO (mg/kg)	MRO (mg/kg)	TPH 418.1 (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Chloride (mg/kg)	Sulfate (mg/kg)	Alkalinity (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Calcium (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Magnesium (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sodium (mg/kg)	Mercury (mg/kg)	
Crude Cell	West Line	Westline Vadose Zone	6-Mar-14	<4.6	<9.9	<50	NA	<0.046	<0.046	<0.046	<0.092	1.5	47	128	<2.4	61	<0.095	2,600	1.7	1.6	920	530	<2.4	<0.24	150	<0.033	
		West Line Vadose	17-Jun-14	<4.8	<10	<50	<20	<0.048	<0.048	<0.048	<0.097	<30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		West Line Vadose Zone	29-Sep-14	<4.6	<10	<50	<20	<0.046	<0.046	<0.046	<0.093	<30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	East Line	Westline	22-Dec-14	<4.9	24	<50	52	<0.049	<0.049	<0.049	<0.098	3.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		Eastline Vadose Zone	6-Mar-14	<4.8	<9.9	<50	NA	<0.048	<0.048	<0.048	<0.095	2.6	93	105	<2.4	97	<0.096	3,500	3.9	2.1	1,700	1,300	<2.4	<0.24	100	<0.034	
		East Line Vadose	17-Jun-14	<5.0	<10	<50	<20	<0.050	<0.050	<0.050	<0.099	<30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
		East Line Vadose Zone	29-Sep-14	<4.8	25	<49	96	<0.048	<0.048	<0.048	<0.096	<30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
		Eastline	22-Dec-14	<4.6	<10	<50	<20	<0.046	<0.046	<0.046	<0.093	3.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
		Bisti	6-Mar-14	<4.7	<10	<51	NA	<0.047	<0.047	<0.047	<0.094	4.3	27	112	<2.5	110	<0.10	5,000	3.6	2.0	1,500	950	<2.5	<0.25	55	<0.034	
	Bisti	Bisti Vadose Zone	17-Jun-14	<4.9	<10	<50	<20	<0.049	<0.049	<0.049	<0.098	<30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
		Bisti Vadose Zone	29-Sep-14	<4.9	<9.9	<50	<20	<0.049	<0.049	<0.049	<0.098	<30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
		Bisti	22-Dec-14	<4.6	<9.9	<50	<20	<0.046	<0.046	<0.046	<0.092	6.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	Pettigrew	Pettigrew Vadose Zone	6-Mar-14	<4.7	<10	<50	NA	<0.047	<0.047	<0.047	<0.094	2,200	180	61	<2.4	92	<0.097	2,500	2.3	1.5	1,000	740	<2.4	<0.24	1200	<0.033	
		Pettigrew Vadose Zone	17-Jun-14	<4.7	<10	<50	21	<0.047	<0.047	<0.047	<0.093	120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
		Pettigrew Vadose Zone	29-Sep-14	<4.8	<9.9	<49	<20	<0.048	<0.048	<0.048	<0.096	780	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Pettigrew		22-Dec-14	<4.7	<10	<50	<20	<0.047	<0.047	<0.047	<0.095	350	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
API Cell	API	API Vadose Zone	6-Mar-14	<4.7	<10	<50	NA	<0.047	<0.047	<0.047	<0.094	59	150	91	<2.5	130	<0.10	2,400	2.1	1.5	1,000	580	<2.5	<0.25	250	<0.033	
		API Vadose Zone	17-Jun-14	<4.6	<10	<50	<20	<0.046	<0.046	<0.046	<0.093	<30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
		API Vadose Zone	29-Sep-14	<4.8	<10	<50	<20	<0.048	<0.048	<0.048	<0.097	2,300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
		API Cell	22-Dec-14	<4.7	<10	<50	<20	<0.047	<0.047	<0.047	<0.094	<1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Background Sample				27-Mar-98	NA	<50	NA	NA	<0.05	<0.05	<0.05	<0.05	180	NA	2.8	180	<1.3	NA	<5.0	6.8	NA	NA	<2.5	<1.3	NA	<0.50	
Reporting Limit*					4.6	9.9	49	<20	0.046	0.046	0.046	0.092	1.5	1.5	4	2.4	0.10	0.95	25	0.30	0.25	25	50	2.4	0.24	25	0.033

Notes:

DRO - Diesel Range Organics

GRO - Gasoline Range Organics

MRO - Motor Oil Range Organics

mg/kg - milligrams per kilograms

NA - Not Analyzed

TPH- Total Petroleum Hydrocarbons

< indicates result is less than the stated method reporting limit

* LTE used Reporting Limit as the Physical Quantitation Limit. If different Reporting Limits are listed for different samples, the lowest Reporting Limit is provided.

APPENDIX A
LABORATORY ANALYTICAL REPORTS



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

April 10, 2014

Ashley Ager

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (970) 946-1093

FAX

RE: Bisti Landfarm Vadose Zone Sampling

OrderNo.: 1403280

Dear Ashley Ager:

Hall Environmental Analysis Laboratory received 5 sample(s) on 3/7/2014 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued March 31, 2014.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to 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,

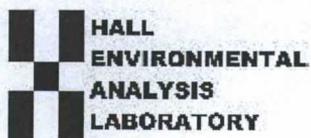
A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109



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

Case Narrative

WO#: 1403280
Date: 4/10/2014

CLIENT: Western Refining Southwest, Inc.
Project: Bisti Landfarm Vadose Zone Sampling

Analytical Notes Regarding Alkalinity in soil:

The "L" flag is used to denote the lowest available reporting limit for the analytical method used.

Analytical Report

Lab Order 1403280

Date Reported: 4/10/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Westline Vadose Zone

Project: Bisti Landfarm Vadose Zone Sampling

Collection Date: 3/6/2014 1:15:00 PM

Lab ID: 1403280-001

Matrix: SOIL

Received Date: 3/7/2014 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: BCN
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	3/12/2014 2:57:05 PM	12115
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/12/2014 2:57:05 PM	12115
Surr: DNOP	122	66-131		%REC	1	3/12/2014 2:57:05 PM	12115
EPA METHOD 8015D: GASOLINE RANGE							Analyst: JMP
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	3/12/2014 1:01:38 PM	12124
Surr: BFB	84.2	74.5-129		%REC	1	3/12/2014 1:01:38 PM	12124
EPA METHOD 8021B: VOLATILES							Analyst: JMP
Benzene	ND	0.046		mg/Kg	1	3/12/2014 1:01:38 PM	12124
Toluene	ND	0.046		mg/Kg	1	3/12/2014 1:01:38 PM	12124
Ethylbenzene	ND	0.046		mg/Kg	1	3/12/2014 1:01:38 PM	12124
Xylenes, Total	ND	0.092		mg/Kg	1	3/12/2014 1:01:38 PM	12124
Surr: 4-Bromofluorobenzene	102	80-120		%REC	1	3/12/2014 1:01:38 PM	12124
EPA METHOD 300.0: ANIONS							Analyst: JRR
Chloride	1.5	1.5		mg/Kg	1	3/11/2014 2:40:31 PM	12116
Sulfate	47	1.5		mg/Kg	1	3/11/2014 2:40:31 PM	12116
EPA METHOD 7471: MERCURY							Analyst: JML
Mercury	ND	0.033		mg/Kg	1	3/13/2014 8:19:19 PM	12137
EPA METHOD 6010B: SOIL METALS							Analyst: ELS
Arsenic	ND	2.4		mg/Kg	1	3/12/2014 11:01:48 AM	12121
Barium	61	0.095		mg/Kg	1	3/12/2014 11:01:48 AM	12121
Cadmium	ND	0.095		mg/Kg	1	3/12/2014 11:01:48 AM	12121
Calcium	2600	24		mg/Kg	1	3/12/2014 11:01:48 AM	12121
Chromium	1.7	0.29		mg/Kg	1	3/12/2014 11:01:48 AM	12121
Lead	1.6	0.24		mg/Kg	1	3/12/2014 11:01:48 AM	12121
Magnesium	920	24		mg/Kg	1	3/12/2014 11:01:48 AM	12121
Potassium	530	48		mg/Kg	1	3/12/2014 11:01:48 AM	12121
Selenium	ND	2.4		mg/Kg	1	3/12/2014 11:01:48 AM	12121
Silver	ND	0.24		mg/Kg	1	3/12/2014 11:01:48 AM	12121
Sodium	150	24		mg/Kg	1	3/13/2014 10:34:36 AM	12121

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.
- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1403280

Date Reported: 4/10/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Eastline Vadose Zone

Project: Bisti Landfarm Vadose Zone Sampling

Collection Date: 3/6/2014 1:45:00 PM

Lab ID: 1403280-002

Matrix: SOIL

Received Date: 3/7/2014 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							
Analyst: BCN							
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	3/12/2014 3:19:16 PM	12115
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/12/2014 3:19:16 PM	12115
Surr: DNOP	127	66-131		%REC	1	3/12/2014 3:19:16 PM	12115
EPA METHOD 8015D: GASOLINE RANGE							
Analyst: JMP							
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/12/2014 2:55:48 PM	12124
Surr: BFB	86.2	74.5-129		%REC	1	3/12/2014 2:55:48 PM	12124
EPA METHOD 8021B: VOLATILES							
Analyst: JMP							
Benzene	ND	0.048		mg/Kg	1	3/12/2014 2:55:48 PM	12124
Toluene	ND	0.048		mg/Kg	1	3/12/2014 2:55:48 PM	12124
Ethylbenzene	ND	0.048		mg/Kg	1	3/12/2014 2:55:48 PM	12124
Xylenes, Total	ND	0.095		mg/Kg	1	3/12/2014 2:55:48 PM	12124
Surr: 4-Bromofluorobenzene	106	80-120		%REC	1	3/12/2014 2:55:48 PM	12124
EPA METHOD 300.0: ANIONS							
Analyst: JRR							
Chloride	2.6	1.5		mg/Kg	1	3/11/2014 3:30:10 PM	12116
Sulfate	93	1.5		mg/Kg	1	3/11/2014 3:30:10 PM	12116
EPA METHOD 7471: MERCURY							
Analyst: JML							
Mercury	ND	0.034		mg/Kg	1	3/13/2014 8:21:08 PM	12137
EPA METHOD 6010B: SOIL METALS							
Analyst: ELS							
Arsenic	ND	2.4		mg/Kg	1	3/12/2014 11:04:38 AM	12121
Barium	97	0.096		mg/Kg	1	3/12/2014 11:04:38 AM	12121
Cadmium	ND	0.096		mg/Kg	1	3/12/2014 11:04:38 AM	12121
Calcium	3500	24		mg/Kg	1	3/12/2014 11:04:38 AM	12121
Chromium	3.9	0.29		mg/Kg	1	3/12/2014 11:04:38 AM	12121
Lead	2.1	0.24		mg/Kg	1	3/12/2014 11:04:38 AM	12121
Magnesium	1700	24		mg/Kg	1	3/12/2014 11:04:38 AM	12121
Potassium	1300	48		mg/Kg	1	3/12/2014 11:04:38 AM	12121
Selenium	ND	2.4		mg/Kg	1	3/12/2014 11:04:38 AM	12121
Silver	ND	0.24		mg/Kg	1	3/12/2014 11:04:38 AM	12121
Sodium	100	24		mg/Kg	1	3/13/2014 10:35:57 AM	12121

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.
- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1403280

Date Reported: 4/10/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Bisti Vadose Zone

Project: Bisti Landfarm Vadose Zone Sampling

Collection Date: 3/6/2014 2:11:00 PM

Lab ID: 1403280-003

Matrix: SOIL

Received Date: 3/7/2014 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: BCN
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/13/2014 11:10:20 AM	12115
Motor Oil Range Organics (MRO)	ND	51		mg/Kg	1	3/13/2014 11:10:20 AM	12115
Surr: DNOP	110	66-131		%REC	1	3/13/2014 11:10:20 AM	12115
EPA METHOD 8015D: GASOLINE RANGE							Analyst: JMP
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/12/2014 5:18:41 PM	12124
Surr: BFB	84.3	74.5-129		%REC	1	3/12/2014 5:18:41 PM	12124
EPA METHOD 8021B: VOLATILES							Analyst: JMP
Benzene	ND	0.047		mg/Kg	1	3/12/2014 5:18:41 PM	12124
Toluene	ND	0.047		mg/Kg	1	3/12/2014 5:18:41 PM	12124
Ethylbenzene	ND	0.047		mg/Kg	1	3/12/2014 5:18:41 PM	12124
Xylenes, Total	ND	0.094		mg/Kg	1	3/12/2014 5:18:41 PM	12124
Surr: 4-Bromofluorobenzene	101	80-120		%REC	1	3/12/2014 5:18:41 PM	12124
EPA METHOD 300.0: ANIONS							Analyst: JRR
Chloride	4.3	1.5		mg/Kg	1	3/11/2014 4:19:48 PM	12116
Sulfate	27	1.5		mg/Kg	1	3/11/2014 4:19:48 PM	12116
EPA METHOD 7471: MERCURY							Analyst: JML
Mercury	ND	0.034		mg/Kg	1	3/13/2014 8:22:59 PM	12137
EPA METHOD 6010B: SOIL METALS							Analyst: ELS
Arsenic	ND	2.5		mg/Kg	1	3/12/2014 11:07:18 AM	12121
Barium	110	0.10		mg/Kg	1	3/12/2014 11:07:18 AM	12121
Cadmium	ND	0.10		mg/Kg	1	3/12/2014 11:07:18 AM	12121
Calcium	5000	25		mg/Kg	1	3/12/2014 11:07:18 AM	12121
Chromium	3.6	0.30		mg/Kg	1	3/12/2014 11:07:18 AM	12121
Lead	2.0	0.25		mg/Kg	1	3/12/2014 11:07:18 AM	12121
Magnesium	1500	25		mg/Kg	1	3/12/2014 11:07:18 AM	12121
Potassium	950	50		mg/Kg	1	3/12/2014 11:07:18 AM	12121
Selenium	ND	2.5		mg/Kg	1	3/12/2014 11:07:18 AM	12121
Silver	ND	0.25		mg/Kg	1	3/12/2014 11:07:18 AM	12121
Sodium	55	25		mg/Kg	1	3/13/2014 10:37:20 AM	12121

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.
- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc. **Client Sample ID:** Pettigrew Vadose Zone
Project: Bisti Landfarm Vadose Zone Sampling **Collection Date:** 3/6/2014 2:36:00 PM
Lab ID: 1403280-004 **Matrix:** SOIL **Received Date:** 3/7/2014 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							
Analyst: BCN							
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/12/2014 4:29:20 PM	12115
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/12/2014 4:29:20 PM	12115
Surr: DNOP	104	66-131		%REC	1	3/12/2014 4:29:20 PM	12115
EPA METHOD 8015D: GASOLINE RANGE							
Analyst: JMP							
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/12/2014 5:47:13 PM	12124
Surr: BFB	83.8	74.5-129		%REC	1	3/12/2014 5:47:13 PM	12124
EPA METHOD 8021B: VOLATILES							
Analyst: JMP							
Benzene	ND	0.047		mg/Kg	1	3/12/2014 5:47:13 PM	12124
Toluene	ND	0.047		mg/Kg	1	3/12/2014 5:47:13 PM	12124
Ethylbenzene	ND	0.047		mg/Kg	1	3/12/2014 5:47:13 PM	12124
Xylenes, Total	ND	0.094		mg/Kg	1	3/12/2014 5:47:13 PM	12124
Surr: 4-Bromofluorobenzene	99.3	80-120		%REC	1	3/12/2014 5:47:13 PM	12124
EPA METHOD 300.0: ANIONS							
Analyst: JRR							
Chloride	2200	75		mg/Kg	50	3/14/2014 3:34:44 PM	12116
Sulfate	180	30		mg/Kg	20	3/11/2014 4:57:02 PM	12116
EPA METHOD 7471: MERCURY							
Analyst: JML							
Mercury	ND	0.033		mg/Kg	1	3/13/2014 8:24:51 PM	12137
EPA METHOD 6010B: SOIL METALS							
Analyst: ELS							
Arsenic	ND	2.4		mg/Kg	1	3/12/2014 11:10:10 AM	12121
Barium	92	0.097		mg/Kg	1	3/12/2014 11:10:10 AM	12121
Cadmium	ND	0.097		mg/Kg	1	3/12/2014 11:10:10 AM	12121
Calcium	2500	24		mg/Kg	1	3/12/2014 11:10:10 AM	12121
Chromium	2.3	0.29		mg/Kg	1	3/12/2014 11:10:10 AM	12121
Lead	1.5	0.24		mg/Kg	1	3/12/2014 11:10:10 AM	12121
Magnesium	1000	24		mg/Kg	1	3/12/2014 11:10:10 AM	12121
Potassium	740	49		mg/Kg	1	3/12/2014 11:10:10 AM	12121
Selenium	ND	2.4		mg/Kg	1	3/12/2014 11:10:10 AM	12121
Silver	ND	0.24		mg/Kg	1	3/12/2014 11:10:10 AM	12121
Sodium	1200	24		mg/Kg	1	3/13/2014 10:38:42 AM	12121

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	Page 5 of 12
	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		

Analytical Report

Lab Order 1403280

Date Reported: 4/10/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: API Vadose Zone

Project: Bisti Landfarm Vadose Zone Sampling

Collection Date: 3/6/2014 2:50:00 PM

Lab ID: 1403280-005

Matrix: SOIL

Received Date: 3/7/2014 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: BCN
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/12/2014 4:51:32 PM	12115
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/12/2014 4:51:32 PM	12115
Surr: DNOP	97.3	66-131		%REC	1	3/12/2014 4:51:32 PM	12115
EPA METHOD 8015D: GASOLINE RANGE							Analyst: JMP
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/12/2014 6:15:44 PM	12124
Surr: BFB	86.4	74.5-129		%REC	1	3/12/2014 6:15:44 PM	12124
EPA METHOD 8021B: VOLATILES							Analyst: JMP
Benzene	ND	0.047		mg/Kg	1	3/12/2014 6:15:44 PM	12124
Toluene	ND	0.047		mg/Kg	1	3/12/2014 6:15:44 PM	12124
Ethylbenzene	ND	0.047		mg/Kg	1	3/12/2014 6:15:44 PM	12124
Xylenes, Total	ND	0.094		mg/Kg	1	3/12/2014 6:15:44 PM	12124
Surr: 4-Bromofluorobenzene	104	80-120		%REC	1	3/12/2014 6:15:44 PM	12124
EPA METHOD 300.0: ANIONS							Analyst: JRR
Chloride	59	30		mg/Kg	20	3/11/2014 5:21:51 PM	12116
Sulfate	150	30		mg/Kg	20	3/11/2014 5:21:51 PM	12116
EPA METHOD 7471: MERCURY							Analyst: JML
Mercury	ND	0.033		mg/Kg	1	3/13/2014 8:26:42 PM	12137
EPA METHOD 6010B: SOIL METALS							Analyst: ELS
Arsenic	ND	2.5		mg/Kg	1	3/12/2014 11:12:52 AM	12121
Barium	130	0.10		mg/Kg	1	3/12/2014 11:12:52 AM	12121
Cadmium	ND	0.10		mg/Kg	1	3/12/2014 11:12:52 AM	12121
Calcium	2400	25		mg/Kg	1	3/12/2014 11:12:52 AM	12121
Chromium	2.1	0.30		mg/Kg	1	3/12/2014 11:12:52 AM	12121
Lead	1.5	0.25		mg/Kg	1	3/12/2014 11:12:52 AM	12121
Magnesium	1000	25		mg/Kg	1	3/12/2014 11:12:52 AM	12121
Potassium	580	50		mg/Kg	1	3/12/2014 11:12:52 AM	12121
Selenium	ND	2.5		mg/Kg	1	3/12/2014 11:12:52 AM	12121
Silver	ND	0.25		mg/Kg	1	3/12/2014 11:12:52 AM	12121
Sodium	250	25		mg/Kg	1	3/13/2014 10:40:03 AM	12121

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.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	



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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Revised Date: 04/01/14

Report Date: 03/28/14

Collection Date: 03/06/14 13:15

Date Received: 03/26/14

Matrix: Soil

Client: Hall Environmental
Project: Not Indicated
Lab ID: B14031926-001
Client Sample ID: 1403280-001D Westline Vadose Zone

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CHEMICAL CHARACTERISTICS							
Total Alkalinity	128	mg/kg	L	4		ASA10-3	03/27/14 12:43 / jwc
Carbonate	5	mg/kg	L	4		ASA10-3	03/27/14 12:43 / jwc
Bicarbonate	146	mg/kg	L	4		ASA10-3	03/27/14 12:43 / jwc
Hydroxide	ND	mg/kg	L	4		ASA10-3	03/27/14 12:43 / jwc

Report Definitions:
 RL - Analyte reporting limit.
 QCL - Quality control limit.
 L - Lowest available reporting limit for the analytical method used.

MCL - Maximum contaminant level.
 ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: B14031926-002
Client Sample ID: 1403280-002D Eastline Vadose Zone

Revised Date: 04/01/14
Report Date: 03/28/14
Collection Date: 03/06/14 13:45
Date Received: 03/26/14
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CHEMICAL CHARACTERISTICS							
Total Alkalinity	105	mg/kg	L	4		ASA10-3	03/27/14 13:09 / jwc
Carbonate	ND	mg/kg	L	4		ASA10-3	03/27/14 13:09 / jwc
Bicarbonate	128	mg/kg	L	4		ASA10-3	03/27/14 13:09 / jwc
Hydroxide	ND	mg/kg	L	4		ASA10-3	03/27/14 13:09 / jwc

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
L - Lowest available reporting limit for the analytical method used.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: B14031926-003
Client Sample ID: 1403280-003D Bistl Vadose Zone

Revised Date: 04/01/14
Report Date: 03/28/14
Collection Date: 03/06/14 14:11
Date Received: 03/26/14
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CHEMICAL CHARACTERISTICS							
Total Alkalinity	112	mg/kg	L	4		ASA10-3	03/27/14 13:31 / jwc
Carbonate	ND	mg/kg	L	4		ASA10-3	03/27/14 13:31 / jwc
Bicarbonate	137	mg/kg	L	4		ASA10-3	03/27/14 13:31 / jwc
Hydroxide	ND	mg/kg	L	4		ASA10-3	03/27/14 13:31 / jwc

Report Definitions:
 RL - Analyte reporting limit.
 QCL - Quality control limit.
 L - Lowest available reporting limit for the analytical method used.

MCL - Maximum contaminant level.
 ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: B14031926-004
Client Sample ID: 1403280-004D Pettigrew Vadose Zone

Revised Date: 04/01/14
Report Date: 03/28/14
Collection Date: 03/06/14 14:36
Date Received: 03/26/14
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CHEMICAL CHARACTERISTICS							
Total Alkalinity	61	mg/kg	L	4		ASA10-3	03/27/14 13:43 / jwc
Carbonate	5	mg/kg	L	4		ASA10-3	03/27/14 13:43 / jwc
Bicarbonate	65	mg/kg	L	4		ASA10-3	03/27/14 13:43 / jwc
Hydroxide	ND	mg/kg	L	4		ASA10-3	03/27/14 13:43 / jwc

Report Definitions:
 RL - Analyte reporting limit.
 QCL - Quality control limit.
 L - Lowest available reporting limit for the analytical method used.

MCL - Maximum contaminant level.
 ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: B14031926-005
Client Sample ID: 1403280-005D API Vadose Zone

Revised Date: 04/01/14
Report Date: 03/28/14
Collection Date: 03/06/14 14:50
Date Received: 03/26/14
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
CHEMICAL CHARACTERISTICS							
Total Alkalinity	91	mg/kg	L	4		ASA10-3	03/27/14 14:09 / jwc
Carbonate	5	mg/kg	L	4		ASA10-3	03/27/14 14:09 / jwc
Bicarbonate	100	mg/kg	L	4		ASA10-3	03/27/14 14:09 / jwc
Hydroxide	ND	mg/kg	L	4		ASA10-3	03/27/14 14:09 / jwc

Report Definitions:
 RL - Analyte reporting limit.
 QCL - Quality control limit.
 L - Lowest available reporting limit for the analytical method used.

MCL - Maximum contaminant level.
 ND - Not detected at the reporting limit.



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QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental

Report Date: 03/27/14

Project: Not Indicated

Work Order: B14031926

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: ASA10-3										Batch: 78547
Lab ID: LCS-78547		Laboratory Control Sample								Run: ORION555A_140327A 03/27/14 12:33
Total Alkalinity		116	mg/kg	4.0	81	50	150			
Lab ID: B14031926-002A DUP	4	Sample Duplicate								Run: ORION555A_140327A 03/27/14 13:26
Total Alkalinity		106	mg/kg	4.0				1.3	30	
Carbonate		ND	mg/kg	4.0					30	
Bicarbonate		129	mg/kg	4.0				1.4	30	
Hydroxide		ND	mg/kg	4.0						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1403280
10-Apr-14

Client: Western Refining Southwest, Inc.
Project: Bisti Landfarm Vadose Zone Sampling

Sample ID	MB-12116	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	12116	RunNo:	17243					
Prep Date:	3/11/2014	Analysis Date:	3/11/2014	SeqNo:	496465	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								
Sulfate	ND	1.5								

Sample ID	LCS-12116	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	12116	RunNo:	17243					
Prep Date:	3/11/2014	Analysis Date:	3/11/2014	SeqNo:	496466	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.3	90	110			
Sulfate	28	1.5	30.00	0	94.2	90	110			

Sample ID	1403280-001BMS	SampType:	MS	TestCode:	EPA Method 300.0: Anions					
Client ID:	Westline Vadose Zo	Batch ID:	12116	RunNo:	17243					
Prep Date:	3/11/2014	Analysis Date:	3/11/2014	SeqNo:	496481	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	1.537	91.6	71.3	115			
Sulfate	67	1.5	30.00	46.79	67.1	32.2	146			

Sample ID	1403280-001BMSD	SampType:	MSD	TestCode:	EPA Method 300.0: Anions					
Client ID:	Westline Vadose Zo	Batch ID:	12116	RunNo:	17243					
Prep Date:	3/11/2014	Analysis Date:	3/11/2014	SeqNo:	496482	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	1.537	92.7	71.3	115	1.09	20	
Sulfate	73	1.5	30.00	46.79	87.4	32.2	146	8.72	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#: 1403280

10-Apr-14

Client: Western Refining Southwest, Inc.
Project: Bisti Landfarm Vadose Zone Sampling

Sample ID MB-12115	SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range Organics							
Client ID: PBS	Batch ID: 12115		RunNo: 17240							
Prep Date: 3/11/2014	Analysis Date: 3/12/2014		SeqNo: 496883				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	66	131			

Sample ID LCS-12115	SampType: LCS		TestCode: EPA Method 8015D: Diesel Range Organics							
Client ID: LCSS	Batch ID: 12115		RunNo: 17240							
Prep Date: 3/11/2014	Analysis Date: 3/12/2014		SeqNo: 496884				Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	10	50.00	0	114	60.8	145			
Surr: DNOP	5.8		5.000		116	66	131			

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#: 1403280

10-Apr-14

Client: Western Refining Southwest, Inc.
Project: Bisti Landfarm Vadose Zone Sampling

Sample ID MB-12124	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 12124	RunNo: 17249								
Prep Date: 3/11/2014	Analysis Date: 3/12/2014	SeqNo: 497263			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		85.4	74.5	129			

Sample ID LCS-12124	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 12124	RunNo: 17249								
Prep Date: 3/11/2014	Analysis Date: 3/12/2014	SeqNo: 497264			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	5.0	25.00	0	115	71.7	134			
Surr: BFB	920		1000		91.9	74.5	129			

Sample ID 1403280-002AMS	SampType: MS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: Eastline Vadose Zo	Batch ID: 12124	RunNo: 17249								
Prep Date: 3/11/2014	Analysis Date: 3/12/2014	SeqNo: 497269			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	34	4.7	23.50	0	145	69.5	145			S
Surr: BFB	880		939.8		93.8	74.5	129			

Sample ID 1403280-002AMSD	SampType: MSD	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: Eastline Vadose Zo	Batch ID: 12124	RunNo: 17249								
Prep Date: 3/11/2014	Analysis Date: 3/12/2014	SeqNo: 497270			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	35	4.7	23.52	0	148	69.5	145	2.09	20	S
Surr: BFB	890		940.7		94.9	74.5	129	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#: 1403280

10-Apr-14

Client: Western Refining Southwest, Inc.
Project: Bisti Landfarm Vadose Zone Sampling

Sample ID	MB-12124	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	12124	RunNo:	17249					
Prep Date:	3/11/2014	Analysis Date:	3/12/2014	SeqNo:	497293	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	1.1		1.000		106	80	120			

Sample ID	1403280-001AMS	SampType:	MS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	Westline Vadose Zo	Batch ID:	12124	RunNo:	17249					
Prep Date:	3/11/2014	Analysis Date:	3/12/2014	SeqNo:	497296	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.3	0.046	0.9268	0	136	67.4	135			S
Toluene	1.3	0.046	0.9268	0	141	72.6	135			S
Ethylbenzene	1.3	0.046	0.9268	0	142	69.4	143			
Xylenes, Total	4.0	0.093	2.780	0	143	70.8	144			
Surr: 4-Bromofluorobenzene	1.0		0.9268		110	80	120			

Sample ID	1403280-001AMSD	SampType:	MSD	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	Westline Vadose Zo	Batch ID:	12124	RunNo:	17249					
Prep Date:	3/11/2014	Analysis Date:	3/12/2014	SeqNo:	497297	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.046	0.9268	0	130	67.4	135	4.48	20	
Toluene	1.2	0.046	0.9268	0	134	72.6	135	5.26	20	
Ethylbenzene	1.2	0.046	0.9268	0	133	69.4	143	6.25	20	
Xylenes, Total	3.7	0.093	2.780	0	134	70.8	144	6.63	20	
Surr: 4-Bromofluorobenzene	1.0		0.9268		109	80	120	0	0	

Sample ID	LCS-12124	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	12124	RunNo:	17249					
Prep Date:	3/11/2014	Analysis Date:	3/12/2014	SeqNo:	497379	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.050	1.000	0	120	80	120			S
Toluene	1.2	0.050	1.000	0	120	80	120			
Ethylbenzene	1.2	0.050	1.000	0	117	80	120			
Xylenes, Total	3.6	0.10	3.000	0	119	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		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
- 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#: 1403280

10-Apr-14

Client: Western Refining Southwest, Inc.
Project: Bisti Landfarm Vadose Zone Sampling

Sample ID	MB-12137	SampType:	MBLK	TestCode:	EPA Method 7471: Mercury					
Client ID:	PBS	Batch ID:	12137	RunNo:	17318					
Prep Date:	3/11/2014	Analysis Date:	3/13/2014	SeqNo:	498736	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	LCS-12137	SampType:	LCS	TestCode:	EPA Method 7471: Mercury					
Client ID:	LCSS	Batch ID:	12137	RunNo:	17318					
Prep Date:	3/11/2014	Analysis Date:	3/13/2014	SeqNo:	498737	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	99.9	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#: 1403280

10-Apr-14

Client: Western Refining Southwest, Inc.
Project: Bisti Landfarm Vadose Zone Sampling

Sample ID	MB-12121	SampType:	MBLK	TestCode:	EPA Method 6010B: Soil Metals					
Client ID:	PBS	Batch ID:	12121	RunNo:	17248					
Prep Date:	3/11/2014	Analysis Date:	3/12/2014	SeqNo:	496724	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								

Sample ID	LCS-12121	SampType:	LCS	TestCode:	EPA Method 6010B: Soil Metals					
Client ID:	LCSS	Batch ID:	12121	RunNo:	17248					
Prep Date:	3/11/2014	Analysis Date:	3/12/2014	SeqNo:	496725	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	24	2.5	25.00	0	94.3	80	120			
Barium	25	0.10	25.00	0	100	80	120			
Cadmium	25	0.10	25.00	0	100	80	120			
Calcium	2500	25	2500	0	98.0	80	120			
Chromium	25	0.30	25.00	0	98.4	80	120			
Lead	24	0.25	25.00	0	94.4	80	120			
Magnesium	2400	25	2500	0	97.9	80	120			
Potassium	2400	50	2500	0	96.4	80	120			
Selenium	24	2.5	25.00	0	96.8	80	120			
Silver	5.0	0.25	5.000	0	99.1	80	120			

Sample ID	MB-12121	SampType:	MBLK	TestCode:	EPA Method 6010B: Soil Metals					
Client ID:	PBS	Batch ID:	12121	RunNo:	17278					
Prep Date:	3/11/2014	Analysis Date:	3/13/2014	SeqNo:	497626	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	ND	25								

Sample ID	LCS-12121	SampType:	LCS	TestCode:	EPA Method 6010B: Soil Metals					
Client ID:	LCSS	Batch ID:	12121	RunNo:	17278					
Prep Date:	3/11/2014	Analysis Date:	3/13/2014	SeqNo:	497627	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	2500	25	2500	0	98.8	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



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 Southw Work Order Number: 1403280 RcptNo: 1

Received by/date: Am 03/07/14

Logged By: Ashley Gallegos 3/7/2014 10:00:00 AM *AG*

Completed By: Ashley Gallegos 3/7/2014 10:50:39 AM *AG*

Reviewed By: ams 3/11/14

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? UPS

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

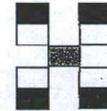
Person Notified: _____ Date: _____
 By Whom: _____ Via: eMail Phone Fax In Person
 Regarding: _____
 Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No.	Temp °C	Condition	Seal Intact	Seal No.	Seal Date	Signed By
1	1.3	Good	Yes			

Chain-of-Custody Record



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Client: Western Refining
 Kelly Robinson
 Mailing Address: 111 CR 4990
Bloomfield, NM 87413
 Phone #: 505-632-8013
 email or Fax#: _____
 QA/QC Package:
 Standard Level 4 (Full Validation)
 Accreditation
 NELAP Other _____
 EDD (Type) _____

Turn-Around Time:
 Standard Rush
 Project Name:
Distri Landfarm VADOSE ZONE Sampling
 Project #:
WR1005
 Project Manager:
Ashley Agee
 Sampler: D. Henemann & D. Newman
 On Ice: Yes No
 Sample Temperature: 3

Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MIRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	See Attached	Air Bubbles (Y or N)
											X	
											X	
											X	
											X	
											X	

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
3/6/14	1315	Soil	WESTLINE VADOSE ZONE	402/4	Cool	-001
3/6/14	1345	Soil	EASTLINE VADOSE ZONE	402/4	Cool	-002
3/6/14	1411	Soil	Distri VADOSE ZONE	402/4	Cool	-003
3/6/14	1436	Soil	Pettigrew VADOSE ZONE	402/4	Cool	-004
3/6/14	1450	Soil	API VADOSE ZONE	402/4	Cool	-005

Date: 3/6/14 Time: 11:17 Relinquished by: [Signature]
 Date: 3/6/14 Time: 1754 Relinquished by: Christie Walker

Received by: Christie Walker Date: 3/6/14 Time: 1617
 Received by: [Signature] Date: 03/07/14 Time: 1000

Remarks:
 Please copy results to
aager@henv.com

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Vadose

GRO (mg/kg)
DRO (mg/kg)
MRO (mg/kg)
Benzene (mg/kg)
Toluene (mg/kg)
Ethylbenzene (mg/kg)
Total Xylenes (mg/kg)
Chloride (mg/kg)
Sulfate (mg/kg)
Alkalinity (mg/kg)
Arsenic (mg/kg)
Barium (mg/kg)
Cadmium (mg/kg)
Calcium (mg/kg)
Chromium (mg/kg)
Lead (mg/kg)
Magnesium (mg/kg)
Potassium (mg/kg)
Selenium (mg/kg)
Silver (mg/kg)
Sodium (mg/kg)
Mercury (mg/kg)



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

March 17, 2014

Ashley Ager
Western Refining Southwest, Inc.
#50 CR 4990
Bloomfield, NM 87413
TEL: (970) 946-1093
FAX

RE: Bisti Landfarm Treatment Zone Sampling

OrderNo.: 1403284

Dear Ashley Ager:

Hall Environmental Analysis Laboratory received 2 sample(s) on 3/7/2014 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 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 light blue horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1403284

Date Reported: 3/17/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Crude Cell Treatment Zone

Project: Bisti Landfarm Treatment Zone Sampling

Collection Date: 3/6/2014 2:31:00 PM

Lab ID: 1403284-001

Matrix: SOIL

Received Date: 3/7/2014 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: BCN
Diesel Range Organics (DRO)	66	10		mg/Kg	1	3/13/2014 11:32:18 AM	12115
Motor Oil Range Organics (MRO)	88	50		mg/Kg	1	3/13/2014 11:32:18 AM	12115
Surr: DNOP	114	66-131		%REC	1	3/13/2014 11:32:18 AM	12115
EPA METHOD 8015D: GASOLINE RANGE							Analyst: JMP
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/12/2014 4:21:32 PM	12124
Surr: BFB	87.5	74.5-129		%REC	1	3/12/2014 4:21:32 PM	12124
EPA METHOD 300.0: ANIONS							Analyst: JRR
Chloride	150	30		mg/Kg	20	3/13/2014 7:01:26 AM	12145

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.
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S Spike Recovery outside accepted recovery limits	

Analytical Report

Lab Order 1403284

Date Reported: 3/17/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: API Cell Treatment Zone

Project: Bisti Landfarm Treatment Zone Sampling

Collection Date: 3/6/2014 3:01:00 PM

Lab ID: 1403284-002

Matrix: SOIL

Received Date: 3/7/2014 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: BCN
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/13/2014 11:54:29 AM	12115
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/13/2014 11:54:29 AM	12115
Surr: DNOP	109	66-131		%REC	1	3/13/2014 11:54:29 AM	12115
EPA METHOD 8015D: GASOLINE RANGE							Analyst: JMP
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/12/2014 4:50:06 PM	12124
Surr: BFB	85.5	74.5-129		%REC	1	3/12/2014 4:50:06 PM	12124
EPA METHOD 300.0: ANIONS							Analyst: JRR
Chloride	12	1.5		mg/Kg	1	3/13/2014 7:13:51 AM	12145

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.
	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#: 1403284

17-Mar-14

Client: Western Refining Southwest, Inc.
Project: Bisti Landfarm Treatment Zone Sampling

Sample ID	MB-12145	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	12145	RunNo:	17276					
Prep Date:	3/12/2014	Analysis Date:	3/12/2014	SeqNo:	497582	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-12145	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	12145	RunNo:	17276					
Prep Date:	3/12/2014	Analysis Date:	3/12/2014	SeqNo:	497583	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.1	90	110			

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#: 1403284

17-Mar-14

Client: Western Refining Southwest, Inc.
Project: Bisti Landfarm Treatment Zone Sampling

Sample ID MB-12115	SampType: MBLK	TestCode: EPA Method 8015D: Diesel Range Organics								
Client ID: PBS	Batch ID: 12115	RunNo: 17240								
Prep Date: 3/11/2014	Analysis Date: 3/12/2014	SeqNo: 496883			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	66	131			

Sample ID LCS-12115	SampType: LCS	TestCode: EPA Method 8015D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 12115	RunNo: 17240								
Prep Date: 3/11/2014	Analysis Date: 3/12/2014	SeqNo: 496884			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	10	50.00	0	114	60.8	145			
Surr: DNOP	5.8		5.000		116	66	131			

Sample ID MB-12127	SampType: MBLK	TestCode: EPA Method 8015D: Diesel Range Organics								
Client ID: PBS	Batch ID: 12127	RunNo: 17275								
Prep Date: 3/11/2014	Analysis Date: 3/13/2014	SeqNo: 498023			Units: %REC					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.1		10.00		91.2	66	131			

Sample ID LCS-12127	SampType: LCS	TestCode: EPA Method 8015D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 12127	RunNo: 17275								
Prep Date: 3/11/2014	Analysis Date: 3/13/2014	SeqNo: 498432			Units: %REC					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		94.5	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.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1403284

17-Mar-14

Client: Western Refining Southwest, Inc.
Project: Bisti Landfarm Treatment Zone Sampling

Sample ID MB-12124	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: 12124		RunNo: 17249							
Prep Date: 3/11/2014	Analysis Date: 3/12/2014		SeqNo: 497263		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		85.4	74.5	129			

Sample ID LCS-12124	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: 12124		RunNo: 17249							
Prep Date: 3/11/2014	Analysis Date: 3/12/2014		SeqNo: 497264		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	5.0	25.00	0	115	71.7	134			
Surr: BFB	920		1000		91.9	74.5	129			

Sample ID MB-12124 MK	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: R17249		RunNo: 17249							
Prep Date:	Analysis Date: 3/12/2014		SeqNo: 497276		Units: %REC					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	850		1000		85.4	74.5	129			

Sample ID LCS-12124 MK	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: R17249		RunNo: 17249							
Prep Date:	Analysis Date: 3/12/2014		SeqNo: 497277		Units: %REC					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	920		1000		91.9	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.
- RL Reporting Detection Limit

Sample Log-In Check List

Client Name: **Western Refining Southw**

Work Order Number: **1403284**

ReptNo: 1

Received by/date: *Jim* **03/07/14**

Logged By: **Ashley Gallegos** **3/7/2014 10:00:00 AM** *AG*

Completed By: **Ashley Gallegos** **3/7/2014 11:12:07 AM** *AG*

Reviewed By: *KWS* **3/11/14**

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

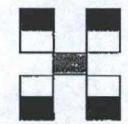
Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.3	Good	Yes			

25

Chain-of-Custody Record

Client: Western Refining
Kelly Robinson
 Mailing Address: 111 CR4990
Bloomfield NM 87413
 Phone #: 505-632-8013
 email or Fax#:
 QA/QC Package:
 Standard Level 4 (Full Validation)
 Accreditation
 NELAP Other _____
 EDD (Type) _____

Project Name:
Bisti Landfarm
Treatment Zone Sampling
 Project #:
WR 1005
 Project Manager:
Ashley Ager
 Sampler: D. Hermann & D. Newman
 On Ice: Yes No
 Sample Temperature: 1.3



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com
 4901 Hawkins NE - Albuquerque, NM 87109
 Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Chlorides 300	
3/6/14	1431	Soil	Crude Cell Treatment Zone	9oz/1	Cool	1403284 -001			X										X
3/6/14	1501	Soil	API Cell Treatment Zone	9oz/1	Cool	-002			X										X

Date: 3/6/14 Time: 1607 Relinquished by: [Signature]
 Received by: Christine Wallen Date: 3/6/14 Time: 1607
 Date: 3/6/14 Time: 1754 Relinquished by: Christine Wallen
 Received by: [Signature] Date: 03/07/14 Time: 1000

Remarks:
Please copy Results to
aager@henv.com

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



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

June 18, 2014

Ashley Ager
Western Refining Southwest, Inc.
#50 CR 4990
Bloomfield, NM 87413
TEL: (970) 946-1093
FAX (505) 632-3911

RE: Bisti Landfarm

OrderNo.: 1406814

Dear Ashley Ager:

Hall Environmental Analysis Laboratory received 2 sample(s) on 6/18/2014 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 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 light blue horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order 1406814
Date Reported: 6/18/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Crude Treatment Zone

Project: Bisti Landfarm

Collection Date: 6/17/2014 10:32:00 AM

Lab ID: 1406814-001

Matrix: SOIL

Received Date: 6/18/2014 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH							Analyst: JME
Petroleum Hydrocarbons, TR	400	20		mg/Kg	1	6/18/2014 12:00:00 PM	13756

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.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Analytical Report

Lab Order 1406814

Date Reported: 6/18/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: API Treatment Zone

Project: Bisti Landfarm

Collection Date: 6/17/2014 10:52:00 AM

Lab ID: 1406814-002

Matrix: SOIL

Received Date: 6/18/2014 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH							
Petroleum Hydrocarbons, TR	110	20		mg/Kg	1	6/18/2014 12:00:00 PM	13756

Analyst: JME

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.
	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#: 1406814
 18-Jun-14

Client: Western Refining Southwest, Inc.
Project: Bisti Landfarm

Sample ID MB-13756	SampType: MBLK		TestCode: EPA Method 418.1: TPH							
Client ID: PBS	Batch ID: 13756		RunNo: 19338							
Prep Date: 6/18/2014	Analysis Date: 6/18/2014		SeqNo: 559119		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-13756	SampType: LCS		TestCode: EPA Method 418.1: TPH							
Client ID: LCSS	Batch ID: 13756		RunNo: 19338							
Prep Date: 6/18/2014	Analysis Date: 6/18/2014		SeqNo: 559120		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	81	20	100.0	0	81.1	80	120			

Sample ID LCSD-13756	SampType: LCSD		TestCode: EPA Method 418.1: TPH							
Client ID: LCSS02	Batch ID: 13756		RunNo: 19338							
Prep Date: 6/18/2014	Analysis Date: 6/18/2014		SeqNo: 559121		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	87	20	100.0	0	86.6	80	120	6.58	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 | |

Sample Log-In Check List

Client Name: **Western Refining Southw** Work Order Number: **1406814** RcptNo: 1

Received by/date: *Jim 06/18/14*

Logged By: **Ashley Gallegos** 6/18/2014 7:40:00 AM *AG*

Completed By: **Ashley Gallegos** 6/18/2014 8:04:02 AM *AG*

Reviewed By: *JO* 06/18/2014

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 # of preserved bottles checked for pH: (<2 or >12 unless noted)
- 12. Does paperwork match bottle labels? Yes No Adjusted?
- 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 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	2.1	Good	Yes			

Chain-of-Custody Record

Turn-Around Time:

Standard Rush 48-hr

Project Name:

Bisti Landfarm

Project #:

WR1005

Project Manager:

Ashley Ager

Sampler:

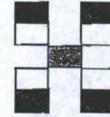
Brooke Herb

On Ice:

Yes No

Sample Temperature:

2.1



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Client: Western Refining
Kelly Robinson
 Mailing Address: 111 CR 4990
Bloomfield, NM 87413
 Phone #: 505 632-8013
 Email or Fax#: _____
 QA/QC Package:
 Standard Level 4 (Full Validation)
 Accreditation
 NELAP Other _____
 EDD (Type) _____

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
17-14	1032	soil	Crude Treatment Zone	402/1	COOL	1406814 -001				✓								
17-14	1052	↓	API Treatment Zone	402/1	COOL	-002				✓								

Date: 17/14 Time: 1410 Relinquished by: [Signature]
 Date: 17/14 Time: 1725 Relinquished by: Christa Waller

Received by: [Signature] Date: 4/17/10 Time: 1410
 Received by: [Signature] Date: 06/18/14 Time: 0740

Remarks: email results to aager@Henv.com

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



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

July 14, 2014

Ashley Ager
Western Refining Southwest, Inc.
#50 CR 4990
Bloomfield, NM 87413
TEL: (970) 946-1093
FAX (505) 632-3911

RE: Bisti Landfarm

OrderNo.: 1406816

Dear Ashley Ager:

Hall Environmental Analysis Laboratory received 5 sample(s) on 6/18/2014 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 23, 2014.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to 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 that reads 'John Caldwell'. The signature is written in a cursive style and is enclosed within a thin black rectangular border.

John Caldwell
Supervisor
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1406816

Date Reported: 7/14/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: API Vadose Zone

Project: Bisti Landfarm

Collection Date: 6/17/2014 11:40:00 AM

Lab ID: 1406816-001

Matrix: SOIL

Received Date: 6/18/2014 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: BCN
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/20/2014 9:14:15 PM	13782
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/20/2014 9:14:15 PM	13782
Surr: DNOP	93.5	57.9-140		%REC	1	6/20/2014 9:14:15 PM	13782
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	6/19/2014 12:46:45 PM	13763
Surr: BFB	87.7	80-120		%REC	1	6/19/2014 12:46:45 PM	13763
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.046		mg/Kg	1	6/19/2014 12:46:45 PM	13763
Toluene	ND	0.046		mg/Kg	1	6/19/2014 12:46:45 PM	13763
Ethylbenzene	ND	0.046		mg/Kg	1	6/19/2014 12:46:45 PM	13763
Xylenes, Total	ND	0.093		mg/Kg	1	6/19/2014 12:46:45 PM	13763
Surr: 4-Bromofluorobenzene	99.0	80-120		%REC	1	6/19/2014 12:46:45 PM	13763
EPA METHOD 300.0: ANIONS							Analyst: JRR
Chloride	ND	30		mg/Kg	20	6/19/2014 12:10:28 PM	13786
EPA METHOD 418.1: TPH							Analyst: JME
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	6/18/2014 12:00:00 PM	13756

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.
R	RPD outside accepted recovery limits	RL Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits	

Analytical Report

Lab Order **1406816**

Date Reported: 7/14/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: East Line Vadose

Project: Bisti Landfarm

Collection Date: 6/17/2014 11:01:00 AM

Lab ID: 1406816-002

Matrix: SOIL

Received Date: 6/18/2014 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: BCN
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/20/2014 9:44:19 PM	13782
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/20/2014 9:44:19 PM	13782
Surr: DNOP	115	57.9-140		%REC	1	6/20/2014 9:44:19 PM	13782
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/19/2014 2:17:12 PM	13763
Surr: BFB	86.9	80-120		%REC	1	6/19/2014 2:17:12 PM	13763
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.050		mg/Kg	1	6/19/2014 2:17:12 PM	13763
Toluene	ND	0.050		mg/Kg	1	6/19/2014 2:17:12 PM	13763
Ethylbenzene	ND	0.050		mg/Kg	1	6/19/2014 2:17:12 PM	13763
Xylenes, Total	ND	0.099		mg/Kg	1	6/19/2014 2:17:12 PM	13763
Surr: 4-Bromofluorobenzene	99.6	80-120		%REC	1	6/19/2014 2:17:12 PM	13763
EPA METHOD 300.0: ANIONS							Analyst: JRR
Chloride	ND	30		mg/Kg	20	6/19/2014 12:47:42 PM	13786
EPA METHOD 418.1: TPH							Analyst: JME
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	6/18/2014 12:00:00 PM	13756

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.
	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 1406816

Date Reported: 7/14/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: West Line Vadose

Project: Bisti Landfarm

Collection Date: 6/17/2014 10:37:00 AM

Lab ID: 1406816-003

Matrix: SOIL

Received Date: 6/18/2014 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: BCN
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/20/2014 10:14:16 PM	13782
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/20/2014 10:14:16 PM	13782
Surr: DNOP	92.8	57.9-140		%REC	1	6/20/2014 10:14:16 PM	13782
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	6/19/2014 3:47:47 PM	13763
Surr: BFB	97.3	80-120		%REC	1	6/19/2014 3:47:47 PM	13763
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	6/19/2014 3:47:47 PM	13763
Toluene	ND	0.048		mg/Kg	1	6/19/2014 3:47:47 PM	13763
Ethylbenzene	ND	0.048		mg/Kg	1	6/19/2014 3:47:47 PM	13763
Xylenes, Total	ND	0.097		mg/Kg	1	6/19/2014 3:47:47 PM	13763
Surr: 4-Bromofluorobenzene	114	80-120		%REC	1	6/19/2014 3:47:47 PM	13763
EPA METHOD 300.0: ANIONS							Analyst: JRR
Chloride	ND	30		mg/Kg	20	6/19/2014 1:00:07 PM	13786
EPA METHOD 418.1: TPH							Analyst: JME
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	6/18/2014 12:00:00 PM	13756

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.
	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 1406816

Date Reported: 7/14/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Bisti Vadose Zone

Project: Bisti Landfarm

Collection Date: 6/17/2014 11:22:00 AM

Lab ID: 1406816-004

Matrix: SOIL

Received Date: 6/18/2014 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: BCN
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/20/2014 10:44:00 PM	13782
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/20/2014 10:44:00 PM	13782
Surr: DNOP	97.4	57.9-140		%REC	1	6/20/2014 10:44:00 PM	13782
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/19/2014 4:17:55 PM	13763
Surr: BFB	87.0	80-120		%REC	1	6/19/2014 4:17:55 PM	13763
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.049		mg/Kg	1	6/19/2014 4:17:55 PM	13763
Toluene	ND	0.049		mg/Kg	1	6/19/2014 4:17:55 PM	13763
Ethylbenzene	ND	0.049		mg/Kg	1	6/19/2014 4:17:55 PM	13763
Xylenes, Total	ND	0.098		mg/Kg	1	6/19/2014 4:17:55 PM	13763
Surr: 4-Bromofluorobenzene	99.6	80-120		%REC	1	6/19/2014 4:17:55 PM	13763
EPA METHOD 300.0: ANIONS							Analyst: JRR
Chloride	ND	30		mg/Kg	20	6/19/2014 1:12:31 PM	13786
EPA METHOD 418.1: TPH							Analyst: JME
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	6/18/2014 12:00:00 PM	13756

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.
	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 1406816

Date Reported: 7/14/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Pettigrew Vadose Zone

Project: Bisti Landfarm

Collection Date: 6/17/2014 11:50:00 AM

Lab ID: 1406816-005

Matrix: SOIL

Received Date: 6/18/2014 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: BCN
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/20/2014 11:14:02 PM	13782
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/20/2014 11:14:02 PM	13782
Surr: DNOP	95.6	57.9-140		%REC	1	6/20/2014 11:14:02 PM	13782
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	6/19/2014 4:47:59 PM	13763
Surr: BFB	96.2	80-120		%REC	1	6/19/2014 4:47:59 PM	13763
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.047		mg/Kg	1	6/19/2014 4:47:59 PM	13763
Toluene	ND	0.047		mg/Kg	1	6/19/2014 4:47:59 PM	13763
Ethylbenzene	ND	0.047		mg/Kg	1	6/19/2014 4:47:59 PM	13763
Xylenes, Total	ND	0.093		mg/Kg	1	6/19/2014 4:47:59 PM	13763
Surr: 4-Bromofluorobenzene	112	80-120		%REC	1	6/19/2014 4:47:59 PM	13763
EPA METHOD 300.0: ANIONS							Analyst: JRR
Chloride	120	30		mg/Kg	20	6/19/2014 1:24:55 PM	13786
EPA METHOD 418.1: TPH							Analyst: JME
Petroleum Hydrocarbons, TR	21	20		mg/Kg	1	6/18/2014 12:00:00 PM	13756

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.
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#: 1406816
 14-Jul-14

Client: Western Refining Southwest, Inc.
Project: Bisti Landfarm

Sample ID MB-13786	SampType: MBLK	TestCode: EPA Method 300.0: Anions								
Client ID: PBS	Batch ID: 13786	RunNo: 19409								
Prep Date: 6/19/2014	Analysis Date: 6/19/2014	SeqNo: 561447	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID LCS-13786	SampType: LCS	TestCode: EPA Method 300.0: Anions								
Client ID: LCSS	Batch ID: 13786	RunNo: 19409								
Prep Date: 6/19/2014	Analysis Date: 6/19/2014	SeqNo: 561448	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.9	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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1406816

14-Jul-14

Client: Western Refining Southwest, Inc.
Project: Bisti Landfarm

Sample ID MB-13756	SampType: MBLK		TestCode: EPA Method 418.1: TPH							
Client ID: PBS	Batch ID: 13756		RunNo: 19338							
Prep Date: 6/18/2014	Analysis Date: 6/18/2014		SeqNo: 559119		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-13756	SampType: LCS		TestCode: EPA Method 418.1: TPH							
Client ID: LCSS	Batch ID: 13756		RunNo: 19338							
Prep Date: 6/18/2014	Analysis Date: 6/18/2014		SeqNo: 559120		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	81	20	100.0	0	81.1	80	120			

Sample ID LCSD-13756	SampType: LCSD		TestCode: EPA Method 418.1: TPH							
Client ID: LCSS02	Batch ID: 13756		RunNo: 19338							
Prep Date: 6/18/2014	Analysis Date: 6/18/2014		SeqNo: 559121		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	87	20	100.0	0	86.6	80	120	6.58	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#: 1406816

14-Jul-14

Client: Western Refining Southwest, Inc.

Project: Bisti Landfarm

Sample ID	MB-13782	SampType:	MBLK	TestCode:	EPA Method 8015D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	13782	RunNo:	19372					
Prep Date:	6/19/2014	Analysis Date:	6/19/2014	SeqNo:	560583	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	8.0		10.00		80.0	57.9	140			

Sample ID	LCS-13782	SampType:	LCS	TestCode:	EPA Method 8015D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	13782	RunNo:	19372					
Prep Date:	6/19/2014	Analysis Date:	6/19/2014	SeqNo:	560584	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	97.1	60.8	145			
Surr: DNOP	4.0		5.000		80.7	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#: 1406816
14-Jul-14

Client: Western Refining Southwest, Inc.
Project: Bisti Landfarm

Sample ID MB-13763	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: 13763		RunNo: 19378							
Prep Date: 6/18/2014	Analysis Date: 6/19/2014		SeqNo: 561044		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		94.0	80	120			

Sample ID LCS-13763	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: 13763		RunNo: 19378							
Prep Date: 6/18/2014	Analysis Date: 6/19/2014		SeqNo: 561045		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	102	71.7	134			
Surr: BFB	980		1000		98.0	80	120			

Sample ID 1406816-001AMS	SampType: MS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: API Vadose Zone	Batch ID: 13763		RunNo: 19378							
Prep Date: 6/18/2014	Analysis Date: 6/19/2014		SeqNo: 561049		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	4.6	23.15	0	114	71.8	132			
Surr: BFB	940		925.9		101	80	120			

Sample ID 1406816-001AMSD	SampType: MSD		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: API Vadose Zone	Batch ID: 13763		RunNo: 19378							
Prep Date: 6/18/2014	Analysis Date: 6/19/2014		SeqNo: 561050		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	4.6	23.13	0	111	71.8	132	2.58	20	
Surr: BFB	970		925.1		105	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#: 1406816

14-Jul-14

Client: Western Refining Southwest, Inc.
Project: Bisti Landfarm

Sample ID MB-13763	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 13763		RunNo: 19378							
Prep Date: 6/18/2014	Analysis Date: 6/19/2014		SeqNo: 561065		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	0.10								
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		111	80	120			

Sample ID LCS-13763	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 13763		RunNo: 19378							
Prep Date: 6/18/2014	Analysis Date: 6/19/2014		SeqNo: 561066		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	1.1	0.10	1.000	0	107	80	120			
Benzene	0.99	0.050	1.000	0	98.6	80	120			
Toluene	0.96	0.050	1.000	0	95.5	80	120			
Ethylbenzene	0.95	0.050	1.000	0	95.2	80	120			
Xylenes, Total	3.0	0.10	3.000	0	99.9	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Sample ID 1406816-002AMS	SampType: MS		TestCode: EPA Method 8021B: Volatiles							
Client ID: East Line Vadose	Batch ID: 13763		RunNo: 19378							
Prep Date: 6/18/2014	Analysis Date: 6/19/2014		SeqNo: 561070		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	1.1	0.099	0.9891	0	108	73.2	146			
Benzene	1.0	0.049	0.9891	0	101	77.4	142			
Toluene	0.98	0.049	0.9891	0.02314	96.9	77	132			
Ethylbenzene	1.0	0.049	0.9891	0	102	77.6	134			
Xylenes, Total	3.2	0.099	2.967	0.05204	105	77.4	132			
Surr: 4-Bromofluorobenzene	0.90		0.9891		90.9	80	120			

Sample ID 1406816-002AMSD	SampType: MSD		TestCode: EPA Method 8021B: Volatiles							
Client ID: East Line Vadose	Batch ID: 13763		RunNo: 19378							
Prep Date: 6/18/2014	Analysis Date: 6/19/2014		SeqNo: 561071		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	1.1	0.099	0.9911	0	107	73.2	146	1.29	21	
Benzene	1.0	0.050	0.9911	0	102	77.4	142	1.54	20	
Toluene	0.99	0.050	0.9911	0.02314	98.0	77	132	1.28	20	
Ethylbenzene	1.0	0.050	0.9911	0	102	77.6	134	0.660	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#: 1406816
 14-Jul-14

Client: Western Refining Southwest, Inc.
Project: Bisti Landfarm

Sample ID	1406816-002AMSD	SampType:	MSD	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	East Line Vadose	Batch ID:	13763	RunNo:	19378					
Prep Date:	6/18/2014	Analysis Date:	6/19/2014	SeqNo:	561071	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Xylenes, Total	3.2	0.099	2.973	0.05204	104	77.4	132	0.341	20	
Surr: 4-Bromofluorobenzene	1.0		0.9911		106	80	120	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. |
| 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 Southw** Work Order Number: **1406816** RcptNo: **1**

Received by/date: *Sum* **06/18/14**

Logged By: **Ashley Gallegos** **6/18/2014 7:40:00 AM** *AG*

Completed By: **Ashley Gallegos** **6/18/2014 8:08:36 AM** *AG*

Reviewed By: *TD* **06/18/2014**

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 # 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 °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Yes			

Client: Western Refining

Kelly Robinson

Mailing Address: 111 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-8013

Email or Fax#: kelly.robinson@wnr.com

QA/QC Package:
 Standard Level 4 (Full Validation)

Accreditation:
 NELAP Other _____

EDD (Type) _____

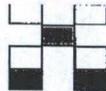
Standard Rush 48-hr turn

Project Name:
Bisti Landfarm

Project #:
WR1005

Project Manager:
Ashley Ager

Sampler: Brooke Herb



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

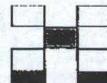
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	TPH - 8015											Air Bubbles (Y or N)			
4/17/2014	1140	soil	API Vadose Zone	4 oz/2	cool	-001	✓													
4/17/2014	1101	↓	East Line Vadose Zone	4 oz/2	cool	-002	✓													
4/17/2014	1037		West Line Vadose Zone	4 oz/2	cool	-003	✓													
4/17/2014	1122		Bisti Vadose Zone	4 oz/2	cool	-004	✓													
4/17/2014	1150		Pettigrew Vadose Zone	4 oz/2	cool	-005	✓													

Date: 4/17/14	Time: 1410	Relinquished by: <i>[Signature]</i>	Received by: <i>[Signature]</i>	Date: 4/17/14	Time: 1410	Remarks: please copy results to aager@ltenv.com
Date: 4/17/14	Time: 1725	Relinquished by: <i>Christopher Waeber</i>	Received by: <i>[Signature]</i>	Date: 04/18/14	Time: 0740	

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.

Client: Western Refining
 Kelly Robinson
 Mailing Address: 111 CR 4990
 Bloomfield, NM 87413
 Phone #: 505-632-8013
 Email or Fax#: kelly.robinson@wnr.com
 A/QC Package:
 Standard Level 4 (Full Validation)
 Accreditation:
 NELAP Other _____
 EDD (Type) _____

Standard Rush 48-hr turn
 Project Name: Bisti Landfarm
 Project #: WR1005
 Project Manager: Ashley Ager
 Sampler: Brooke Herb

 **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		BTEX - 8021 (no MTBE)	Chloride (300.0)												Air Bubbles (Y or N)
1/17/2014	1140	soil	API Vadose Zone	4 oz/2	cool	-001	✓	✓												
1/17/2014	1101	↓	East Line Vadose Zone	4 oz/2	cool	-002	✓	✓												
1/17/2014	1037	↓	West Line Vadose Zone	4 oz/2	cool	-003	✓	✓												
1/17/2014	1122	↓	Bisti Vadose Zone	4 oz/2	cool	-004	✓	✓												
1/17/2014	1150	↓	Pettigrew Vadose Zone	4 oz/2	cool	-005	✓	✓												
7/14/14	1731																			

Date: 7/14/14 Time: 1410 Relinquished by: *[Signature]*
 Received by: *[Signature]* Date: 7/17/14 Time: 1410
 Remarks: please copy results to aager@ltenv.com
 Date: 1/17/14 Time: 1725 Relinquished by: *[Signature]*
 Received by: *[Signature]* Date: 01/18/14 Time: 0745

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

October 06, 2014

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: Bisti Landfarm Vadose Zone Sampling

OrderNo.: 1409F04

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 9/30/2014 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 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 1409F04

Date Reported: 10/6/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: West line Vadose Zone

Project: Bisti Landfarm Vadose Zone Sampling

Collection Date: 9/29/2014 12:46:00 PM

Lab ID: 1409F04-001

Matrix: SOIL

Received Date: 9/30/2014 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: BCN
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/1/2014 11:51:59 PM	15586
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/1/2014 11:51:59 PM	15586
Surr: DNOP	98.2	57.9-140		%REC	1	10/1/2014 11:51:59 PM	15586
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	10/1/2014 11:30:36 PM	15622
Surr: BFB	91.2	80-120		%REC	1	10/1/2014 11:30:36 PM	15622
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.046		mg/Kg	1	10/1/2014 11:30:36 PM	15622
Toluene	ND	0.046		mg/Kg	1	10/1/2014 11:30:36 PM	15622
Ethylbenzene	ND	0.046		mg/Kg	1	10/1/2014 11:30:36 PM	15622
Xylenes, Total	ND	0.093		mg/Kg	1	10/1/2014 11:30:36 PM	15622
Surr: 4-Bromofluorobenzene	95.2	80-120		%REC	1	10/1/2014 11:30:36 PM	15622
EPA METHOD 300.0: ANIONS							Analyst: LGP
Chloride	ND	30		mg/Kg	20	10/2/2014 8:00:47 PM	15687
EPA METHOD 418.1: TPH							Analyst: BCN
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	10/2/2014 5:00:00 PM	15615

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.
	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 1409F04

Date Reported: 10/6/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: East line Vadose Zone

Project: Bisti Landfarm Vadose Zone Sampling

Collection Date: 9/29/2014 2:05:00 PM

Lab ID: 1409F04-002

Matrix: SOIL

Received Date: 9/30/2014 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: BCN
Diesel Range Organics (DRO)	25	9.9		mg/Kg	1	10/2/2014 12:13:15 AM	15586
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/2/2014 12:13:15 AM	15586
Surr: DNOP	111	57.9-140		%REC	1	10/2/2014 12:13:15 AM	15586
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/1/2014 11:59:07 PM	15622
Surr: BFB	91.7	80-120		%REC	1	10/1/2014 11:59:07 PM	15622
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	10/1/2014 11:59:07 PM	15622
Toluene	ND	0.048		mg/Kg	1	10/1/2014 11:59:07 PM	15622
Ethylbenzene	ND	0.048		mg/Kg	1	10/1/2014 11:59:07 PM	15622
Xylenes, Total	ND	0.096		mg/Kg	1	10/1/2014 11:59:07 PM	15622
Surr: 4-Bromofluorobenzene	95.5	80-120		%REC	1	10/1/2014 11:59:07 PM	15622
EPA METHOD 300.0: ANIONS							Analyst: LGP
Chloride	ND	30		mg/Kg	20	10/2/2014 9:02:50 PM	15687
EPA METHOD 418.1: TPH							Analyst: BCN
Petroleum Hydrocarbons, TR	96	20		mg/Kg	1	10/2/2014 5:00:00 PM	15615

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.
- RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1409F04

Date Reported: 10/6/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Bisti Vadose Zone

Project: Bisti Landfarm Vadose Zone Sampling

Collection Date: 9/29/2014 1:01:00 PM

Lab ID: 1409F04-003

Matrix: SOIL

Received Date: 9/30/2014 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: BCN
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	10/2/2014 12:34:45 AM	15586
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/2/2014 12:34:45 AM	15586
Surr: DNOP	98.9	57.9-140		%REC	1	10/2/2014 12:34:45 AM	15586
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/2/2014 12:27:49 AM	15622
Surr: BFB	91.7	80-120		%REC	1	10/2/2014 12:27:49 AM	15622
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.049		mg/Kg	1	10/2/2014 12:27:49 AM	15622
Toluene	ND	0.049		mg/Kg	1	10/2/2014 12:27:49 AM	15622
Ethylbenzene	ND	0.049		mg/Kg	1	10/2/2014 12:27:49 AM	15622
Xylenes, Total	ND	0.098		mg/Kg	1	10/2/2014 12:27:49 AM	15622
Surr: 4-Bromofluorobenzene	95.0	80-120		%REC	1	10/2/2014 12:27:49 AM	15622
EPA METHOD 300.0: ANIONS							Analyst: LGP
Chloride	ND	30		mg/Kg	20	10/2/2014 9:15:15 PM	15687
EPA METHOD 418.1: TPH							Analyst: BCN
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	10/2/2014 5:00:00 PM	15615

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.
	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 1409F04

Date Reported: 10/6/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Pettigrew Vadose Zone

Project: Bisti Landfarm Vadose Zone Sampling

Collection Date: 9/29/2014 1:50:00 PM

Lab ID: 1409F04-004

Matrix: SOIL

Received Date: 9/30/2014 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: BCN
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	10/2/2014 12:56:03 AM	15586
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/2/2014 12:56:03 AM	15586
Surr: DNOP	95.3	57.9-140		%REC	1	10/2/2014 12:56:03 AM	15586
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/2/2014 12:56:29 AM	15622
Surr: BFB	90.7	80-120		%REC	1	10/2/2014 12:56:29 AM	15622
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	10/2/2014 12:56:29 AM	15622
Toluene	ND	0.048		mg/Kg	1	10/2/2014 12:56:29 AM	15622
Ethylbenzene	ND	0.048		mg/Kg	1	10/2/2014 12:56:29 AM	15622
Xylenes, Total	ND	0.096		mg/Kg	1	10/2/2014 12:56:29 AM	15622
Surr: 4-Bromofluorobenzene	93.4	80-120		%REC	1	10/2/2014 12:56:29 AM	15622
EPA METHOD 300.0: ANIONS							Analyst: LGP
Chloride	780	30		mg/Kg	20	10/2/2014 9:27:40 PM	15687
EPA METHOD 418.1: TPH							Analyst: BCN
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	10/2/2014 5:00:00 PM	15615

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.
	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 1409F04

Date Reported: 10/6/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: API Vadose Zone

Project: Bisti Landfarm Vadose Zone Sampling

Collection Date: 9/29/2014 1:20:00 PM

Lab ID: 1409F04-005

Matrix: SOIL

Received Date: 9/30/2014 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: BCN
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/2/2014 1:17:31 AM	15586
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/2/2014 1:17:31 AM	15586
Surr: DNOP	97.9	57.9-140		%REC	1	10/2/2014 1:17:31 AM	15586
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/2/2014 1:25:06 AM	15622
Surr: BFB	91.1	80-120		%REC	1	10/2/2014 1:25:06 AM	15622
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	10/2/2014 1:25:06 AM	15622
Toluene	ND	0.048		mg/Kg	1	10/2/2014 1:25:06 AM	15622
Ethylbenzene	ND	0.048		mg/Kg	1	10/2/2014 1:25:06 AM	15622
Xylenes, Total	ND	0.097		mg/Kg	1	10/2/2014 1:25:06 AM	15622
Surr: 4-Bromofluorobenzene	94.1	80-120		%REC	1	10/2/2014 1:25:06 AM	15622
EPA METHOD 300.0: ANIONS							Analyst: LGP
Chloride	2300	75		mg/Kg	50	10/3/2014 11:14:14 PM	15687
EPA METHOD 418.1: TPH							Analyst: BCN
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	10/2/2014 5:00:00 PM	15615

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.
	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#: 1409F04
06-Oct-14

Client: Western Refining Southwest, Inc.
Project: Bisti Landfarm Vadose Zone Sampling

Sample ID	MB-15687	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	15687	RunNo:	21637					
Prep Date:	10/2/2014	Analysis Date:	10/2/2014	SeqNo:	634672	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-15687	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	15687	RunNo:	21637					
Prep Date:	10/2/2014	Analysis Date:	10/2/2014	SeqNo:	634673	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.4	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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1409F04

06-Oct-14

Client: Western Refining Southwest, Inc.
Project: Bisti Landfarm Vadose Zone Sampling

Sample ID MB-15615	SampType: MBLK	TestCode: EPA Method 418.1: TPH								
Client ID: PBS	Batch ID: 15615	RunNo: 21611								
Prep Date: 9/30/2014	Analysis Date: 10/2/2014	SeqNo: 634865	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-15615	SampType: LCS	TestCode: EPA Method 418.1: TPH								
Client ID: LCSS	Batch ID: 15615	RunNo: 21611								
Prep Date: 9/30/2014	Analysis Date: 10/2/2014	SeqNo: 634866	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	110	20	100.0	0	112	80	120			

Sample ID LCSD-15615	SampType: LCSD	TestCode: EPA Method 418.1: TPH								
Client ID: LCSS02	Batch ID: 15615	RunNo: 21611								
Prep Date: 9/30/2014	Analysis Date: 10/2/2014	SeqNo: 634867	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	120	20	100.0	0	117	80	120	3.86	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

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1409F04

06-Oct-14

Client: Western Refining Southwest, Inc.
Project: Bisti Landfarm Vadose Zone Sampling

Sample ID MB-15586	SampType: MBLK	TestCode: EPA Method 8015D: Diesel Range Organics								
Client ID: PBS	Batch ID: 15586	RunNo: 21573								
Prep Date: 9/29/2014	Analysis Date: 10/1/2014	SeqNo: 633322	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	9.1		10.00		91.4	57.9	140			

Sample ID LCS-15586	SampType: LCS	TestCode: EPA Method 8015D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 15586	RunNo: 21573								
Prep Date: 9/29/2014	Analysis Date: 10/1/2014	SeqNo: 633323	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	68.6	130			
Surr: DNOP	4.7		5.000		94.3	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#: 1409F04
06-Oct-14

Client: Western Refining Southwest, Inc.
Project: Bisti Landfarm Vadose Zone Sampling

Sample ID MB-15622	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: 15622		RunNo: 21587							
Prep Date: 9/30/2014	Analysis Date: 10/1/2014		SeqNo: 632616		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	900		1000		89.8	80	120			

Sample ID LCS-15622	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: 15622		RunNo: 21587							
Prep Date: 9/30/2014	Analysis Date: 10/1/2014		SeqNo: 632617		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	25.00	0	111	65.8	139			
Surr: BFB	970		1000		97.2	80	120			

Sample ID 5ML RB	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: R21610		RunNo: 21610							
Prep Date:	Analysis Date: 10/2/2014		SeqNo: 634458		Units: %REC					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	870		1000		87.3	80	120			

Sample ID 2.5UG GRO LCS	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: R21610		RunNo: 21610							
Prep Date:	Analysis Date: 10/2/2014		SeqNo: 634459		Units: %REC					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	970		1000		97.1	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#: 1409F04

06-Oct-14

Client: Western Refining Southwest, Inc.
Project: Bisti Landfarm Vadose Zone Sampling

Sample ID	MB-15622	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	15622	RunNo:	21587					
Prep Date:	9/30/2014	Analysis Date:	10/1/2014	SeqNo:	632648	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	0.95		1.000		94.7	80	120			

Sample ID	LCS-15622	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	15622	RunNo:	21587					
Prep Date:	9/30/2014	Analysis Date:	10/1/2014	SeqNo:	632649	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.050	1.000	0	95.5	80	120			
Toluene	0.95	0.050	1.000	0	94.8	80	120			
Ethylbenzene	0.98	0.050	1.000	0	97.6	80	120			
Xylenes, Total	2.9	0.10	3.000	0	96.2	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		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

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1409F04

RcptNo: 1

Received by/date: [Signature] 09/30/14

Logged By: Lindsay Mangin 9/30/2014 7:00:00 AM [Signature]

Completed By: Lindsay Mangin 9/30/2014 7:57:53 AM [Signature]

Reviewed By: IO 09/30/14

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	3.1	Good	Not Present			

Chain-of-Custody Record

Turn-Around Time:

Client: Western Refining

Standard Rush

Kelly Robinson

Project Name: Bisti land farm

Mailing Address: 111 CR 4990

Vadose Zone Sampling

Bloomfield NM 87413

Project #: WR1005

Phone #: 505-632-8013

Project Manager: Ashley Ager

email or Fax#: kelly.robinson@wnr.com

QA/QC Package: Standard Level 4 (Full Validation)

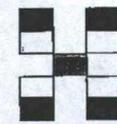
Accreditation NELAP Other _____

Sampler: D Newman / B Herb

EDD (Type) _____

On Ice: Yes No

Sample Temperature: 3



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)	
1/29	1246	Soil	West line Vadose Zone	4oz/2	Cool	-001	X		X	X									
	1405	Soil	East line Vadose zone	4oz/2	Cool	-002	X		X	X									
	1301	Soil	Bisti Vadose Zone	4oz/2	Cool	-003	X		X	X									
	1350	Soil	Pettigrew Vadose Zone	4oz/2	Cool	-004	X		X	X									
	1320	Soil	API Vadose Zone	4oz/2	Cool	-005	X		X	X									

Date: 1/29 Time: 1605 Relinquished by: [Signature]

Received by: [Signature] Date: 9/29/14 Time: 1605

Remarks: Please copy results to aager@henv.com

Date: 2/9/14 Time: 1724 Relinquished by: [Signature]

Received by: [Signature] Date: 09/30/14 Time: 0700

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

October 07, 2014

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: Bisti Landfarm Treatment Zone Sampling

OrderNo.: 1409F06

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 9/30/2014 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 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 1409F06

Date Reported: 10/7/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Crude Cell Treatment Zone

Project: Bisti Landfarm Treatment Zone Sampling

Collection Date: 9/29/2014 2:10:00 PM

Lab ID: 1409F06-001

Matrix: SOIL

Received Date: 9/30/2014 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: BCN
Diesel Range Organics (DRO)	40	9.9		mg/Kg	1	10/2/2014 1:38:43 AM	15586
Motor Oil Range Organics (MRO)	82	50		mg/Kg	1	10/2/2014 1:38:43 AM	15586
Surr: DNOP	92.6	57.9-140		%REC	1	10/2/2014 1:38:43 AM	15586
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/2/2014 1:53:40 AM	15622
Surr: BFB	91.8	80-120		%REC	1	10/2/2014 1:53:40 AM	15622
EPA METHOD 300.0: ANIONS							Analyst: LGP
Chloride	110	30		mg/Kg	20	10/3/2014 12:28:58 PM	15699

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.
	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 1409F06

Date Reported: 10/7/2014

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: API Cell Treatment Zone

Project: Bisti Landfarm Treatment Zone Sampling

Collection Date: 9/29/2014 1:25:00 PM

Lab ID: 1409F06-002

Matrix: SOIL

Received Date: 9/30/2014 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: BCN
Diesel Range Organics (DRO)	12	9.9		mg/Kg	1	10/2/2014 2:21:32 AM	15586
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/2/2014 2:21:32 AM	15586
Surr: DNOP	94.4	57.9-140		%REC	1	10/2/2014 2:21:32 AM	15586
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/2/2014 2:22:12 AM	15622
Surr: BFB	90.8	80-120		%REC	1	10/2/2014 2:22:12 AM	15622
EPA METHOD 300.0: ANIONS							Analyst: LGP
Chloride	500	30		mg/Kg	20	10/3/2014 12:41:22 PM	15699

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.
- RL Reporting Detection Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: 1409F06
 07-Oct-14

Client: Western Refining Southwest, Inc.
Project: Bisti Landfarm Treatment Zone Sampling

Sample ID	MB-15699	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	15699	RunNo:	21676					
Prep Date:	10/3/2014	Analysis Date:	10/3/2014	SeqNo:	636273	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-15699	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	15699	RunNo:	21676					
Prep Date:	10/3/2014	Analysis Date:	10/3/2014	SeqNo:	636274	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.9	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 greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: 1409F06
 07-Oct-14

Client: Western Refining Southwest, Inc.
Project: Bisti Landfarm Treatment Zone Sampling

Sample ID MB-15586	SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range Organics							
Client ID: PBS	Batch ID: 15586		RunNo: 21573							
Prep Date: 9/29/2014	Analysis Date: 10/1/2014		SeqNo: 633322		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	9.1		10.00		91.4	57.9	140			

Sample ID LCS-15586	SampType: LCS		TestCode: EPA Method 8015D: Diesel Range Organics							
Client ID: LCSS	Batch ID: 15586		RunNo: 21573							
Prep Date: 9/29/2014	Analysis Date: 10/1/2014		SeqNo: 633323		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	68.6	130			
Surr: DNOP	4.7		5.000		94.3	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 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#: 1409F06
 07-Oct-14

Client: Western Refining Southwest, Inc.
Project: Bisti Landfarm Treatment Zone Sampling

Sample ID MB-15622	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: 15622		RunNo: 21587							
Prep Date: 9/30/2014	Analysis Date: 10/1/2014		SeqNo: 632616		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	900		1000		89.8	80	120			

Sample ID LCS-15622	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: 15622		RunNo: 21587							
Prep Date: 9/30/2014	Analysis Date: 10/1/2014		SeqNo: 632617		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	25.00	0	111	65.8	139			
Surr: BFB	970		1000		97.2	80	120			

Sample ID MB-15674 MK	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: R21650		RunNo: 21650							
Prep Date:	Analysis Date: 10/3/2014		SeqNo: 635786		Units: %REC					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	900		1000		90.0	80	120			

Sample ID LCS-15674 MK	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: R21650		RunNo: 21650							
Prep Date:	Analysis Date: 10/3/2014		SeqNo: 635787		Units: %REC					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		100	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 Southw

Work Order Number: 1409F06

RcptNo: 1

Received by/date: [Signature] 09/30/14

Logged By: Lindsay Mangin 9/30/2014 7:00:00 AM [Signature]

Completed By: Lindsay Mangin 9/30/2014 8:07:28 AM [Signature]

Reviewed By: IO 09/30/14

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	3.1	Good	Not Present			

Chain-of-Custody Record

Turn-Around Time:

Client: Western Refining

Standard Rush

Kelly Robinson

Project Name:
Bisti Landfarm Treatment Zone Sampling

Mailing Address: 111 CR 4990

Bloomfield NM 87413

Project #:
WR1005

Phone #: 505-632-8013

email or Fax#: Kelly.Robinson@wnr.com

Project Manager:
Ashley Ager

QA/QC Package:

Standard Level 4 (Full Validation)

Sampler: D Newman / B Herb

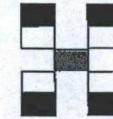
Accreditation

NELAP Other _____

On Ice: Yes No

EDD (Type)

Sample Temperature: 3.1



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Chlorides 300	Air Bubbles (Y or N)	
29/14	1410	Soil	Crude Cell Treatment Zone	4oz A	Cool	-001			X										X	
29/14	1325	Soil	API Cell Treatment Zone	4oz B	Cool	-002			X										X	

Date: 29/14 Time: 1605 Relinquished by: [Signature]

Received by: [Signature] Date: 9/29/14 Time: 1605

Remarks: Please copy results to aager@henv.com

Date: 12/9/14 Time: 1724 Relinquished by: [Signature]

Received by: [Signature] Date: 09/30/14 Time: 0700

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

January 02, 2015

Ashley Ager
Western Refining Southwest, Inc.
#50 CR 4990
Bloomfield, NM 87413
TEL: (970) 946-1093
FAX

RE: Bisti Quarterly

OrderNo.: 1412B01

Dear Ashley Ager:

Hall Environmental Analysis Laboratory received 5 sample(s) on 12/24/2014 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 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 light blue circular stamp.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
 Lab Order 1412B01
 Date Reported: 1/2/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Westline

Project: Bisti Quarterly

Collection Date: 12/22/2014 11:18:00 AM

Lab ID: 1412B01-001

Matrix: SOIL

Received Date: 12/24/2014 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: BCN
Diesel Range Organics (DRO)	24	9.9		mg/Kg	1	12/30/2014 2:05:35 PM	16977
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/30/2014 2:05:35 PM	16977
Surr: DNOP	95.0	63.5-128		%REC	1	12/30/2014 2:05:35 PM	16977
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/29/2014 12:57:35 PM	16995
Surr: BFB	97.0	80-120		%REC	1	12/29/2014 12:57:35 PM	16995
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.049		mg/Kg	1	12/29/2014 12:57:35 PM	16995
Toluene	ND	0.049		mg/Kg	1	12/29/2014 12:57:35 PM	16995
Ethylbenzene	ND	0.049		mg/Kg	1	12/29/2014 12:57:35 PM	16995
Xylenes, Total	ND	0.098		mg/Kg	1	12/29/2014 12:57:35 PM	16995
Surr: 4-Bromofluorobenzene	105	80-120		%REC	1	12/29/2014 12:57:35 PM	16995
EPA METHOD 300.0: ANIONS							Analyst: Igp
Chloride	3.8	1.5		mg/Kg	1	12/29/2014 12:37:50 PM	17012
EPA METHOD 418.1: TPH							Analyst: WL
Petroleum Hydrocarbons, TR	52	20		mg/Kg	1	12/30/2014 12:00:00 PM	16976

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.
	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, Inc.

Client Sample ID: Eastline

Project: Bisti Quarterly

Collection Date: 12/22/2014 11:35:00 AM

Lab ID: 1412B01-002

Matrix: SOIL

Received Date: 12/24/2014 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: BCN
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/30/2014 2:35:20 PM	16977
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/30/2014 2:35:20 PM	16977
Surr: DNOP	83.1	63.5-128		%REC	1	12/30/2014 2:35:20 PM	16977
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	12/29/2014 2:23:48 PM	16995
Surr: BFB	98.6	80-120		%REC	1	12/29/2014 2:23:48 PM	16995
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.046		mg/Kg	1	12/29/2014 2:23:48 PM	16995
Toluene	ND	0.046		mg/Kg	1	12/29/2014 2:23:48 PM	16995
Ethylbenzene	ND	0.046		mg/Kg	1	12/29/2014 2:23:48 PM	16995
Xylenes, Total	ND	0.093		mg/Kg	1	12/29/2014 2:23:48 PM	16995
Surr: 4-Bromofluorobenzene	107	80-120		%REC	1	12/29/2014 2:23:48 PM	16995
EPA METHOD 300.0: ANIONS							Analyst: lgb
Chloride	3.2	1.5		mg/Kg	1	12/29/2014 1:52:20 PM	17012
EPA METHOD 418.1: TPH							Analyst: WL
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	12/30/2014 12:00:00 PM	16976

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.
	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 1412B01
 Date Reported: 1/2/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: API Cell

Project: Bisti Quarterly

Collection Date: 12/22/2014 1:00:00 PM

Lab ID: 1412B01-003

Matrix: SOIL

Received Date: 12/24/2014 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: BCN
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/30/2014 3:05:24 PM	16977
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/30/2014 3:05:24 PM	16977
Surr: DNOP	76.0	63.5-128		%REC	1	12/30/2014 3:05:24 PM	16977
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/29/2014 3:49:51 PM	16995
Surr: BFB	99.4	80-120		%REC	1	12/29/2014 3:49:51 PM	16995
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.047		mg/Kg	1	12/29/2014 3:49:51 PM	16995
Toluene	ND	0.047		mg/Kg	1	12/29/2014 3:49:51 PM	16995
Ethylbenzene	ND	0.047		mg/Kg	1	12/29/2014 3:49:51 PM	16995
Xylenes, Total	ND	0.094		mg/Kg	1	12/29/2014 3:49:51 PM	16995
Surr: 4-Bromofluorobenzene	107	80-120		%REC	1	12/29/2014 3:49:51 PM	16995
EPA METHOD 300.0: ANIONS							Analyst: lgp
Chloride	ND	1.5		mg/Kg	1	12/29/2014 2:17:08 PM	17012
EPA METHOD 418.1: TPH							Analyst: WL
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	12/30/2014 12:00:00 PM	16976

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.
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 1412B01

Date Reported: 1/2/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Bisti

Project: Bisti Quarterly

Collection Date: 12/22/2014 2:30:00 PM

Lab ID: 1412B01-004

Matrix: SOIL

Received Date: 12/24/2014 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: BCN
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	12/30/2014 3:35:22 PM	16977
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/30/2014 3:35:22 PM	16977
Surr: DNOP	86.4	63.5-128		%REC	1	12/30/2014 3:35:22 PM	16977
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	12/29/2014 4:18:38 PM	16995
Surr: BFB	100	80-120		%REC	1	12/29/2014 4:18:38 PM	16995
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.046		mg/Kg	1	12/29/2014 4:18:38 PM	16995
Toluene	ND	0.046		mg/Kg	1	12/29/2014 4:18:38 PM	16995
Ethylbenzene	ND	0.046		mg/Kg	1	12/29/2014 4:18:38 PM	16995
Xylenes, Total	ND	0.092		mg/Kg	1	12/29/2014 4:18:38 PM	16995
Surr: 4-Bromofluorobenzene	108	80-120		%REC	1	12/29/2014 4:18:38 PM	16995
EPA METHOD 300.0: ANIONS							Analyst: lgp
Chloride	6.3	1.5		mg/Kg	1	12/29/2014 2:41:58 PM	17012
EPA METHOD 418.1: TPH							Analyst: WL
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	12/30/2014 12:00:00 PM	16976

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.
	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 1412B01
 Date Reported: 1/2/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Petigrew

Project: Bisti Quarterly

Collection Date: 12/22/2014 3:30:00 PM

Lab ID: 1412B01-005

Matrix: SOIL

Received Date: 12/24/2014 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: BCN
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/30/2014 4:05:04 PM	16977
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/30/2014 4:05:04 PM	16977
Surr: DNOP	85.7	63.5-128		%REC	1	12/30/2014 4:05:04 PM	16977
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/29/2014 4:47:23 PM	16995
Surr: BFB	101	80-120		%REC	1	12/29/2014 4:47:23 PM	16995
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.047		mg/Kg	1	12/29/2014 4:47:23 PM	16995
Toluene	ND	0.047		mg/Kg	1	12/29/2014 4:47:23 PM	16995
Ethylbenzene	ND	0.047		mg/Kg	1	12/29/2014 4:47:23 PM	16995
Xylenes, Total	ND	0.095		mg/Kg	1	12/29/2014 4:47:23 PM	16995
Surr: 4-Bromofluorobenzene	108	80-120		%REC	1	12/29/2014 4:47:23 PM	16995
EPA METHOD 300.0: ANIONS							Analyst: lgp
Chloride	350	30		mg/Kg	20	12/29/2014 3:19:12 PM	17012
EPA METHOD 418.1: TPH							Analyst: WL
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	12/30/2014 12:00:00 PM	16976

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.
	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#: 1412B01
 02-Jan-15

Client: Western Refining Southwest, Inc.
Project: Bisti Quarterly

Sample ID	MB-17012	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	17012	RunNo:	23405					
Prep Date:	12/29/2014	Analysis Date:	12/29/2014	SeqNo:	691517	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-17012	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	17012	RunNo:	23405					
Prep Date:	12/29/2014	Analysis Date:	12/29/2014	SeqNo:	691518	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.6	90	110			

Sample ID	1412B01-001AMS	SampType:	MS	TestCode:	EPA Method 300.0: Anions					
Client ID:	Westline	Batch ID:	17012	RunNo:	23405					
Prep Date:	12/29/2014	Analysis Date:	12/29/2014	SeqNo:	691529	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	17	1.5	15.00	3.806	90.9	71.6	122			

Sample ID	1412B01-001AMSD	SampType:	MSD	TestCode:	EPA Method 300.0: Anions					
Client ID:	Westline	Batch ID:	17012	RunNo:	23405					
Prep Date:	12/29/2014	Analysis Date:	12/29/2014	SeqNo:	691530	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	19	1.5	15.00	3.806	101	71.6	122	8.08	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#: 1412B01
02-Jan-15

Client: Western Refining Southwest, Inc.
Project: Bisti Quarterly

Sample ID	MB-16976	SampType:	MBLK	TestCode:	EPA Method 418.1: TPH					
Client ID:	PBS	Batch ID:	16976	RunNo:	23342					
Prep Date:	12/23/2014	Analysis Date:	12/24/2014	SeqNo:	689793	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-16976	SampType:	LCS	TestCode:	EPA Method 418.1: TPH					
Client ID:	LCSS	Batch ID:	16976	RunNo:	23342					
Prep Date:	12/23/2014	Analysis Date:	12/24/2014	SeqNo:	689952	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	110	20	100.0	0	107	80	120			

Sample ID	LCSD-16976	SampType:	LCSD	TestCode:	EPA Method 418.1: TPH					
Client ID:	LCSS02	Batch ID:	16976	RunNo:	23342					
Prep Date:	12/23/2014	Analysis Date:	12/24/2014	SeqNo:	689953	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	110	20	100.0	0	113	80	120	5.49	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#: 1412B01

02-Jan-15

Client: Western Refining Southwest, Inc.

Project: Bisti Quarterly

Sample ID	MB-16977	SampType:	MBLK	TestCode:	EPA Method 8015D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	16977	RunNo:	23339					
Prep Date:	12/23/2014	Analysis Date:	12/24/2014	SeqNo:	689714	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	6.6		10.00		65.9	63.5	128			

Sample ID	LCS-16977	SampType:	LCS	TestCode:	EPA Method 8015D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	16977	RunNo:	23339					
Prep Date:	12/23/2014	Analysis Date:	12/24/2014	SeqNo:	689827	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	39	10	50.00	0	78.2	67.8	130			
Surr: DNOP	3.6		5.000		72.6	63.5	128			

Sample ID	MB-17041	SampType:	MBLK	TestCode:	EPA Method 8015D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	17041	RunNo:	23412					
Prep Date:	12/31/2014	Analysis Date:	12/31/2014	SeqNo:	692482	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.0		10.00		79.9	63.5	128			

Sample ID	LCS-17041	SampType:	LCS	TestCode:	EPA Method 8015D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	17041	RunNo:	23412					
Prep Date:	12/31/2014	Analysis Date:	12/31/2014	SeqNo:	692503	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.1		5.000		81.8	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#: 1412B01
02-Jan-15

Client: Western Refining Southwest, Inc.
Project: Bisti Quarterly

Sample ID	MB-16995	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	16995	RunNo:	23399					
Prep Date:	12/24/2014	Analysis Date:	12/29/2014	SeqNo:	691302	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	970		1000		97.3	80	120			

Sample ID	LCS-16995	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	16995	RunNo:	23399					
Prep Date:	12/24/2014	Analysis Date:	12/29/2014	SeqNo:	691304	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	89.4	65.8	139			
Surr: BFB	1000		1000		105	80	120			

Sample ID	1412B01-001AMS	SampType:	MS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	Westline	Batch ID:	16995	RunNo:	23399					
Prep Date:	12/24/2014	Analysis Date:	12/29/2014	SeqNo:	691313	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	4.9	24.37	0	82.0	47.9	144			
Surr: BFB	1000		974.7		106	80	120			

Sample ID	1412B01-001AMSD	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	Westline	Batch ID:	16995	RunNo:	23399					
Prep Date:	12/24/2014	Analysis Date:	12/29/2014	SeqNo:	691314	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	4.9	24.32	0	78.2	47.9	144	4.99	29.9	
Surr: BFB	1000		972.8		107	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#: 1412B01
02-Jan-15

Client: Western Refining Southwest, Inc.
Project: Bisti Quarterly

Sample ID	MB-16995	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	16995	RunNo:	23399					
Prep Date:	12/24/2014	Analysis Date:	12/29/2014	SeqNo:	691332	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	1.1		1.000		106	80	120			

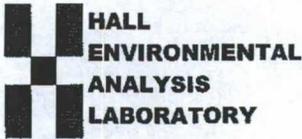
Sample ID	LCS-16995	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	16995	RunNo:	23399					
Prep Date:	12/24/2014	Analysis Date:	12/29/2014	SeqNo:	691333	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.050	1.000	0	93.7	80	120			
Toluene	0.93	0.050	1.000	0	92.9	80	120			
Ethylbenzene	0.95	0.050	1.000	0	94.5	80	120			
Xylenes, Total	2.7	0.10	3.000	0	91.4	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		111	80	120			

Sample ID	1412B01-002AMS	SampType:	MS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	Eastline	Batch ID:	16995	RunNo:	23399					
Prep Date:	12/24/2014	Analysis Date:	12/29/2014	SeqNo:	691339	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.047	0.9302	0	94.5	69.2	126			
Toluene	0.85	0.047	0.9302	0.01253	89.7	65.6	128			
Ethylbenzene	0.88	0.047	0.9302	0.009071	93.7	65.5	138			
Xylenes, Total	2.6	0.093	2.791	0.01637	91.9	63	139			
Surr: 4-Bromofluorobenzene	1.0		0.9302		112	80	120			

Sample ID	1412B01-002AMSD	SampType:	MSD	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	Eastline	Batch ID:	16995	RunNo:	23399					
Prep Date:	12/24/2014	Analysis Date:	12/29/2014	SeqNo:	691340	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.83	0.047	0.9302	0	89.7	69.2	126	5.28	18.5	
Toluene	0.81	0.047	0.9302	0.01253	85.7	65.6	128	4.40	20.6	
Ethylbenzene	0.85	0.047	0.9302	0.009071	90.0	65.5	138	4.01	20.1	
Xylenes, Total	2.5	0.093	2.791	0.01637	87.9	63	139	4.43	21.1	
Surr: 4-Bromofluorobenzene	1.1		0.9302		113	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



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 Southw**

Work Order Number: **1412B01**

RcptNo: **1**

Received by/date: *[Signature]* **12/24/14**
 Logged By: **Lindsay Mangin** **12/24/2014 7:30:00 AM**
 Completed By: **Lindsay Mangin** **12/24/2014 8:23:50 AM**
 Reviewed By: **CS** **12/24/12**

[Signature]
[Signature]

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	1.5	Good	Yes			

Chain-of-Custody Record

Turn-Around Time:

Client: *Western Refining*
Kelly Robinson
 Mailing Address: *111 CR 490*
Bloomfield, NM 87413
 Phone #: *505-632-8013*

Standard Rush
 Project Name: *Bisti Quarterly*
 Project #: *WR1005*



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

email or Fax#: *kelly.robinson@wnr.com*
 QA/QC Package:
 Standard Level 4 (Full Validation)
 Accreditation
 NELAP Other _____
 EDD (Type) _____

Project Manager: *Ashley Ager*
CC: aager@itenu.com
 Sampler: *Alex Crooks*
 On Ice: Yes No
 Sample Temperature: *15*

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	8015	BTEX	Chloride	Air Bubbles (Y or N)	
<i>12/22</i>	<i>1113</i>	<i>Soil</i>	<i>westline</i>	<i>2-402</i>	<i>cool</i>	<i>1412B01</i> <i>-001</i>				<i>X</i>								<i>X</i>	<i>X</i>	<i>X</i>		
	<i>1135</i>		<i>eastline</i>			<i>-002</i>																
	<i>1300</i>		<i>API cell</i>			<i>-003</i>																
	<i>1430</i>		<i>Bisti</i>			<i>-004</i>																
	<i>1530</i>		<i>Petiquew</i>			<i>-005</i>																

Date: *12/23* Time: *1445* Relinquished by: *Alex Crooks*
 Received by: *Christa White* Date: *12/23/14* Time: *1445*
 Date: *12/23/14* Time: *1816* Relinquished by: *Christa White*
 Received by: *[Signature]* Date: *12/24/14* Time: *0730*

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly noted on the analytical report.