

AP____111____

SWMU No.10

Sludge Pits

(2 of 4)

December 2016

Appendix A

Waste Manifests

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number NMD001033324		2. Page 1 of 142	3. Emergency Response Phone 800-424-9300		4. Manifest Tracking Number 006757010 FLE			
		5. Generator's Name and Mailing Address WESTERN REFINING SOUTHWEST GALLUP REFINING 1-40 exit 39 Route 3 Box 7 Jamestown, NM 87347		Generator's Site Address (if different than mailing address)						
6. Transporter 1 Company Name Advanced Chemical Transport Inc. (SV)		U.S. EPA ID Number CAR000070540		7. Transporter 2 Company Name		U.S. EPA ID Number				
8. Designated Facility Name and Site Address Advanced Chemical Treatment 6133 Edith Blvd NE Albuquerque, NM 87107		U.S. EPA ID Number NMD002208627		Facility's Phone: 505-349-5220						
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))			10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes	
	X	1. UN3175, Waste Solids containing flammable liquid, n.o.s. (benzene, xylene), 4.1, PGII			1 DM		375	P	D001 D018 K050	
	X	2. H0, UN1230, Waste Methanol, 3, PGII (D001)			1 TP		1.675	P	D001 U154	
	X	3. NA3082, Hazardous waste, liquid, n.o.s. (BENZENE, CHRYSENE), 9, PGIII			3 DM		968	P	F037	
	X	4. NA1993, Combustible liquid, n.o.s., Comb liq., PGIII (DIESEL IN VIALS)			1 DM		150	P	D001	
14. Special Handling Instructions and Additional Information Project Number 74076 Document #: D85375 24 hour emergency contact: CHEMTREC 800-424-9300 1) ERG#133: ACT17857 WEA- 3) ERG#171: RC5666 WEA- 2) ERG#131: ACT41300 WEA- 4) ERG#128: ACT3485 WEA-										
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.										
Generator's/Offor's Printed/Typed Name ALVIN Dorsey Signature <i>Alvin Dorsey</i> Month 06 Day 16 Year 15										
TRANSPORTER	16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____ Transporter signature (for exports only): _____									
	17. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name Larry Sanchez Signature <i>Larry Sanchez</i> Month 06 Day 16 Year 15 Transporter 2 Printed/Typed Name _____ Signature _____ Month _____ Day _____ Year _____									
DESIGNATED FACILITY	18. Discrepancy 18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection Manifest Reference Number: _____									
	18b. Alternate Facility (or Generator) U.S. EPA ID Number: _____ Facility's Phone: _____									
	18c. Signature of Alternate Facility (or Generator) _____ Month _____ Day _____ Year _____									
	19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems) 1. _____ 2. _____ 3. _____ 4. _____									
	20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a Printed/Typed Name _____ Signature _____ Month _____ Day _____ Year _____									

GENERATOR'S INITIAL COPY

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number NMD000333211	2. Page 1 of 2	3. Emergency Response Phone 800-424-9300	4. Manifest Tracking Number 009001751 FLE		
5. Generator's Name and Mailing Address WESTERN REFINING SOUTHWEST GALLUP REFINING 92 GIANT CROSSING ROAD GALLUP, NM 87301 Generator's Phone: 505-722-0211				Generator's Site Address (if different than mailing address)			
6. Transporter 1 Company Name Advanced Chemical Transport Inc. (SV)				U.S. EPA ID Number CAR000070640			
7. Transporter 2 Company Name				U.S. EPA ID Number			
8. Designated Facility Name and Site Address Advanced Chemical Treatment 8133 Edith Blvd NE Albuquerque, NM 87107 Facility's Phone: 505-349-5220				U.S. EPA ID Number NMD002208627			
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	X	1. NA3077, Hazardous waste, solid, n.o.s. (SOIL CONTAMINATED WITH HYDROCARBONS FROM API SEPARATOR), 9, PG III	01	DM	700	P	K051
	X	2. RQ, UN3175, Waste Solids containing flammable liquid, n.o.s. (acetone, methanol), 4.1, PG II	03	CF	375	P	D001 R003 F005
	X	3. NA3082, Hazardous waste, liquid, n.o.s. (LEAD, ARSENIC), 9, PG III	01	DM	250	P	D004 D008 D009
		4. Non-RCRA/Non-DOT Regulated Material Solid (SOIL - DRILL CUTTINGS)	(15)	DM	11,000	P	NONE
14. Special Handling Instructions and Additional Information Project Number 103463 Document #: D121904 1) ERM#171: ACT8736 WEA (SD) SS DM 2) ERM#183: ACT51807 WEA (SD) CYB 3) ERM#171: ACT3415 WEA (SD) SS DM 4) ACT14825 WEA (15) SS DM 24 hour emergency contact: CHEMTREC 800-424-9300							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offeror's Printed/Typed Name ALVIN DORSEY				Signature [Signature]		Month Day Year 09/01/16	
TRANSPORTER	16. International Shipments ☐ Import to U.S. ☐ Export from U.S.		Port of entry/exit: Date leaving U.S.:				
	17. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name Robert R. [Signature] Month Day Year 08/01/16 Transporter 2 Printed/Typed Name [Signature] Month Day Year						
DESIGNATED FACILITY	18. Discrepancy 18a. Discrepancy Indication Space ☒ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection Line 2 amount with 1134 BS Manifest Reference Number: 18b. Alternate Facility (or Generator) Facility's Phone: U.S. EPA ID Number 18c. Signature of Alternate Facility (or Generator) Month Day Year						
	19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems) 1. [Signature] 2. [Signature] 3. [Signature] 4. [Signature]						
	20. Designated Facility Owner or Operator, Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a. Printed/Typed Name [Signature] Month Day Year 08/11/16						
	DESIGNATED FACILITY TO GENERATOR						

Appendix B

Field Methods

Field Methods

Pursuant to the Investigation Work Plan for SWMU No. 10, an investigation of soils and groundwater was conducted to determine and evaluate the presence, nature, extent, fate, and transport of contaminants. To accomplish this objective, soil borings and temporary monitoring wells were installed at the Sludge Pits. The field methods are described below and individual discussions are presented for the following activities:

- Drilling procedures;
- Soil screening;
- Decontamination procedures;
- Monitoring well development;
- Fluid level measurements;
- Purging of temporary monitoring wells/groundwater sample collection;
- Sample collection and handling procedures;
- Vadose zone vapor sampling;
- Equipment calibration; and
- Management of investigation derived waste.

Drilling Procedures

The soil borings were drilled using the hollow-stem auger (HSA) method or a hand auger. Soil samples were collected continuously and logged by a qualified geologist in accordance with the Unified Soil Classification System (USCS) nomenclature. As shown on the boring logs, the data recorded included the lithologic interval, symbol, percent recovery, field screening results, and a sample description of the cuttings and core samples.

Soil Screening

Samples obtained from the borings were screened in the field on 2-foot intervals for evidence of contaminants. Field screening results were recorded on the soil boring logs. Field screening results were used to aid in the selection of soil samples for laboratory analysis. The primary screening methods include: (1) visual examination, (2) olfactory examination, and (3) headspace vapor screening for volatile organic compounds.

Visual screening included examining the soil samples for evidence of staining caused by petroleum-related compounds or other substances that may have caused staining of soils such as elemental sulfur or cyanide compounds. Headspace vapor screening was conducted and involved placing a soil sample in a plastic sealable bag allowing space for ambient air. The bag was sealed, labeled and then shaken gently to expose the soil to the air trapped in the container. The sealed bag was allowed to rest for a minimum of 5 minutes while the vapors equilibrated. Vapors present within the sample bag's headspace were then measured by inserting the probe of a MiniRae 3000 portable volatile organic constituent (VOC) monitor in a small opening in the bag. The maximum value and the ambient air temperature were recorded on the field boring log for each sample. Field screening results and any conditions that were considered to be capable of influencing the results of the field screening were recorded on the field logs.

Decontamination Procedures

The drilling equipment (e.g., hollow-stem augers) was decontaminated between each borehole using a high pressure potable water wash. The sampling equipment coming in direct contact with the samples (e.g., hand augers and split-spoon samplers) were decontaminated using a brush, as necessary, to remove larger particulate matter followed by a rinse with potable water, wash with non-phosphate detergent, rinse with potable water, and double rinse with deionized water.

Fluid Level Measurements

The depth to separate phase hydrocarbon, if present, and groundwater was measured prior to purging the wells of potentially stagnant groundwater. A Geotech Interface Probe was used to measure fluid levels to 0.01 foot.

Temporary Monitoring Well Development/Purging

Using a new bailer attached to the end of the clean rope, approximately three volumes of groundwater were removed from the temporary wells. The groundwater and sediment removed from the wells were transported to the bundle cleaning pad in sealed 5-gallon buckets. Bailing ceased after a minimum of three well volumes were removed from the wells.

The purge volumes are calculated as follows:

Volume (gallons) = water column thickness (ft) x 3.14 x radius of well casing² (ft) x 7.48 (gals/ft).

The calculated purge volumes and actual volumes removed from each well are presented below.

Well (date)	Water Column Thickness (ft)	Calculated Purge Volume (gallons) – 3 well volumes	Actual Purge Volume (gallons)
SWMU 10-1	6.89	3.51	5.0
SWMU 10-3	3.2	1.63	2.0
SWMU 10-5	9.57	NA ⁽¹⁾	NA ⁽¹⁾
SWMU 10-11	10.22	5.22	5.25
SWMU 10-12	11.18	5.7	5.75
SWMU 10-14	8.5	4.35	5.0
SWMU 10-15	12.46	6.36	6.5
SWMU 10-16	2.78	NA ⁽²⁾	NA ⁽²⁾
SWMU 10-20	8.4	4.2	7.0
SWMU 10-21	0.43	0.2	NA ⁽³⁾
SWMU 10-25	9.76	4.98	6.0

NA – not applicable

1 – Well SWMU 10-5 was not purged of three well volumes due to very slow recovery rate.

2 – Well SWMU 10-16 was not purged of three well volumes due to very low volume of water in well combined with slow recovery rate.

3 – Well SWMU 10-21 was not developed or purged due to very low volume of water accumulating in well; all available water used for sample analyses.

Field measurements of groundwater stabilization parameters included pH, specific conductance, dissolved oxygen concentrations, oxidation-reduction potential, and temperature and the readings are presented in Table 4. A disposable bailer was used to remove groundwater from the well during the purging procedures.

Sample Collection and Handling Procedures

Soil samples were collected using split-spoon samplers or directly from the auger bucket for borings completed with a hand auger. The selected portion of the sample interval was placed in pre-cleaned, laboratory-prepared sample containers for laboratory chemical analysis. Three soil samples were collected for VOC analysis in the following manner:

- Two sample aliquots were collected using a syringe for low-level VOC analysis pursuant to EPA method 5035. For these “Terracore” kits, 4- 5 grams (4cc) of soil was injected into each vial using the syringe. The syringes were disposed after soil collection.
 - Two sample aliquots were collected using a syringe for preservation with methanol. For the methanol preserved kits, 10 grams (10 cc) of soil was injected into each methanol vial using the syringe. The syringes were disposed after soil collection.
 - The third sample aliquot was placed in an 8-ounce glass jar, which was filled to the top to minimize any head space.
-
-

An additional fourth soil sample was collected in an 8-ounce glass jar for metals analyses.

Groundwater samples were collected using disposable bailers and clean rope. The water was immediately poured directly into clean laboratory supplied sample containers with the exception of samples collected for dissolved metals analyses. Samples specified for dissolved metals analyses were filtered in the field using a disposable 0.45 micron filter. A new filter and syringe were used for each sample. All samples were immediately placed into an ice chest with ice. The samples were maintained in the custody of the sampler until the chain-of-custody form was completed and the ice chest was sealed for delivery to the laboratory.

Equipment Calibration

Soil vapor screening was conducted using a MiniRae 3000 portable VOC monitor. The instrument was calibrated at the beginning of each work day to a concentration of 100 ppm isobutylene.

The instruments used to measure groundwater stabilization parameters included an YSI Professional Series Data Logger and YSI Quatro Sonde. The calibration solutions used at the beginning of each day are as follows:

- pH solution;
- 7.0 pH solution;
- 10.0 pH solution; and
- 1.413 mS/cm conductivity solution.

Management of Investigation Derived Waste

The drilling rig and drilling equipment were decontaminated on the bundle cleaning pad. The water is diverted to the Refinery's wastewater treatment system up-stream of the API Separator. The decontamination water generated from sampling equipment was collected in buckets and disposed at the bundle cleaning pad at the end of each day of sampling. All development/purge water was collected in five gallon buckets and disposed at the bundle cleaning pad.

Soil cuttings were placed into open top 55-gallon drums and were sealed when not in use. Each drum of soils was labeled and temporarily stored in a concrete curbed area pending waste characterization and disposal.

Appendix C

Boring Logs

Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist : Tracy Payne
Driller : Enviro-Drill Inc / Cohagan
Drilling Rig : CME75
Drilling Method : 7.25" Hollow-Stem Auger
Sampling Method : 2" Diameter Split Spoon
Comments : 2' Long
Total Depth : 20'
Ground Water : 6" BGL
Start Date : 04/28/2015
Finish Date : 04/28/2015

WELL NO. SWMU 10-1

(Sheet 1 of 1)

Elev., TOC (ft.msl) :
Elev., PAD (ft. msl) :
Elev., GL (ft. msl) :
Site Coordinates :
N : N 35° 29.429'
E : W 108° 25.817'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	Completion Results
							DESCRIPTION	
-2								Well Cap Open Borehole Bentonite Pellets 2" Sch 40 PVC w/Threaded Joints 2" Sch 40 PVC Slotted 0.01" Screen w/Threaded Joints 10/20 Sieve Sand Filter Pack 2" Flush Threaded Sch 40 PVC cap
-1								
0								
1	14.8			CL	100		SILTY CLAY, low, firm, damp, reddish brown, no odor,	
2								
3	25.7			CL	50		SILTY CLAY, SIMILAR TO ABOVE (STA), no odor,	
4								
5	30.9			CL	80		SANDY CLAY, low, soft, damp to moist, reddish brown, no odor,	
6		▼						
7	26.6			CL	90		SANDY CLAY, STA, very moist in sand seams, no odor,	
8								
9	20.7			CH	80		CLAY, high, firm, damp, reddish brown, no odor,	
10								
11	17.4			CH	90		CLAY, STA, stiff, no odor,	
12								
13	9.2			CH	90		CLAY, STA, water in sampling tube and on rods; clay is damp,	
14								
15	11.3			CLST/MDST	50		CLAYSTONE/MUDSTONE, low, very stiff, hard, light reddish brown, dry, no odor,	
16								
17	5.3			CLST	60		CLAYSTONE, STA, no odor,	
18								
19	3.6			CLST	90		CLAYSTONE, STA, no odor.	
20								
21								

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713-955-1230

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8501 N. MoPac Expy, Suite 300
Austin, Texas 78759
512-693-4190

Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist : Tracy Payne
Driller : Enviro-Drill Inc / Aguirre
Drilling Rig : NA
Drilling Method : 3" Hand Auger
Sampling Method : Auger Bucket
Comments :
Total Depth : 4'
Ground Water : Not Encountered
Start Date : 05/04/2015
Finish Date : 05/04/2015

WELL NO. SWMU 10-2

(Sheet 1 of 1)

Elev., TOC (ft.msl) :
Elev., PAD (ft. msl) :
Elev., GL (ft. msl) :
Site Coordinates :
N : N 35° 29.422
E : W 108° 25.818'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	Completion Results
							DESCRIPTION	
-2								
-1								
0	10.5			CL	100		SILTY CLAY, low to moderate, stiff, damp, brown, gravelly, no odor,	
1								
2								
3	8.0			CH	100		CLAY, moderate to high, very stiff, damp, reddish brown, no odor.	
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist : Tracy Payne
Driller : Enviro-Drill Inc / Cohagan
Drilling Rig : CME75
Drilling Method : 7.25" Hollow-Stem Auger
Sampling Method : 2" Diameter Split Spoon
Comments : 2' Long
Total Depth : 20'
Ground Water : 8' BGL
Start Date : 04/28/2015
Finish Date : 04/28/2015

WELL NO. SWMU 10-3

(Sheet 1 of 1)

Elev., TOC (ft.msl) :
Elev., PAD (ft. msl) :
Elev., GL (ft. msl) :
Site Coordinates :
N : N 35° 29.427'
E : W 108° 25.828'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	Completion Results
							DESCRIPTION	
-2								Well Cap Open Borehole Bentonite Pellets 2" Sch 40 PVC w/Threaded Joints 2" Sch 40 PVC Slotted 0.01" Screen w/Threaded Joints 10/20 Sieve Sand Filter Pack 2" FlushThreaded Sch 40 PVC cap
-1								
0								
1	12.9			CL	100		SILTY CLAY, low, firm, damp, brown, no odor,	
2								
3	24.2			CL	50		SILTY CLAY, SIMILAR TO ABOVE (STA), slightly moist at base, no odor,	
4								
5	16.7			CL	70		SILTY CLAY, STA, trace sand in seams, no odor,	
6								
7	18.9			CL	60		SILTY CLAY, STA, soft, no odor,	
8								
9	17.6			CL	80		SANDY CLAY, low, soft, damp to very moist in sand seams, brown, no odor,	
10								
11	13.7			CL	90		SANDY CLAY, STA, no odor,	
12								
13	11.2			CL	90		SILTY CLAY, moderate, firm, damp, brown, no odor,	
14				CH	90		CLAY, high, firm, damp, brown/reddish brown, no odor,	
15	7.6			CLST/MDST	60		CLAYSTONE/MUDSTONE, low, very stiff, hard, light reddish brown, dry, no odor,	
16								
17	7.2			CLST/MDST	50		CLAYSTONE/MUDSTONE, STA,	
18								
19	2.5			CLST/MDST	90		CLAYSTONE/MUDSTONE, STA.	
20								
21								

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Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist : Tracy Payne
Driller : Enviro-Drill Inc / Cohagan
Drilling Rig : CME75
Drilling Method : 7.25" Hollow-Stem Auger
Sampling Method : 2" Diameter Split Spoon
Comments : 2' Long
Total Depth : 20'
Ground Water : Not Encountered
Start Date : 04/29/2015
Finish Date : 04/29/2015

WELL NO. SWMU 10-4

(Sheet 1 of 1)

Elev., TOC (ft.msl) :
Elev., PAD (ft. msl) :
Elev., GL (ft. msl) :
Site Coordinates :
N : N 35° 29.441'
E : W 108° 25.831'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	Completion Results
							DESCRIPTION	
-2								
-1								
0								
1	40.5			CL	90		SILTY CLAY, low, very stiff, damp, brown, no odor,	
2								
3	335			CL	90		SILTY CLAY, low, firm to soft, damp, dark brown, becomes sandy at base with black staining, odor,	
4								
5	36.8			CL	90		SILTY SANDY CLAY, low, firm to soft, damp, reddish brown, faint odor,	
6								
7	42.7			CL	60		SILTY SANDY CLAY, SIMILAR TO ABOVE (STA), faint odor,	
8								
9	37.8			CH	100		CLAY, high, stiff, damp, reddish brown, sandy at base, faint odor,	
10								
11	25.6			CL	80		SANDY CLAY, low, soft, damp, very fine sand in seams, reddish brown, no odor,	
12								
13	31.1			CL	80		SILTY CLAY, low, firm, damp, reddish brown, trace sand, no odor,	
14								
15	32.9			CL	60		SILTY CLAY, low, firm, damp to dry, crumbly, dense at base, reddish brown trace grey, no odor,	
16								
17	14.1			CLST	70		CLAYSTONE, very stiff, dry, light reddish brown, no odor,	
18								
19	3.8			CLST	60		CLAYSTONE, SIMILAR TO ABOVE (STA).	
20								
21								

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Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist : Tracy Payne
Driller : Enviro-Drill Inc / Cohagan
Drilling Rig : CME75
Drilling Method : 7.25" Hollow-Stem Auger
Sampling Method : 2" Diameter Split Spoon
Comments : 2' Long
Total Depth : 24'
Ground Water : Not Encountered
Start Date : 04/29/2015
Finish Date : 04/29/2015

WELL NO. SWMU 10-5

(Sheet 1 of 1)

Elev., TOC (ft.msl) :
Elev., PAD (ft. msl) :
Elev., GL (ft. msl) :
Site Coordinates :
N : N 35° 29.432'
E : W 108° 25.837'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	DESCRIPTION	Completion Results SWMU 10-5 (Temporary)
-2									Well Cap
-1									
0									
1	108			CL	90	X		SILTY CLAY, low, firm, damp, brown, black staining at base, odor,	
2									
3	61			CL	60	X		CLAY, low, very soft, damp, wood debris, light greyish green, sticky, odor,	Open Borehole
4									
5	445			CL	90	X		CLAY, SIMILAR TO ABOVE (STA), brownish green, odor,	
6									
7	330			CL	50			CLAY, STA, odor,	2" Sch 40 PVC w/Threaded Joints
8									
9	30.6			CL	90			CLAY, low, very soft, damp, light greyish green, sticky, odor,	
10									Bentonite Pellets
11	26.3			CL	90			CLAY, STA, moist, odor,	
12									
13	3.5			CL	90			CLAY, STA, moist, reddish brown clay at 13.75-14' mixed with greyish green clay, odor,	
14									
15	75.2			CL	40	X		CLAY, STA, greyish green and reddish brown clay, odor,	10/20 Sieve Sand Filter Pack
16									
17	9.4			CL	90			CLAY, STA,	2" Sch 40 PVC Slotted 0.01" Screen w/Threaded Joints
18									
19	26.8			CL	90			CLAY, STA, greyish green clay only,	
20									
21	16.5			CL	40			CLAY, STA, CLAYSTONE at base,	
22									
23	10.7			CLST	70	X		CLAYSTONE, very stiff, dry, light reddish brown with grey seams.	2" Flush Threaded Sch 40 PVC Cap
24									
25									

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Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist : Tracy Payne
Driller : Enviro-Drill Inc / Aguirre
Drilling Rig : NA
Drilling Method : 3" Hand Auger
Sampling Method : Auger Bucket
Comments :
Total Depth : 12'
Ground Water : Not Encountered
Start Date : 05/04/2015
Finish Date : 05/04/2015

WELL NO. SWMU 10-6

(Sheet 1 of 1)

Elev., TOC (ft.msl) :
Elev., PAD (ft. msl) :
Elev., GL (ft. msl) :
Site Coordinates :
N : N 35° 29.422'
E : W 108° 25.834'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	Completion Results
							DESCRIPTION	
-2								
-1								
0								
1	2.7			CL	100		SILTY CLAY, low to moderate, firm, damp, reddish brown, no odor,	
2								
3	4.3			CL	100		SILTY CLAY, SIMILAR TO ABOVE (STA), no odor,	
4								
5	4.7			CL	100		SILTY CLAY, STA, no odor,	
6								
7	2.9			CL	100		SILTY CLAY, STA, no odor,	
8								
9	3.2			CH	100		CLAY, high, very stiff, damp, reddish brown, no odor,	
10								
11	4.1			CL	100		CLAY, low, stiff, dry, light reddish brown, refusal, no odor.	
12								
13								

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Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist : Tracy Payne
Driller : Enviro-Drill Inc / Aguirre
Drilling Rig : CME75
Drilling Method : 7.25" Hollow-Stem Auger
Sampling Method : 2" Diameter Split Spoon
Comments : 2' Long
Total Depth : 20'
Ground Water : Not Encountered
Start Date : 05/01/2015
Finish Date : 05/01/2015

WELL NO. SWMU 10-7

(Sheet 1 of 1)

Elev., TOC (ft.msl) :
Elev., PAD (ft. msl) :
Elev., GL (ft. msl) :
Site Coordinates :
N : N 35° 29.412'
E : W 108° 25.833'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	Completion Results
							DESCRIPTION	
-2								
-1								
0								
1	6.2			CL	90		SILTY CLAY, low, firm, damp, brown, no odor,	
2								
3	9.5			CL	90		SILTY CLAY, SIMILAR TO ABOVE (STA), trace black staining at base, no odor,	
4								
5	10.6			CH	90		CLAY, high, stiff to firm, damp, reddish brown, no odor,	
6								
7	9.7			CH	50		CLAY, STA, no odor,	
8								
9	9.1			CLST	60		CLAYSTONE, very stiff, dry, light reddish brown, no odor,	
10								
11	4.2			CLST	60		CLAYSTONE, STA, no odor,	
12								
13	8.1			CLST	60		CLAYSTONE, STA, no odor,	
14								
15	8.9			CLST	60		CLAYSTONE, STA, no odor,	
16								
17	8.2			CLST	50		CLAYSTONE, STA, no odor,	
18								
19	2.7			CLST	90		CLAYSTONE, STA, no odor.	
20								
21								

Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist : Tracy Payne
Driller : Enviro-Drill Inc / Cohagan
Drilling Rig : CME75
Drilling Method : 7.25" Hollow-Stem Auger
Sampling Method : 2" Diameter Split Spoon
Comments : 2' Long
Total Depth : 20' BGL
Ground Water : Not Encountered
Start Date : 04/30/2015
Finish Date : 04/30/2015

WELL NO. SWMU 10-8

(Sheet 1 of 1)

Elev., TOC (ft.msl) :
Elev., PAD (ft. msl) :
Elev., GL (ft. msl) :
Site Coordinates :
N : N 35° 29.427'
E : W 108° 25.846'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	Completion Results
							DESCRIPTION	
-2								
-1								
0								
1	12.9			CL	50		SILTY CLAY, low, firm, damp, brown, no odor,	
2								
3	1489			CL	60		SILTY SANDY CLAY, SIMILAR TO ABOVE (STA), sandy, hydrocarbon (hc) odor and staining at base,	
4								
5	400			CL	60		SILTY SANDY CLAY, STA, odor,	
6								
7	-				-		No Recovery,	
8								
9	22.9			CLST/ MDST	80		CLAYSTONE/MUDSTONE, very stiff, dry, light reddish brown and grey, no odor,	
10								
11	22.8			CLST	60		CLAYSTONE, STA, no odor,	
12								
13	24.6			CLST	60		CLAYSTONE, STA, no odor,	
14								
15	12.1			CLST	60		CLAYSTONE, STA, no odor,	
16								
17	10.2			CLST	70		CLAYSTONE, STA, no odor,	
18								
19	5.7			CLST	90		CLAYSTONE, STA, no odor.	
20								
21								

Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist : Tracy Payne
Driller : Enviro-Drill Inc / Aguirre
Drilling Rig : CME75
Drilling Method : 7.25" Hollow-Stem Auger
Sampling Method : 2" Diameter Split Spoon
Comments : 2' Long
Total Depth : 20'
Ground Water : Not Encountered
Start Date : 04/30/2015
Finish Date : 04/30/2015

WELL NO. SWMU 10-9

(Sheet 1 of 1)

Elev., TOC (ft.msl) :
Elev., PAD (ft. msl) :
Elev., GL (ft. msl) :
Site Coordinates :
N : N 35° 29.428'
E : W 108° 25.855'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	Completion Results
							DESCRIPTION	
-2								
-1								
0								
1	18			CL	80		SILTY CLAY, low, firm, dry to damp, brown, no odor,	
2								
3	19.1			CL	60		SILTY CLAY, SIMILAR TO ABOVE (STA), damp, no odor,	
4								
5	380			CL	100		SANDY CLAY, low, soft, damp, dark reddish brown with black staining, claystone at base, hydrocarbon (hc) odor,	
6								
7	27			CLST	50		CLAYSTONE, very stiff, damp to dry, light reddish brown, odor,	
8								
9	28.9			CLST	60		CLAYSTONE, STA, trace grey, no odor,	
10								
11	10.7			CLST	70		CLAYSTONE, STA, no odor,	
12								
13	4			CLST	60		CLAYSTONE, STA, no odor,	
14								
15	8.9			CLST	60		CLAYSTONE, STA, no odor,	
16								
17	6.4			CLST	50		CLAYSTONE, STA, no odor,	
18								
19	6.2			CLST	80		CLAYSTONE, STA, no odor.	
20								
21								

Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist : Tracy Payne
Driller : Enviro-Drill Inc / Aguirre
Drilling Rig : CME75
Drilling Method : 7.25" Hollow-Stem Auger
Sampling Method : 2" Diameter Split Spoon
Comments : 2' Long
Total Depth : 20'
Ground Water : Not Encountered
Start Date : 04/30/2015
Finish Date : 04/30/2015

WELL NO. SWMU 10-10

(Sheet 1 of 1)

Elev., TOC (ft.msl) :
Elev., PAD (ft. msl) :
Elev., GL (ft. msl) :
Site Coordinates :
N : N 35° 29.431'
E : W 108° 25.864'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	Completion Results
							DESCRIPTION	
-2								
-1								
0								
1	11.9			SC	90		CLAYEY SAND, compact to loose, dry to damp, brown, faint odor at base,	
2								
3	18.4			SC	90		CLAYEY SAND, SIMILAR TO ABOVE (STA), odor,	
4								
5	1685			SC	80		CLAYEY SAND, compact, damp, brown with black staining, hydrocarbon (hc) odor,	
6								
7	1514			CL	60		SANDY CLAY, low, soft, damp to moist, black, hc odor,	
8								
9	686			CL	90		SANDY CLAY, STA, black and dark reddish brown, hc odor,	
10								
11	655			CL	90		SILTY CLAY, STA, claystone at base, hc odor and hc stain,	
12								
13	75			CLST	40		CLAYSTONE, very stiff/dense, light reddish brown and grey, dry, faint odor,	
14								
15	18			CLST	50		CLAYSTONE, STA, no odor,	
16								
17	16.8			CLST	60		CLAYSTONE, STA, no odor,	
18								
19	8.5			CLST	90		CLAYSTONE, STA, no odor.	
20								
21								

Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist : Tracy Payne
Driller : Enviro-Drill Inc / Aguirre
Drilling Rig : CME75
Drilling Method : 7.25" Hollow-Stem Auger
Sampling Method : 2" Diameter Split Spoon
Comments : 2' Long
Total Depth : 20' BGL
Ground Water : 4' BGL
Start Date : 05/12/2015
Finish Date : 05/12/2015

WELL NO. SWMU 10-11

(Sheet 1 of 1)

Elev., TOC (ft.msl) :
Elev., PAD (ft. msl) :
Elev., GL (ft. msl) :
Site Coordinates :
N : N 35° 29.434'
E : W 108° 25.873'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	Completion Results
							DESCRIPTION	
-2								Well Cap Bentonite Pellets 2" Sch 40 PVC w/Threaded Joints 2" Sch 40 PVC Slotted 0.01" Screen w/Threaded Joints 10/20 Sieve Sand Filter Pack 2" Flush Threaded Sch 40" PVC Cap
-1								
0								
1	13.1			CL	80		SILTY CLAY, low, firm, damp, brown, no odor,	
2							SILTY CLAY, SIMILAR TO ABOVE (STA),	
3	4.0			CL	10			
4		▼						
5	524			SC	50		CLAYEY SAND, fine, compact, moist to saturated, black, odor,	
6							CLAYEY SAND, STA, saturated,	
7	133			SC	60			
8							CLAYEY SAND, STA, dark brown, black sludge lens at 9.75', saturated, odor,	
9	570			SC	80			
10							CLAYEY SAND, STA, moist to saturated, odor,	
11	8.5			SC	70			
12							CLAYEY SAND/SANDY CLAY, low, soft, damp to very moist, brown, odor,	
13	69.2			SC/CL	70			
14							SANDY CLAY, low, firm, damp, reddish brown, gravel at base, faint odor,	
15	20.6			CL	40			
16							SANDY GRAVELLY CLAY, stiff, damp, reddish brown, no odor,	
17	7.2			CL	60		CLAYSTONE, very stiff, damp to dry, reddish purple, no odor,	
18				CLST	60		CLAYSTONE, STA, no odor.	
19	13.4			CLST	60			
20								
21								

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Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist : Tracy Payne
Driller : Enviro-Drill Inc / Aguirre
Drilling Rig : CME75
Drilling Method : 7.25" Hollow-Stem Auger
Sampling Method : 2" Diameter Split Spoon
Comments : 2' Long
Total Depth : 22'
Ground Water : 4'
Start Date : 05/12/2015
Finish Date : 05/12/2015

WELL NO. SWMU 10-12

(Sheet 1 of 1)

Elev., TOC (ft.msl) :
Elev., PAD (ft. msl) :
Elev., GL (ft. msl) :
Site Coordinates :
N : N 35° 29.435'
E : W 108° 25.883'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	Completion Results
							DESCRIPTION	
-2								Well Cap Bentonite Pellets 2" Sch 40 PVC w/Threaded Joints ▼ 2" Sch 40 PVC Slotted 0.01" Screen w/Threaded Joints 10/20 Sieve Sand Filter Pack 2" Flush Threaded Sch 40 PVC Cap
-1								
0								
1	3.0			CL	90		SILTY CLAY, low, firm, damp, brown, no odor,	
2								
3	5.4			CL	5		SILTY CLAY, SIMILAR TO ABOVE (STA),	
4		▼						
5	6.0			CL	90		SILTY CLAY, STA, trace sand, very moist, no odor,	
6								
7	4.5			CL	90	X	SILTY CLAY, STA, damp, occasional black staining, hard black rock asphalt at top, 20 mm,	
8								
9	6.1			CL	70		SILTY CLAY, low, soft, damp to moist in sand, occasional gravel, brown, no odor,	
10								
11	6.9			CL	70		SILTY CLAY, STA,	
12	6.1			SC	70		CLAYEY SAND, fine, compact, saturated, brown, no odor,	
13	4.9			SM	90		SILTY SAND, fine, loose, gravelly at 12.5' to 12.75' BGL, saturated, brown, no odor,	
14								
15	2.9			SM	90		SILTY SAND, STA,	
16								
17	1.8			CL	60		SANDY CLAY, low, firm, damp, brown, no odor,	
18								
19	1.2			CL	60		GRAVELLY CLAY, STA, 10 mm gravel, no odor,	
20								
21	1.5			CLST	80	X	CLAYSTONE, very stiff, damp to dry, reddish purple, grey and dark reddish brown, no odor.	
22								
23								

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Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist : Tracy Payne
Driller : Enviro-Drill Inc / Aguirre
Drilling Rig : CME75
Drilling Method : 7.25" Hollow-Stem Auger
Sampling Method : 2" Diameter Split Spoon
Comments : 2' Long
Total Depth : 20' BGL
Ground Water : Not Encountered
Start Date : 05/13/2015
Finish Date : 05/13/2015

WELL NO. SWMU 10-13

(Sheet 1 of 1)

Elev., TOC (ft.msl) :
Elev., PAD (ft. msl) :
Elev., GL (ft. msl) :
Site Coordinates :
N : N 35° 29.437'
E : W 108° 25.860'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	Completion Results
							DESCRIPTION	
-2								
-1								
0								
1	4.4			CL	90		SILTY CLAY, low, firm, damp to dry, brown, no odor,	
2								
3	5.6			CL	80		SILTY CLAY, SIMILAR TO ABOVE (STA), very stiff, calcareous, no odor,	
4								
5	775			CL	50		SILTY CLAY, STA,	
6								
7	1055			CH	90		CLAY, high, firm, damp, dark brown, black staining, odor,	
8								
9	721			CH	70		GRAVELLY CLAY, STA with 10 mm gravel, trace sand, damp, dark brown, odor,	
10				CLST	70		CLAYSTONE, very stiff, dry, reddish purple, faint odor,	
11	11			CLST	50		CLAYSTONE, STA, brownish purple and grey, no odor,	
12								
13	10.3			CLST	50		CLAYSTONE, STA, reddish brown and grey, no odor,	
14								
15	10.4			CLST	70		CLAYSTONE, STA, no odor,	
16								
17	12.4			CLST	10		CLAYSTONE, STA, no odor,	
18								
19	14.1			CLST	80		CLAYSTONE, STA, no odor.	
20								
21								

Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist : Tracy Payne
Driller : Enviro-Drill Inc / Aguirre
Drilling Rig : CME75
Drilling Method : 7.25" Hollow-Stem Auger
Sampling Method : 2" Diameter Split Spoon
Comments : 2' Long
Total Depth : 23' BGL
Ground Water : 2' BGL
Start Date : 05/12/2015
Finish Date : 05/12/2015

WELL NO. SWMU 10-14

(Sheet 1 of 1)

Elev., TOC (ft.msl) :
Elev., PAD (ft. msl) :
Elev., GL (ft. msl) :
Site Coordinates :
N : N 35° 29.424'
E : W 108° 25.867'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	Completion Results
							DESCRIPTION	
-2								Well Cap Bentonite Pellets 2" Sch 40 PVC w/Threaded Joints 2" Sch 40 PVC Slotted 0.01" Screen w/Threaded Joints 10/20 Sieve Sand Filter Pack 2" Flush Threaded Sch 40 PVC Cap
-1								
0								
1	3.2			CL	60		SILTY CLAY, low, firm, dry to damp, brown, no odor,	
2							No Recovery - Water on Spoon	
3								
4								
5	10.1			GC	10		CLAYEY GRAVEL, loose, saturated, light tan, faint odor,	
6				CH	50		CLAY, high, stiff, damp, dark brown, odor,	
7	900			SC	50		CLAYEY SAND, fine, compact, saturated, dark brown, odor,	
8							SANDY CLAY, low, very soft, damp to moist, brown, odor,	
9	23.7			CL	60			
10							CLAYEY GRAVELLY SAND, fine to coarse, saturated, brown, no odor,	
11	15.9			SW	80			
12							CLAYEY GRAVELLY SAND, SIMILAR TO ABOVE (STA), saturated, no odor,	
13	22.4			SW	80			
14							CLAYEY GRAVELLY SAND, STA, saturated, increase in clay at base, decrease in moisture, no odor,	
15	16.9			SW	70			
16							GRAVELLY CLAY, low, very stiff, damp, 10 mm gravel, reddish brown and grey, no odor,	
17	7.9			CL	20			
18							GRAVELLY CLAY, STA, no odor,	
19	5.2			CL	50			
20				CLST	50		CLAYSTONE, very stiff, dry, reddish brown and grey, no odor,	
21	6.1			CLST	20		CLAYSTONE, STA, no odor,	
22							CLAYSTONE, STA, no odor.	
23	1.8			CLST	50			
24								

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Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist : Tracy Payne
Driller : Enviro-Drill Inc / Aguirre
Drilling Rig : CME75
Drilling Method : 7.25" Hollow-Stem Auger
Sampling Method : 2" Diameter Split Spoon
Comments : 2' Long
Total Depth : 20' BGL
Ground Water : 7' BGL
Start Date : 05/13/2015
Finish Date : 05/13/2015

WELL NO. SWMU 10-15

(Sheet 1 of 1)

Elev., TOC (ft.msl) :
Elev., PAD (ft. msl) :
Elev., GL (ft. msl) :
Site Coordinates :
N : N 35° 29.446'
E : W 108° 25.287'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	Completion Results
							DESCRIPTION	
-2								
-1								
0				CL	90			Well Cap
1	11.4			CH	90			
2								
3	11.1			CL	90			Bentonite Pellets
4				CL	90			
5	13.9			CH	90			2" Sch 40 PVC w/Threaded Joints
6				CL	90			
7	12.4	▼		CL	90		▼	
8								
9	12.3			SC	90			
10				CH	90			10/20 Sieve Sand Filter Pack
11	10.7			CL	90			2" Sch 40 PVC Slotted 0.01" Screen w/Threaded Joints
12				CL	90			
13	8.9			CL	90			
14				SC	90			
15	8.4			CL	70			
16								
17	8.3			CL	90			2" Flush Threaded Sch 40 PVC Cap
18				CLST	90			
19	7.1			CLST	70			
20								
21								

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Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist : Tracy Payne
Driller : Enviro-Drill Inc / Aguirre
Drilling Rig : NA
Drilling Method : Hand Auger
Sampling Method : Auger Bucket
Comments :
Total Depth : 9'
Ground Water : 5.5'
Start Date : 05/13/2015
Finish Date : 05/13/2015

WELL NO. SWMU 10-16

(Sheet 1 of 1)

Elev., TOC (ft.msl) :
Elev., PAD (ft. msl) :
Elev., GL (ft. msl) :
Site Coordinates :
N : N 35° 29.417'
E : W 108° 25.881'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	Completion Results
							DESCRIPTION	
-2								Well Cap
-1								
0								
1	10.4			CL	100		SILTY CLAY, low, firm, damp, brown, no odor,	2" Sch 40 PVC w/Threaded Joints
2							SILTY CLAY, SIMILAR TO ABOVE (STA),	
3	4.9			CL	100			10/20 Sieve Sand Filter Pack
4							SILTY CLAY, STA,	2" Sch 40 PVC Slotted 0.01" Screen w/Threaded Joints
5	4.4			CL	100		SANDY CLAY, low, firm to soft, damp to moist to saturated at 5.5', brown, no odor,	
6	8.4			SC	100		CLAYEY SAND, fine, loose, saturated, brown, no odor,	
7	0.5			SC	100		CLAYEY SAND, STA, saturated,	
8								
9	6.8			CH	100		CLAY, high, stiff, damp, brown, no odor.	2" Flush Threaded Sch 40 PVC Cap
10								
11								
12								
13								
14								
15								

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Western Refining SW, Inc.
Gallup Refinery - SWMU 10
Job No. WEST15005

Geologist : Tracy Payne
Driller : Enviro-Drill Inc / Aguirre
Drilling Rig : NA
Drilling Method : Hand Auger
Sampling Method : Auger Bucket
Comments :
Total Depth : 8'
Ground Water : Not Encountered
Start Date : 05/13/2015
Finish Date : 05/13/2015

WELL NO. SWMU 10-17

(Sheet 1 of 1)

Elev., TOC (ft.msl) :
Elev., PAD (ft. msl) :
Elev., GL (ft. msl) :
Site Coordinates :
N : N 35° 29.437'
E : W 108° 25.858'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	Completion Results
							DESCRIPTION	
-2								
-1								
0								
1	3.8			CL	100		SILTY CLAY, low, stiff, damp, brown, no odor,	
2								
3	4.1			CL	100		SILTY CLAY, SIMILAR TO ABOVE (STA), sandy at base,	
4								
5	292			SC	100		CLAYEY SAND, fine, compact, damp, faint odor,	
6								
7	1667			SC	100		CLAYEY SAND, STA, moist at base, odor.	
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

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Western Refining SW, Inc.
Gallup Refinery - SWMU No. 10
Job No. WEST16006

Geologist : Tracy Payne
Driller : Enviro-Drill, Inc. / Cohagan
Drilling Rig : CME 75
Drilling Method : Hollow Stem Auger
Sampling Method : Split Spoon
Comments : Hand Auger 0-5' BGL
Total Depth : 20'
Ground Water : Not Encountered
Start Date : 05/16/2016
Finish Date : 05/16/2016

BORING NO. SWMU 10-18

(Sheet 1 of 1)

Elev., TOC (ft.msl) :
Elev., PAD (ft. msl) :
Elev., GL (ft. msl) :
Site Coordinates :
N : N 35° 29.445'
E : W 108° 25.875'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	Completion Results
							DESCRIPTION	
-2								
-1								
0								
1	6.6			CL	100		SILTY CLAY, low, firm, dry to damp, brown, no odor,	
2								
3	6.2			CL	100		SILTY CLAY, SIMILAR TO ABOVE (STA),	
4								
5	8.9			CL	100		SILTY CLAY, STA,	
6								
7	18.4			CL	90		SILTY CLAY, STA,	
8								
9	20.6			CL	90		SILTY CLAY, STA, crumbly at base,	
10								
11	14.1			CLST	90		CLAYSTONE, very stiff, dry, reddish purple, no odor,	
12								
13	12.9			CLST	90		CLAYSTONE, STA, reddish purple and grey,	
14								
15	9.3			CLST	90		CLAYSTONE, STA,	
16								
17	10.1			CLST	75		CLAYSTONE, STA,	
18								
19	8.7			CLST	80		CLAYSTONE, STA.	
20								
21								

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DiSorbo Consulting, LLC

8501 N. MoPac Expy, Suite 300
Austin, Texas 78759
512-693-4190

Western Refining SW, Inc.
Gallup Refinery - SWMU No. 10
Job No. WEST16006

Geologist : Tracy Payne
Driller : Enviro-Drill, Inc. / Cohagan
Drilling Rig : CME 75
Drilling Method : Hollow Stem Auger
Sampling Method : Split Spoon - 2'
Comments : Hand Auger 0-5' BGL
Total Depth : 20'
Ground Water : Not Encountered
Start Date : 05/17/2016
Finish Date : 05/17/2016

BORING NO. SWMU 10-19

(Sheet 1 of 1)

Elev., TOC (ft.msl) :
Elev., PAD (ft. msl) :
Elev., GL (ft. msl) :
Site Coordinates :
N : N 35° 29.446'
E : W 108° 25.861'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	Completion Results
							DESCRIPTION	
-2								
-1								
0								
1	3.5			CL	100		SILTY CLAY, low, firm, dry to damp, brown, no odor,	
2								
3	1.5			CL	100		SILTY CLAY, SIMILAR TO ABOVE (STA),	
4								
5	2.4			CL	100		SILTY CLAY, STA,	
6								
7	8.2			CH	70		CLAY, high, firm, damp, brown, no odor,	
8								
9	12.6			CH	70		CLAY, STA,	
10								
11	12.8			CL	90		SILTY CLAY, low, firm, crumbly, damp, reddish brown, no odor, moist, dense, grey clay at base,	
12								
13	900			CLST	90		CLAYSTONE, very stiff, dry, reddish brown and grey, chemical odor,	
14								
15	291			CLST	80		CLAYSTONE, STA, faint odor,	
16								
17	233			CLST	60		CLAYSTONE, STA, odor,	
18								
19	30.1			CLST	70		CLAYSTONE, STA.	
20								
21								

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Western Refining SW, Inc.
Gallup Refinery - SWMU No. 10
Job No. WEST16006

Geologist : Tracy Payne
Driller : Enviro-Drill, Inc. / Cohagan
Drilling Rig : CME 75
Drilling Method : Hollow Stem Auger
Sampling Method : Split Spoon - 2'
Comments : Hand Auger 0-5' BGL
Total Depth : 22'
Ground Water : 12'
Start Date : 05/17/2016
Finish Date : 05/17/2016

BORING NO. SWMU 10-20

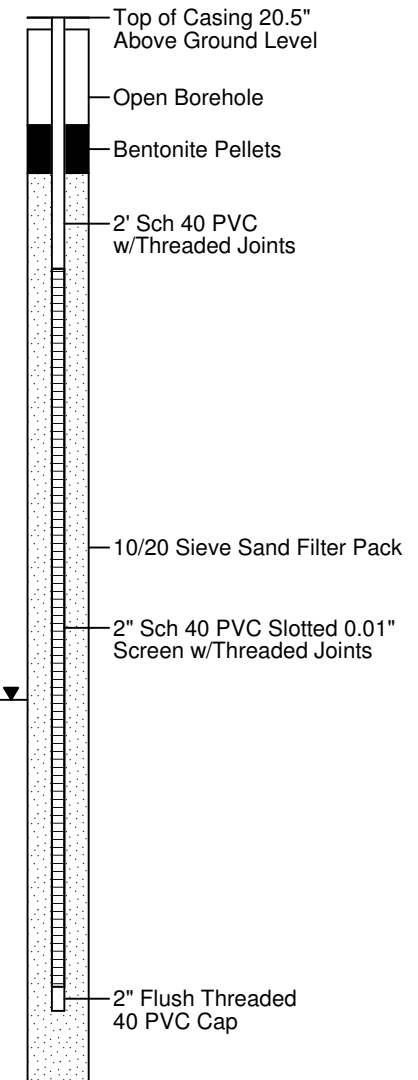
(Sheet 1 of 1)

Elev., TOC (ft.msl) :
Elev., PAD (ft. msl) :
Elev., GL (ft. msl) :
Site Coordinates :
N : N 35° 29.447'
E : W 108° 25.849'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation
							DESCRIPTION
-2							
-1							
0							SILTY CLAY, low, firm, damp, brown, no odor,
1	1.3			CL	100		
2							SILTY CLAY, SIMILAR TO ABOVE (STA),
3	0.7			CL	100		
4							SILTY CLAY, STA,
5	1.0			CL	100		
6							SILTY CLAY, STA, odor,
7	1436			CL	100		
8							CLAY, high, firm, damp, brown, chemical odor, black staining at base,
9	1603			CH	60		
10							SILTY SANDY CLAY, moderate, firm, damp to moist, odor,
11	1715			CL	80		
12							SILTY SANDY CLAY, STA, moist to saturated, odor,
13	376			CL	90		
14							SILTY SANDY CLAY, STA, moist to saturated in sand seam at 15.5' BGL, odor,
15	77			CL	90		
16							SILTY SANDY CLAY, STA, moist to saturated, black staining, odor,
17	1022			CL	90		
18							SILTY CLAY, low, soft, damp to moist, brown, odor, claystone at base,
19	72			CL	90		
20							CLAYSTONE, very stiff, dry, reddish purple and grey, no odor.
21	10.2			CLST	80		
22							
23							

Temporary Well Settings

TEMP WELL SWMU 10-20



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Western Refining SW, Inc.
Gallup Refinery - SWMU No. 10
Job No. WEST16006

Geologist : Tracy Payne
Driller : Enviro-Drill, Inc. / Cohagan
Drilling Rig : CME 75
Drilling Method : Hollow Stem Auger
Sampling Method : Split Spoon
Comments :
Total Depth : 22'
Ground Water : 14'
Start Date : 05/18/2016
Finish Date : 05/18/2016

BORING NO. SWMU 10-21

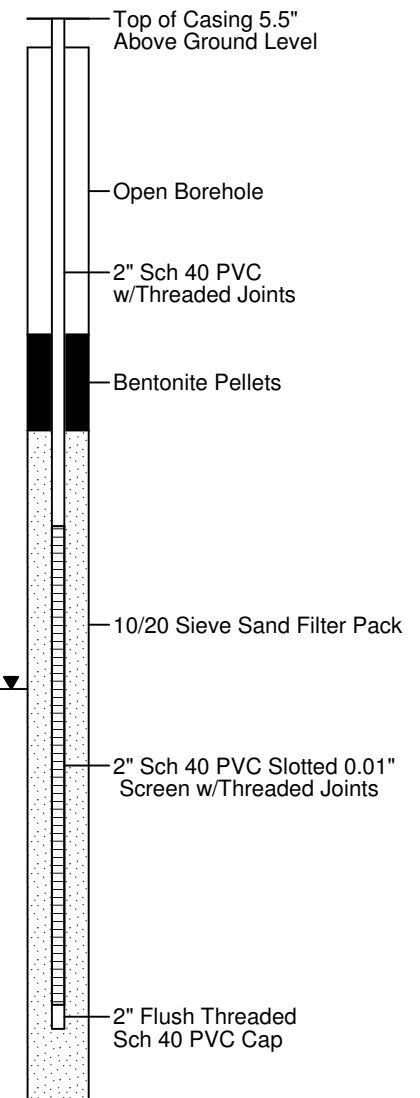
(Sheet 1 of 1)

Elev., TOC (ft.msl) :
Elev., PAD (ft. msl) :
Elev., GL (ft. msl) :
Site Coordinates :
N : N 35° 29.442'
E : W 108°25.823'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation
							DESCRIPTION
-2							
-1							
0							
1	1.5			ML	100		SILT/GRAVEL, compact, damp, no odor,
2							
3	17.0			CL	100		SILTY CLAY, low, firm, damp, brown, no odor,
4							
5	16.7			CL	100		SILTY CLAY, SIMILAR TO ABOVE (STA), no odor,
6							
7	7.2			CL	90		SANDY SILTY CLAY, low, soft, sand in seams, damp, brown, no odor,
8							
9	9.6			CL	90		SANDY SILTY CLAY, STA, no odor,
10							
11	5.3			CH	90		CLAY, high, soft, damp, brown, no odor,
12							
13	12.1			CH	90		CLAY, STA, sandy at base, no odor,
14							
15				CL	60		SANDY SILTY CLAY, low, soft, moist to saturated in sand seams, brown, no odor,
16							
17				CL	70		SANDY SILTY CLAY, STA, saturated in sand seams, no odor,
18							
19	6.1			CL	70		SANDY SILTY CLAY, STA, damp, no odor,
20							
21	2.7			CLST	70		CLAYSTONE, very stiff, dry, reddish purple and grey, no odor.
22							
23							

Temporary Well Settings

TEMP WELL SWMU 10-21



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Western Refining SW, Inc.
Gallup Refinery - SWMU No. 10
Job No. WEST16006

Geologist : Tracy Payne
Driller : Enviro-Drill, Inc. / Cohagan
Drilling Rig :
Drilling Method : Hand Auger
Sampling Method : Auger Bucket
Comments :
Total Depth : 9'
Ground Water : Not Encountered
Start Date : 05/18/2016
Finish Date : 05/18/2016

BORING NO. SWMU 10-22

(Sheet 1 of 1)

Elev., TOC (ft.msl) :
Elev., PAD (ft. msl) :
Elev., GL (ft. msl) :
Site Coordinates :
N : N 35° 29.418'
E : W 108° 25.846'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	Completion Results
							DESCRIPTION	
-2								
-1								
0								
1	5.6			CL	100		CLAY, moderate, firm, damp, brown, no odor,	
2								
3	2.0			CL	100		CLAY, SIMILAR TO ABOVE (STA),	
4								
5	4.1			CL	100		CLAY, STA,	
6								
7	6.9			CL	100		CLAY, STA,	
8								
9								
10								

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Western Refining SW, Inc.
Gallup Refinery - SWMU No. 10
Job No. WEST16006

Geologist : Tracy Payne
Driller : Enviro-Drill, Inc. / Cohagan
Drilling Rig : CME75
Drilling Method : Hollow Stem Auger - 7.5"
Sampling Method : 2' Split Spoon - 2" Diameter
Comments : Hand Augered to 6' BGL;
Total Depth : 17' Grouted Borehole 9/19/16
Ground Water : Not Encountered
Start Date : 9/19/2016
Finish Date : 9/19/2016

BORING NO. SWMU 10-23

(Sheet 1 of 1)

Elev., TOC (ft.msl) :
Elev., PAD (ft. msl) :
Elev., GL (ft. msl) :
Site Coordinates :
N : N 35° 29.542'
E : W 108° 25.869'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	Completion Results
							DESCRIPTION	
-2								
-1								
0								
1	0.0			ML	100		SILT, low, soft, damp, brown, no odor,	
2								
3	0.2			ML	100		SILT, SIMILAR TO ABOVE (STA),	
4								
5	0.2			ML	100		SILT, STA,	
6								
7	2.0			CL	50		SILTY CLAY, low, firm, damp, brown, trace fine grain sand, no odor,	
8								
9	3.3			CL	60		SILTY CLAY, STA, no odor,	
10								
11	3.7			CL	90		SILTY CLAY, STA, no odor,	
12								
13	3.5			CL	60		SILTY CLAY, low, soft, damp, brown, no odor,	
14								
15	2.5			CL	90		SILTY CLAY, STA, damper than above, no odor,	
16	1.4			CLST	90		CLAYSTONE, very stiff, slightly sandy, pink, dry, no odor,	
17	1.4			CLST	90		CLAYSTONE, STA.	
18								

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Western Refining SW, Inc.
Gallup Refinery - SWMU No. 10
Job No. WEST16006

Geologist : Tracy Payne
Driller : Enviro-Drill, Inc. / Cohagan
Drilling Rig : CME75
Drilling Method : Hollow Stem Auger - 7.5"
Sampling Method : 2' Split Spoon - 2" Diameter
Comments : Hand Augered to 6' BGL;
Total Depth : 17' Grouted Borehole 9/19/16
Ground Water : Not Encountered
Start Date : 9/19/2016
Finish Date : 9/19/2016

BORING NO. SWMU 10-24

(Sheet 1 of 1)

Elev., TOC (ft.msl) :
Elev., PAD (ft. msl) :
Elev., GL (ft. msl) :
Site Coordinates :
N : N 35° 29.452'
E : W 108° 25.856'

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	Completion Results
							DESCRIPTION	
-2								
-1								
0								
1	2.4			ML	100		SILT, low, soft, damp, brown, no odor,	
2								
3	2.5			ML	100		SILT, SIMILAR TO ABOVE (STA),	
4								
5	1.1			ML	100		SILT, STA,	
6								
7	3000			CL	90		SILTY CLAY, low, soft to firm, damp, dark brown, odor,	
8								
9	2021			CL	90		SILTY CLAY, STA, sandy at base, very moist/oily phase separated hydrocarbon (psh) present, odor,	
10								
11	307			CL	100		SILTY CLAY, low, firm, damp, brown, odor,	
12								
13	443			CL	100		SILTY CLAY, STA, odor,	
14								
15	123			CL	90		SILTY CLAY, STA, odor,	
16	56			CLST	90		CLAYSTONE, very stiff, slightly sandy, pink, dry, faint odor,	
17	80			CLST	90		CLAYSTONE, STA.	
18								

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512-693-4190

Western Refining SW, Inc.
Gallup Refinery - SWMU No. 10
Job No. WEST16006

Geologist : Tracy Payne
Driller : Enviro-Drill, Inc. / Cohagan
Drilling Rig : CME75
Drilling Method : Hollow Stem Auger - 7.5"
Sampling Method : 2" Split Spoon - 2" Diameter
Comments : Hand Augered to 6' BGL
Total Depth : 19'
Ground Water : 12'
Start Date : 9/19/2016
Finish Date : 9/19/2016

BORING NO. SWMU 10-25

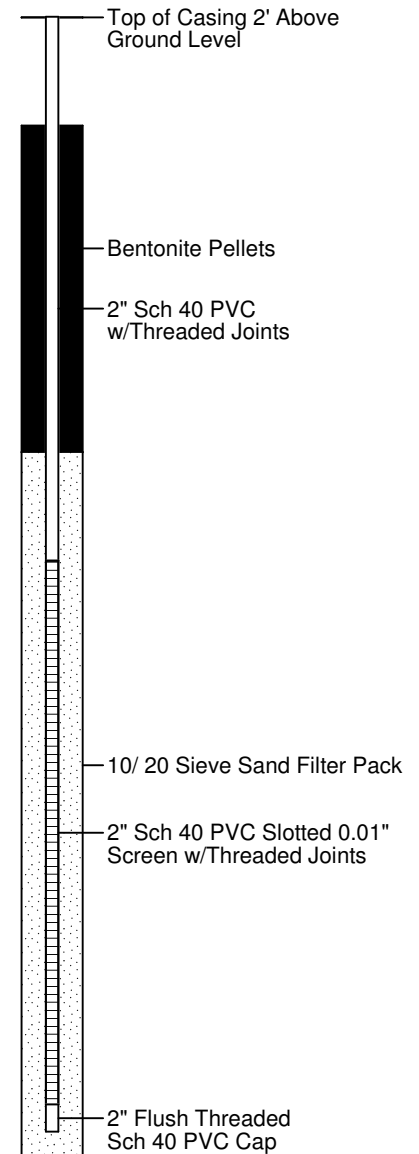
(Sheet 1 of 1)

Elev., TOC (ft.msl) :
Elev., PAD (ft. msl) :
Elev., GL (ft. msl) :
Site Coordinates :
N : N 35° 29.453'
E : W 108° 25.842

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation
							DESCRIPTION
-2							
-1							
0							SILT, low, soft, damp, brown, no odor,
1	1.9			ML	100		
2							
3	1319			CL	100		SILTY CLAY, low, soft, damp, brown, odor,
4							
5	187			CL	100		SILTY CLAY, SIMILAR TO ABOVE (STA), odor,
6							
7	108			CL	90		SILTY CLAY, low, firm, damp, brown, odor,
8							
9	201			CL	90		SILTY CLAY, STA, odor,
10							
11	367			CL	90		SANDY CLAY, low, soft, damp, brown to black discoloration in sand, odor,
12							
13	338			CL	90		SANDY CLAY, STA, odor,
14	350			CL	90		SILTY CLAY, low, firm, damp, brown, odor,
15							
16	10.6			CL	100		SANDY CLAY, low, very soft, saturated, dark brown, odor,
17							
18	5			CLST	100		SILTY CLAY, low, firm, damp, dark brown, odor,
19							
20	5			CLST	100		SANDY CLAY, low, soft to firm, very damp to moist, dark brown, faint odor,
							SANDY CLAY, STA, faint odor,
							CLAYSTONE, very stiff, dry, brown and grey,
							CLAYSTONE, STA.

Temporary Well Settings

Temp Well SWMU 10-25



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512-693-4190

Appendix D

Analytical Data Reports



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

October 05, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10

OrderNo.: 1504C86

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 4/29/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 01, 2015.

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, Inc.

Analytical Report

Lab Order 1504C86

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB01

Project: SWMU 10

Collection Date: 4/28/2015 4:50:00 PM

Lab ID: 1504C86-001

Matrix: AQUEOUS

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH	
Diesel Range Organics (DRO)	ND	0.91	1.0		mg/L	1	5/1/2015 1:48:33 PM	18985
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/1/2015 1:48:33 PM	18985
Surr: DNOP	104	0	76.5-150		%REC	1	5/1/2015 1:48:33 PM	18985
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	5/5/2015 11:58:11 AM	R25979
Surr: BFB	92.9	0	80-120		%REC	1	5/5/2015 11:58:11 AM	R25979
EPA METHOD 300.0: ANIONS							Analyst: LGT	
Fluoride	ND	0.029	0.10		mg/L	1	4/30/2015 5:24:21 PM	R25896
Chloride	ND	0.13	0.50		mg/L	1	4/30/2015 5:24:21 PM	R25896
Sulfate	ND	0.11	0.50		mg/L	1	4/30/2015 5:24:21 PM	R25896
EPA METHOD 200.7: DISSOLVED METALS							Analyst: JLF	
Barium	ND	0.00095	0.0020		mg/L	1	4/30/2015 2:11:15 PM	R25881
Beryllium	0.00067	0.00031	0.0020	J	mg/L	1	4/30/2015 2:11:15 PM	R25881
Cadmium	ND	0.00097	0.0020		mg/L	1	4/30/2015 2:11:15 PM	R25881
Chromium	0.0030	0.0018	0.0060	J	mg/L	1	4/30/2015 2:11:15 PM	R25881
Cobalt	ND	0.0013	0.0060		mg/L	1	4/30/2015 2:11:15 PM	R25881
Iron	ND	0.0073	0.020		mg/L	1	4/30/2015 2:11:15 PM	R25881
Manganese	ND	0.00027	0.0020		mg/L	1	4/30/2015 2:11:15 PM	R25881
Nickel	ND	0.0021	0.010		mg/L	1	4/30/2015 2:11:15 PM	R25881
Silver	ND	0.0012	0.0050		mg/L	1	4/30/2015 2:11:15 PM	R25881
Vanadium	ND	0.0015	0.050		mg/L	1	4/30/2015 2:11:15 PM	R25881
Zinc	0.016	0.0028	0.010		mg/L	1	4/30/2015 2:11:15 PM	R25881
EPA METHOD 200.7: METALS							Analyst: JLF	
Barium	ND	0.00095	0.0020		mg/L	1	5/4/2015 2:06:05 PM	R25943
Beryllium	ND	0.00031	0.0020		mg/L	1	5/4/2015 2:06:05 PM	R25943
Cadmium	ND	0.00097	0.0020		mg/L	1	5/4/2015 2:06:05 PM	R25943
Chromium	ND	0.0022	0.0060		mg/L	1	5/4/2015 2:06:05 PM	R25943
Cobalt	ND	0.0013	0.0060		mg/L	1	5/4/2015 2:06:05 PM	R25943
Iron	ND	0.0073	0.020		mg/L	1	5/4/2015 2:06:05 PM	R25943
Manganese	ND	0.0015	0.0020		mg/L	1	5/4/2015 2:06:05 PM	R25943
Nickel	ND	0.0023	0.010		mg/L	1	5/4/2015 2:06:05 PM	R25943
Silver	ND	0.0021	0.0050		mg/L	1	5/4/2015 2:06:05 PM	R25943
Vanadium	ND	0.0015	0.050		mg/L	1	5/4/2015 2:06:05 PM	R25943
Zinc	ND	0.0036	0.010		mg/L	1	5/4/2015 2:06:05 PM	R25943
EPA 200.8: DISSOLVED METALS							Analyst: DBD	
Antimony	0.00038	0.00014	0.0010	J	mg/L	1	5/11/2015 2:12:40 PM	R26119
Arsenic	ND	0.000065	0.0010		mg/L	1	5/11/2015 2:12:40 PM	R26119

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504C86

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB01

Project: SWMU 10

Collection Date: 4/28/2015 4:50:00 PM

Lab ID: 1504C86-001

Matrix: AQUEOUS

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: DBD	
Lead	ND	0.000026	0.0010		mg/L	1	5/11/2015 2:12:40 PM	R26119
Selenium	ND	0.00019	0.0010		mg/L	1	5/11/2015 2:12:40 PM	R26119
EPA 200.8: METALS							Analyst: DBD	
Antimony	0.00051	0.00022	0.0010	J	mg/L	1	5/11/2015 12:57:22 PM	R26119
Arsenic	ND	0.00044	0.0010		mg/L	1	5/11/2015 12:57:22 PM	R26119
Lead	ND	0.000069	0.00050		mg/L	1	5/11/2015 12:57:22 PM	R26119
Selenium	ND	0.00019	0.0010		mg/L	1	5/11/2015 12:57:22 PM	R26119
EPA METHOD 245.1: MERCURY							Analyst: MED	
Mercury	ND	0.000059	0.00020		mg/L	1	5/5/2015 2:09:31 PM	19047
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	1.9	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Acenaphthylene	ND	1.9	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Aniline	ND	1.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Anthracene	ND	1.6	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Azobenzene	ND	2.0	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Benzoic acid	ND	1.0	20		µg/L	1	5/5/2015 8:36:16 PM	18996
Benzyl alcohol	ND	1.2	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/5/2015 8:36:16 PM	18996
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Carbazole	ND	1.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/5/2015 8:36:16 PM	18996
4-Chloroaniline	ND	1.9	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2-Chlorophenol	ND	1.2	10		µg/L	1	5/5/2015 8:36:16 PM	18996
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Chrysene	ND	2.2	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/5/2015 8:36:16 PM	18996

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504C86

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB01

Project: SWMU 10

Collection Date: 4/28/2015 4:50:00 PM

Lab ID: 1504C86-001

Matrix: AQUEOUS

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Dibenzofuran	ND	1.9	10		µg/L	1	5/5/2015 8:36:16 PM	18996
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/5/2015 8:36:16 PM	18996
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/5/2015 8:36:16 PM	18996
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/5/2015 8:36:16 PM	18996
3,3'-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Diethyl phthalate	ND	1.7	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/5/2015 8:36:16 PM	18996
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/5/2015 8:36:16 PM	18996
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/5/2015 8:36:16 PM	18996
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/5/2015 8:36:16 PM	18996
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Fluoranthene	ND	1.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Fluorene	ND	1.7	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Hexachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Hexachloroethane	ND	1.6	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Isophorone	ND	2.0	10		µg/L	1	5/5/2015 8:36:16 PM	18996
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2-Methylphenol	ND	1.2	10		µg/L	1	5/5/2015 8:36:16 PM	18996
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/5/2015 8:36:16 PM	18996
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/5/2015 8:36:16 PM	18996
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Naphthalene	ND	1.8	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2-Nitroaniline	ND	1.8	10		µg/L	1	5/5/2015 8:36:16 PM	18996
3-Nitroaniline	ND	1.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
4-Nitroaniline	ND	1.2	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Nitrobenzene	ND	1.5	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2-Nitrophenol	ND	1.2	10		µg/L	1	5/5/2015 8:36:16 PM	18996
4-Nitrophenol	ND	1.4	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Pentachlorophenol	ND	1.1	20		µg/L	1	5/5/2015 8:36:16 PM	18996
Phenanthrene	ND	2.0	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Phenol	ND	1.1	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Pyrene	ND	2.3	10		µg/L	1	5/5/2015 8:36:16 PM	18996

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504C86

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB01

Project: SWMU 10

Collection Date: 4/28/2015 4:50:00 PM

Lab ID: 1504C86-001

Matrix: AQUEOUS

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Pyridine	ND	1.7	10		µg/L	1	5/5/2015 8:36:16 PM	18996
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/5/2015 8:36:16 PM	18996
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/5/2015 8:36:16 PM	18996
Surr: 2-Fluorophenol	89.9	0	14.9-111		%REC	1	5/5/2015 8:36:16 PM	18996
Surr: Phenol-d5	86.1	0	11.3-108		%REC	1	5/5/2015 8:36:16 PM	18996
Surr: 2,4,6-Tribromophenol	108	0	15.7-154		%REC	1	5/5/2015 8:36:16 PM	18996
Surr: Nitrobenzene-d5	111	0	47.8-106	S	%REC	1	5/5/2015 8:36:16 PM	18996
Surr: 2-Fluorobiphenyl	106	0	21.3-123		%REC	1	5/5/2015 8:36:16 PM	18996
Surr: 4-Terphenyl-d14	93.2	0	14.3-135		%REC	1	5/5/2015 8:36:16 PM	18996
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Benzene	ND	0.065	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Toluene	0.21	0.11	1.0	J	µg/L	1	5/6/2015 2:07:35 PM	R26017
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Naphthalene	ND	0.22	2.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Acetone	2.2	0.94	10	J	µg/L	1	5/6/2015 2:07:35 PM	R26017
Bromobenzene	ND	0.11	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Bromoform	ND	0.16	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Bromomethane	ND	1.2	3.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
2-Butanone	ND	0.36	10		µg/L	1	5/6/2015 2:07:35 PM	R26017
Carbon disulfide	ND	0.67	10		µg/L	1	5/6/2015 2:07:35 PM	R26017
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Chloroethane	ND	0.10	2.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Chloroform	ND	0.21	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Chloromethane	ND	0.17	3.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/6/2015 2:07:35 PM	R26017

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504C86

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB01

Project: SWMU 10

Collection Date: 4/28/2015 4:50:00 PM

Lab ID: 1504C86-001

Matrix: AQUEOUS

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Dibromomethane	ND	0.23	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
2-Hexanone	ND	0.48	10		µg/L	1	5/6/2015 2:07:35 PM	R26017
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/6/2015 2:07:35 PM	R26017
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Styrene	ND	0.11	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/6/2015 2:07:35 PM	R26017
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/6/2015 2:07:35 PM	R26017
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%REC	1	5/6/2015 2:07:35 PM	R26017
Surr: 4-Bromofluorobenzene	98.7	0	70-130		%REC	1	5/6/2015 2:07:35 PM	R26017

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1504C86**

Date Reported: **10/5/2015**

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB01

Project: SWMU 10

Collection Date: 4/28/2015 4:50:00 PM

Lab ID: 1504C86-001

Matrix: AQUEOUS

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Surr: Dibromofluoromethane	97.4	0	70-130		%REC	1	5/6/2015 2:07:35 PM	R26017
Surr: Toluene-d8	98.2	0	70-130		%REC	1	5/6/2015 2:07:35 PM	R26017

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Anatek Labs, Inc.

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Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

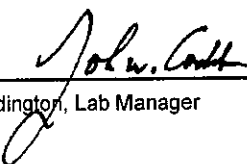
Batch #: 150501022
Project Name: 1504C86

Analytical Results Report

Sample Number	150501022-001	Sampling Date	4/28/2015	Date/Time Received	5/1/2015 11:40 AM
Client Sample ID	1504C86-001H / SWMU 10 EB01			Sampling Time	4:50 PM
Matrix	Water	Sample Location			
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide	ND	mg/L	0.01	5/5/2015	CRW	EPA 335.4	

Authorized Signature


John Coddington, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.
The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

Anatek Labs, Inc.

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 150501022
Project Name: 1504C86

Analytical Results Report Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Cyanide	0.500	mg/L	0.5	100.0	90-110	5/5/2015	5/5/2015

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
150424028-004	Cyanide	ND	0.512	mg/L	0.5	102.4	90-110	5/5/2015	5/5/2015

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Cyanide	0.500	mg/L	0.5	100.0	2.4	0-20	5/5/2015	5/5/2015

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Cyanide	ND	mg/L	0.01	5/5/2015	5/5/2015

AR Acceptable Range
ND Not Detected
PQL Practical Quantitation Limit
RPD Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099



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Tax I.D. 62-0814289
Est. 1970

REPORT OF ANALYSIS

May 11, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 01, 2015
Description :
Sample ID : 1504C86-001I SWMU 10 EB01
Collected By :
Collection Date : 04/28/15 16:50

ESC Sample # : L762537-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	3500Cr C-2011	05/08/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 05/11/15 10:38 Printed: 05/11/15 10:38



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Quality Control Summary SDG: L762537

Hall Environmental Analysis Laboratory

Test: Anions by Method 3500Cr C-2011

Project No:

Matrix: Water - mg/L

Project:

EPA ID: TN00003

Collection Date: 4/28/2015

Analytic Batch: WG787240

Analysis Date: 5/8/2015

Analyst: 183

Instrument ID: IC-13

Sample Numbers: L762537-01

Method Blank Summary

Instrument	Client Sample ID	Lab Sample ID	File Name	Analysis Date	Analysis Time
D-13	Blank WG787240	Blank WG787240	8	5/8/2015	3:45 PM
D-13	LCS WG787240	LCS WG787240	10	5/8/2015	4:04 PM
D-13	LCSD WG787240	LCSD WG787240	11	5/8/2015	4:12 PM
D-13	DUP WG787240	DUP WG787240	15	5/8/2015	5:12 PM
D-13	MSD WG787240	MSD WG787240	24	5/8/2015	6:25 PM
D-13	MS WG787240	MS WG787240	26	5/8/2015	6:55 PM
D-13	1504C86-001I SWMU 10 EB01	L762537-01	42	5/8/2015	9:24 PM
D-13	DUP WG787240	DUP WG787240	46	5/8/2015	9:57 PM



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Quality Control Summary

SDG: L762537

Hall Environmental Analysis Laboratory

Test: Anions by Method 3500Cr C-2011

Project No:

Project:

Collection Date: 4/28/2015

Analysis Date: 5/8/2015

Instrument ID: IC-13

Sample Numbers: L762537-01

Matrix: Water - mg/L

EPA ID: TN00003

Analytic Batch: WG787240

Analyst: 183

Method Blank

Analyte	CAS	RDL	Qualifier
Hexavalent Chromium	18540-29-9	< 0.000500	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Hexavalent Chromium	1	0.002	0.0018	91.5	90 - 110	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Hexavalent Chromium	1	0.002	0.0019	95	90 - 110	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec	Control RPD	% RPD	Control Limits	Qual
Hexavalent Chromium	1	0.002	0.0018	91.5	0.0019	95	90 - 110	3.75	20			



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Quality Control Summary

SDG: L762537

Hall Environmental Analysis Laboratory

Test: Anions by Method 3500Cr C-2011

Project No:

Matrix: Water - mg/L

Project:

EPA ID: TN00003

Collection Date: 4/28/2015

Analytic Batch: WG787240

Analysis Date: 5/8/2015

Analyst: 183

Instrument ID: IC-13

Sample Numbers: L762537-01

Sample Duplicate

L762055-02

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Hexavalent Chromium	1	<0.0005	<0.0005		20	

Sample Duplicate

L762910-04

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Hexavalent Chromium	1	0.0008	0.0007	6.8	20	

Matrix Spike / Matrix Spike Duplicate

L762372-02

nalyte	Dil	Spike Value	Sample MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
Hexavalent Chromium	1	0.05	0.001	0.0509	99.8	0.0508	99.6	90 - 110	0.2	20	



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Quality Control Summary SDG: L762537

Hall Environmental Analysis Laboratory

Test: Anions by Method 3500Cr C-2011

Project No:

Matrix: Water - mg/L

Project:

EPA ID: TN00003

Collection Date: 4/28/2015

Analytic Batch: WG787240

Analysis Date: 5/8/2015

Analyst: 183

Instrument ID: IC-13

Sample Numbers: L762537-01

Continuing Calibration Verification Standard (CCV)

File ID: WG787240IC-13

Date Analyzed: 5/8/2015

Time Analyzed: 3:56 PM

Analyte	True Value	Found	Recovery %	Limits
Hexavalent Chromium	0.050	0.049	98.5	90 - 110

Continuing Calibration Verification Standard (CCV)

File ID: WG787240IC-13

Date Analyzed: 5/8/2015

Time Analyzed: 6:09 PM

Analyte	True Value	Found	Recovery %	Limits
Hexavalent Chromium	0.050	0.049	98.1	90 - 110



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Quality Control Summary SDG: L762537

Hall Environmental Analysis Laboratory

Test: Anions by Method 3500Cr C-2011

Project No:

Matrix: Water - mg/L

Project:

EPA ID: TN00003

Collection Date: 4/28/2015

Analytic Batch: WG787240

Analysis Date: 5/8/2015

Analyst: 183

Instrument ID: IC-13

Sample Numbers: L762537-01

Continuing Calibration Verification Standard (CCV)

File ID: WG787240IC-13

Date Analyzed: 5/8/2015

Time Analyzed: 6:34 PM

Analyte	True Value	Found	Recovery %	Limits
Hexavalent Chromium	0.050	0.050	99.2	90 - 110

Continuing Calibration Verification Standard (CCV)

File ID: WG787240IC-13

Date Analyzed: 5/8/2015

Time Analyzed: 7:05 PM

Analyte	True Value	Found	Recovery %	Limits
Hexavalent Chromium	0.050	0.050	101	90 - 110



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Quality Control Summary SDG: L762537

Hall Environmental Analysis Laboratory

Test: Anions by Method 3500Cr C-2011

Project No:

Matrix: Water - mg/L

Project:

EPA ID: TN00003

Collection Date: 4/28/2015

Analytic Batch: WG787240

Analysis Date: 5/8/2015

Analyst: 183

Instrument ID: IC-13

Sample Numbers: L762537-01

Continuing Calibration Verification Standard (CCV)

File ID: WG787240IC-13

Date Analyzed: 5/8/2015

Time Analyzed: 8:59 PM

Analyte	True Value	Found	Recovery %	Limits
Hexavalent Chromium	0.050	0.051	101	90 - 110

Continuing Calibration Verification Standard (CCV)

File ID: WG787240IC-13

Date Analyzed: 5/8/2015

Time Analyzed: 10:05 PM

Analyte	True Value	Found	Recovery %	Limits
Hexavalent Chromium	0.050	0.051	102	90 - 110

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C86

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Metals					
Client ID:	PBW	Batch ID:	R25881	RunNo:	25881					
Prep Date:		Analysis Date:	4/30/2015	SeqNo:	767038	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	0.0023	0.0050								J
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Metals					
Client ID:	LCSW	Batch ID:	R25881	RunNo:	25881					
Prep Date:		Analysis Date:	4/30/2015	SeqNo:	767039	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.3	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.0	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Chromium	0.49	0.0060	0.5000	0	98.1	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.7	85	115			
Iron	0.51	0.020	0.5000	0	102	85	115			
Manganese	0.47	0.0020	0.5000	0	93.3	85	115			
Nickel	0.48	0.010	0.5000	0	96.8	85	115			
Silver	0.089	0.0050	0.1000	0	89.3	85	115			
Vanadium	0.50	0.050	0.5000	0	99.3	85	115			
Zinc	0.48	0.010	0.5000	0	97.0	85	115			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Metals					
Client ID:	PBW	Batch ID:	R25943	RunNo:	25943					
Prep Date:		Analysis Date:	5/4/2015	SeqNo:	768973	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C86

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID MB	SampType: MBLK			TestCode: EPA Method 200.7: Metals						
Client ID: PBW	Batch ID: R25943			RunNo: 25943						
Prep Date:	Analysis Date: 5/4/2015			SeqNo: 768973		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID LCS	SampType: LCS			TestCode: EPA Method 200.7: Metals						
Client ID: LCSW	Batch ID: R25943			RunNo: 25943						
Prep Date:	Analysis Date: 5/4/2015			SeqNo: 768974		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.3	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.1	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.6	85	115			
Chromium	0.48	0.0060	0.5000	0	96.2	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.4	85	115			
Iron	0.47	0.020	0.5000	0	94.4	85	115			
Manganese	0.47	0.0020	0.5000	0	93.7	85	115			
Nickel	0.47	0.010	0.5000	0	93.6	85	115			
Silver	0.090	0.0050	0.1000	0	90.4	85	115			
Vanadium	0.50	0.050	0.5000	0	99.4	85	115			
Zinc	0.47	0.010	0.5000	0	93.5	85	115			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C86

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R25881	RunNo:	25881					
Prep Date:		Analysis Date:	4/30/2015	SeqNo:	767040	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	0.0015	0.0050								J
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R25881	RunNo:	25881					
Prep Date:		Analysis Date:	4/30/2015	SeqNo:	767041	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	0.49	0.0020	0.5000	0	97.2	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.2	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Chromium	0.48	0.0060	0.5000	0	96.4	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.5	85	115			
Iron	0.51	0.020	0.5000	0	101	85	115			
Manganese	0.47	0.0020	0.5000	0	93.4	85	115			
Nickel	0.48	0.010	0.5000	0	96.0	85	115			
Silver	0.088	0.0050	0.1000	0	87.9	85	115			
Vanadium	0.50	0.050	0.5000	0	99.4	85	115			
Zinc	0.48	0.010	0.5000	0	96.1	85	115			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R25943	RunNo:	25943					
Prep Date:		Analysis Date:	5/4/2015	SeqNo:	768975	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C86

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R25943	RunNo:	25943					
Prep Date:		Analysis Date:	5/4/2015	SeqNo:	768975	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R25943	RunNo:	25943					
Prep Date:		Analysis Date:	5/4/2015	SeqNo:	768976	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.50	0.0020	0.5000	0	99.0	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.3	85	115			
Chromium	0.48	0.0060	0.5000	0	96.1	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.7	85	115			
Iron	0.48	0.020	0.5000	0	95.1	85	115			
Manganese	0.47	0.0020	0.5000	0	93.5	85	115			
Nickel	0.47	0.010	0.5000	0	93.8	85	115			
Silver	0.090	0.0050	0.1000	0	90.4	85	115			
Vanadium	0.50	0.050	0.5000	0	99.6	85	115			
Zinc	0.48	0.010	0.5000	0	96.7	85	115			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C86

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID LCS	SampType: LCS				TestCode: EPA 200.8: Metals					
Client ID: LCSW	Batch ID: R26119				RunNo: 26119					
Prep Date:	Analysis Date: 5/11/2015				SeqNo: 774818		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.0	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	95.3	85	115			

Sample ID LCS	SampType: LCS				TestCode: EPA 200.8: Metals					
Client ID: LCSW	Batch ID: R26119				RunNo: 26119					
Prep Date:	Analysis Date: 5/11/2015				SeqNo: 774819		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.1	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	94.4	85	115			

Sample ID MB	SampType: MBLK				TestCode: EPA 200.8: Metals					
Client ID: PBW	Batch ID: R26119				RunNo: 26119					
Prep Date:	Analysis Date: 5/11/2015				SeqNo: 774821		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID MB	SampType: MBLK				TestCode: EPA 200.8: Metals					
Client ID: PBW	Batch ID: R26119				RunNo: 26119					
Prep Date:	Analysis Date: 5/11/2015				SeqNo: 774822		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C86

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID LCS	SampType: LCS				TestCode: EPA 200.8: Dissolved Metals					
Client ID: LCSW	Batch ID: R26119				RunNo: 26119					
Prep Date:	Analysis Date: 5/11/2015				SeqNo: 774863		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.0	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	95.3	85	115			

Sample ID LCS	SampType: LCS				TestCode: EPA 200.8: Dissolved Metals					
Client ID: LCSW	Batch ID: R26119				RunNo: 26119					
Prep Date:	Analysis Date: 5/11/2015				SeqNo: 774864		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.1	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	94.4	85	115			

Sample ID MB	SampType: MBLK				TestCode: EPA 200.8: Dissolved Metals					
Client ID: PBW	Batch ID: R26119				RunNo: 26119					
Prep Date:	Analysis Date: 5/11/2015				SeqNo: 774865		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID MB	SampType: MBLK				TestCode: EPA 200.8: Dissolved Metals					
Client ID: PBW	Batch ID: R26119				RunNo: 26119					
Prep Date:	Analysis Date: 5/11/2015				SeqNo: 774866		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C86

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19047	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	19047	RunNo:	25969					
Prep Date:	5/5/2015	Analysis Date:	5/5/2015	SeqNo:	769643	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-19047	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	19047	RunNo:	25969					
Prep Date:	5/5/2015	Analysis Date:	5/5/2015	SeqNo:	769644	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	101	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C86

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB		SampType:	MBLK		TestCode:	EPA Method 300.0: Anions			
Client ID:	PBW		Batch ID:	R25896		RunNo:	25896			
Prep Date:			Analysis Date:	4/30/2015		SeqNo:	767580	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID	LCS		SampType:	LCS		TestCode:	EPA Method 300.0: Anions			
Client ID:	LCSW		Batch ID:	R25896		RunNo:	25896			
Prep Date:			Analysis Date:	4/30/2015		SeqNo:	767581	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.48	0.10	0.5000	0	95.3	90	110			
Chloride	4.8	0.50	5.000	0	96.2	90	110			
Sulfate	9.7	0.50	10.00	0	96.8	90	110			

Sample ID	1504C86-001EMS		SampType:	MS		TestCode:	EPA Method 300.0: Anions			
Client ID:	SWMU 10 EB01		Batch ID:	R25896		RunNo:	25896			
Prep Date:			Analysis Date:	4/30/2015		SeqNo:	767603	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	101	66.1	113			
Chloride	4.8	0.50	5.000	0	95.1	81.8	112			
Sulfate	9.6	0.50	10.00	0	95.7	88.3	114			

Sample ID	1504C86-001EMSD		SampType:	MSD		TestCode:	EPA Method 300.0: Anions			
Client ID:	SWMU 10 EB01		Batch ID:	R25896		RunNo:	25896			
Prep Date:			Analysis Date:	4/30/2015		SeqNo:	767604	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.52	0.10	0.5000	0	104	66.1	113	2.46	20	
Chloride	4.8	0.50	5.000	0	96.1	81.8	112	1.00	20	
Sulfate	9.7	0.50	10.00	0	96.6	88.3	114	0.907	20	

Sample ID	MB		SampType:	MBLK		TestCode:	EPA Method 300.0: Anions			
Client ID:	PBW		Batch ID:	R25896		RunNo:	25896			
Prep Date:			Analysis Date:	4/30/2015		SeqNo:	767632	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C86

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS	SampType: LCS			TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID: R25896			RunNo: 25896					
Prep Date:		Analysis Date: 4/30/2015			SeqNo: 767633		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	97.7	90	110			
Chloride	4.7	0.50	5.000	0	94.3	90	110			
Sulfate	9.5	0.50	10.00	0	94.9	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C86

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-18985	SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW	Batch ID: 18985			RunNo: 25902					
Prep Date:	4/30/2015	Analysis Date: 5/1/2015			SeqNo: 767854		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.0		1.000		101	76.5	150			

Sample ID	LCS-18985		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 18985		RunNo: 25902					
Prep Date:	4/30/2015		Analysis Date: 5/1/2015		SeqNo: 767970		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.2	1.0	5.000	0	104	60.1	156			
Surr: DNOP	0.52		0.5000		105	76.5	150			

Sample ID	1504C86-001CMS		SampType: MS			TestCode: EPA Method 8015M/D: Diesel Range				
Client ID:	SWMU 10 EB01		Batch ID: 18985			RunNo: 25902				
Prep Date:	4/30/2015		Analysis Date: 5/1/2015			SeqNo: 767980		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.7	1.0	5.000	0	115	75.9	164			
Surr: DNOP	0.60		0.5000		119	76.5	150			

Sample ID	1504C86-001CMSD			SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	SWMU 10 EB01			Batch ID: 18985	RunNo: 25902					
Prep Date:	4/30/2015			Analysis Date: 5/1/2015	SeqNo: 767994		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.6	1.0	5.000	0	112	75.9	164	2.68	22.1	
Surr: DNOP	0.59		0.5000		117	76.5	150	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C86

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5ML RB		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBW		Batch ID: R25939		RunNo: 25939					
Prep Date:			Analysis Date: 5/4/2015		SeqNo: 768862		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	18		20.00		88.4	80	120			

Sample ID	2.5UG GRO LCS	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID: R25939			RunNo: 25939					
Prep Date:		Analysis Date: 5/4/2015			SeqNo: 768863		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	18		20.00		91.1	80	120			

Sample ID	5ML RB	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range						
Client ID:	PBW	Batch ID: R25979		RunNo: 25979						
Prep Date:		Analysis Date: 5/5/2015		SeqNo: 769934		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	19		20.00		93.8	80	120			

Sample ID	2.5UG GRO LCS	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID: R25979			RunNo: 25979					
Prep Date:		Analysis Date: 5/5/2015			SeqNo: 769935		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.45	0.050	0.5000	0	90.7	80	120			
Surr: BFB	20		20.00		99.1	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C86

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5ml rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R26017			RunNo: 26017					
Prep Date:		Analysis Date: 5/6/2015			SeqNo: 771281		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C86

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5ml rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R26017			RunNo: 26017					
Prep Date:		Analysis Date: 5/6/2015			SeqNo: 771281		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		116	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.0	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	9.4		10.00		94.4	70	130			

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R26017			RunNo: 26017					
Prep Date:		Analysis Date: 5/6/2015			SeqNo: 771283		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	19	1.0	20.00	0	97.1	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C86

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R26017			RunNo: 26017					
Prep Date:		Analysis Date: 5/6/2015			SeqNo: 771283		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	25	1.0	20.00	0	123	75.6	144			
Trichloroethene (TCE)	20	1.0	20.00	0	100	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.0	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.9	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C86

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-18996		SampType: MBLK		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	PBW		Batch ID: 18996		RunNo: 25988					
Prep Date:	5/1/2015		Analysis Date: 5/5/2015		SeqNo: 770336		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C86

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-18996	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	18996	RunNo:	25988					
Prep Date:	5/1/2015	Analysis Date:	5/5/2015	SeqNo:	770336	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	170		200.0		86.6	14.9	111			
Surr: Phenol-d5	170		200.0		85.6	11.3	108			
Surr: 2,4,6-Tribromophenol	170		200.0		83.0	15.7	154			
Surr: Nitrobenzene-d5	86		100.0		86.0	47.8	106			
Surr: 2-Fluorobiphenyl	86		100.0		86.3	21.3	123			
Surr: 4-Terphenyl-d14	76		100.0		75.5	14.3	135			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C86

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-18996		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSW		Batch ID: 18996		RunNo: 25988					
Prep Date:	5/1/2015		Analysis Date: 5/5/2015		SeqNo: 770337		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	78	10	100.0	0	77.9	47.8	99.7			
4-Chloro-3-methylphenol	180	10	200.0	0	88.1	58.1	103			
2-Chlorophenol	150	10	200.0	0	73.7	49.5	96.8			
1,4-Dichlorobenzene	75	10	100.0	0	75.1	40.4	89.4			
2,4-Dinitrotoluene	71	10	100.0	0	71.0	38.6	91.3			
N-Nitrosodi-n-propylamine	81	10	100.0	0	81.3	53.9	95.6			
4-Nitrophenol	160	10	200.0	0	80.1	26.4	108			
Pentachlorophenol	140	20	200.0	0	72.3	36.5	86.6			
Phenol	160	10	200.0	0	81.8	29.3	108			
Pyrene	77	10	100.0	0	77.1	45.7	100			
1,2,4-Trichlorobenzene	77	10	100.0	0	77.0	39.3	94.5			
Surr: 2-Fluorophenol	160		200.0		80.1	14.9	111			
Surr: Phenol-d5	180		200.0		88.0	11.3	108			
Surr: 2,4,6-Tribromophenol	210		200.0		105	15.7	154			
Surr: Nitrobenzene-d5	82		100.0		82.0	47.8	106			
Surr: 2-Fluorobiphenyl	85		100.0		84.9	21.3	123			
Surr: 4-Terphenyl-d14	94		100.0		94.2	14.3	135			

Sample ID	Icsd-18996		SampType: LCSD		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS02		Batch ID: 18996		RunNo: 25988					
Prep Date:	5/1/2015		Analysis Date: 5/5/2015		SeqNo: 770338		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	88	10	100.0	0	87.9	47.8	99.7	12.0	28.2	
4-Chloro-3-methylphenol	210	10	200.0	0	103	58.1	103	15.2	24.4	
2-Chlorophenol	150	10	200.0	0	74.5	49.5	96.8	1.08	28.1	
1,4-Dichlorobenzene	72	10	100.0	0	72.0	40.4	89.4	4.19	31.2	
2,4-Dinitrotoluene	84	10	100.0	0	83.9	38.6	91.3	16.6	44.4	
N-Nitrosodi-n-propylamine	90	10	100.0	0	89.6	53.9	95.6	9.67	24.2	
4-Nitrophenol	190	10	200.0	0	95.2	26.4	108	17.2	36.6	
Pentachlorophenol	170	20	200.0	0	85.2	36.5	86.6	16.3	29.5	
Phenol	170	10	200.0	0	82.7	29.3	108	1.08	30	
Pyrene	89	10	100.0	0	89.0	45.7	100	14.3	31	
1,2,4-Trichlorobenzene	80	10	100.0	0	80.4	39.3	94.5	4.35	24	
Surr: 2-Fluorophenol	160		200.0		78.4	14.9	111	0	0	
Surr: Phenol-d5	180		200.0		88.9	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	220		200.0		112	15.7	154	0	0	
Surr: Nitrobenzene-d5	89		100.0		88.8	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	89		100.0		89.1	21.3	123	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C86

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	lcsd-18996	SampType:	LCSD	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	LCSS02	Batch ID:	18996	RunNo:	25988					
Prep Date:	5/1/2015	Analysis Date:	5/5/2015	SeqNo:	770338	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	97		100.0		96.6	14.3	135	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: **Western Refining Gallup**

Work Order Number: **1504C86**

RcptNo: **1**

Received by/date:

Am 04/29/15

Logged By: **Ashley Gallegos**

4/29/2015 4:00:00 PM

Ag

Completed By: **Ashley Gallegos**

4/30/2015 11:21:25 AM

Ag

Reviewed By:

Ag 04/30/15

Chain of Custody

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

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° 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: *21*

Adjusted? *NO*

Checked by: *Ag*

Special Handling (if applicable)

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

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.5	Good	Yes			

**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

BTEX + MTBE + TMB's (8021)
BTEX + MTBE + TPH (Gas only)
TPH 8015B (GRO / DRO / MRO)
TPH (Method 418.1) Diesel
EDB (Method 504.1)
PAH's (8310 or 8270 SIMS)
PCPA & Metals Cyanide
Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)
8081 Pesticides / 8082 PCB's
8260B (VOA)
8270 (Semi-VOA)
Metals - Total & Dissolve
(SEE ATTACHED SHEET)
GEN CHEM
CR6
Air Bubbles (Y or N)

☒ Standard ☐ Rush

SWM 10

Project Manager:

Sampler: TRACY PAYNE

On Ice: ☒ Yes ☐ No

Sample Temperature: 7.5

HEAL No.

Container Type and #	Preservative Type

1001

40 mL	HCL

FILED
MAR 27 1968
FBI - MEMPHIS

250 ML - 1
NEAT

160 ML PLASTIC - 1
HNO₃

500 ML 1
UNO=

FD-302 (Rev. 1-25-60)

50 mL, (NH₄)₂CO₃

10

Date Time

4/29/5 7:22

Date : Time

2015/5/27

Received by:

Received by: 

Received by:

~~15~~

Time:	Belinaglished by:

0770

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

NAME: _____

This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report. Any sub-contracted data may be sub-contracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

WESTERN REFINING SOUTHWEST, INC.
GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES TOTAL
METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

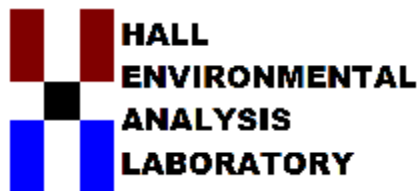
Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0



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

October 05, 2015

Thurman B. Larsen
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0258
FAX (505) 722-0210

RE: SWMU 10

OrderNo.: 1504C87

Dear Thurman B. Larsen:

Hall Environmental Analysis Laboratory received 6 sample(s) on 4/29/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 04, 2015.

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, Inc.

Analytical Report

Lab Order 1504C87

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-1 (2-4')

Project: SWMU 10

Collection Date: 4/28/2015 1:53:00 PM

Lab ID: 1504C87-001

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	93	5.4	9.8		mg/Kg-dr	1	5/1/2015 12:54:24 PM	18983
Motor Oil Range Organics (MRO)	53	49	49		mg/Kg-dr	1	5/1/2015 12:54:24 PM	18983
Surr: DNOP	105	0	57.9-140		%REC	1	5/1/2015 12:54:24 PM	18983
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB	
Gasoline Range Organics (GRO)	ND	1.0	3.5		mg/Kg-dr	1	5/1/2015 11:11:48 AM	R25904
Surr: BFB	90.1	0	80-120		%REC	1	5/1/2015 11:11:48 AM	R25904
PERCENT MOISTURE							Analyst: cadg	
Percent Moisture	19	1.0	1.0		wt%	1	4/30/2015 2:28:00 PM	R25911
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.0066	0.0038	0.043	J	mg/Kg-dr	1	5/6/2015 3:17:02 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.6	3.0		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Arsenic	0.97	0.35	3.0	J	mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Barium	200	0.036	0.12		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Beryllium	1.1	0.0089	0.18		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Chromium	10	0.072	0.36		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Cobalt	5.2	0.045	0.36		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Iron	16000	72	300		mg/Kg-dr	100	5/7/2015 10:48:49 AM	19080
Lead	3.2	0.13	0.30		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Manganese	300	0.070	0.12		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Nickel	9.1	0.15	0.60		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Selenium	ND	1.8	3.0		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Silver	ND	0.036	0.30		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Vanadium	20	0.040	3.0		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
Zinc	17	0.77	3.0		mg/Kg-dr	1	5/7/2015 12:51:48 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Acenaphthylene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Aniline	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Anthracene	ND	0.10	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Azobenzene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Benz(a)anthracene	ND	0.097	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Benzo(a)pyrene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Benzo(b)fluoranthene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Benzo(g,h,i)perylene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Benzo(k)fluoranthene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-1 (2-4')

Project: SWMU 10

Collection Date: 4/28/2015 1:53:00 PM

Lab ID: 1504C87-001

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Benzoic acid	ND	0.070	0.62		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Benzyl alcohol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Bis(2-chloroethoxy)methane	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Bis(2-chloroethyl)ether	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.094	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.14	0.62		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
4-Bromophenyl phenyl ether	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Butyl benzyl phthalate	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Carbazole	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
4-Chloro-3-methylphenol	ND	0.12	0.62		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
4-Chloroaniline	ND	0.11	0.62		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2-Chloronaphthalene	ND	0.13	0.31		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2-Chlorophenol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
4-Chlorophenyl phenyl ether	ND	0.18	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Chrysene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Di-n-butyl phthalate	ND	0.14	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Di-n-octyl phthalate	ND	0.14	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Dibenz(a,h)anthracene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Dibenzofuran	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
1,2-Dichlorobenzene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
1,3-Dichlorobenzene	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
1,4-Dichlorobenzene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
3,3'-Dichlorobenzidine	ND	0.095	0.31		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Diethyl phthalate	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Dimethyl phthalate	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2,4-Dichlorophenol	ND	0.12	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2,4-Dimethylphenol	ND	0.097	0.37		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.067	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2,4-Dinitrophenol	ND	0.051	0.62		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2,4-Dinitrotoluene	ND	0.11	0.62		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2,6-Dinitrotoluene	ND	0.14	0.62		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Fluoranthene	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Fluorene	ND	0.17	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Hexachlorobenzene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Hexachlorobutadiene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Hexachlorocyclopentadiene	ND	0.085	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Hexachloroethane	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Isophorone	ND	0.13	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504C87

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-1 (2-4')

Project: SWMU 10

Collection Date: 4/28/2015 1:53:00 PM

Lab ID: 1504C87-001

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
1-Methylnaphthalene	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2-Methylnaphthalene	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2-Methylphenol	ND	0.12	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
3+4-Methylphenol	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
N-Nitrosodi-n-propylamine	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
N-Nitrosodiphenylamine	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Naphthalene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2-Nitroaniline	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
3-Nitroaniline	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
4-Nitroaniline	ND	0.11	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Nitrobenzene	ND	0.13	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2-Nitrophenol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
4-Nitrophenol	ND	0.11	0.31		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Pentachlorophenol	ND	0.077	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Phenanthrene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Phenol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Pyrene	ND	0.16	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Pyridine	ND	0.10	0.49		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
1,2,4-Trichlorobenzene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2,4,5-Trichlorophenol	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
2,4,6-Trichlorophenol	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 4:00:49 PM	19026
Surr: 2-Fluorophenol	80.2		26.4-129		%REC	1	5/7/2015 4:00:49 PM	19026
Surr: Phenol-d5	80.8		34.8-118		%REC	1	5/7/2015 4:00:49 PM	19026
Surr: 2,4,6-Tribromophenol	86.9		26.8-128		%REC	1	5/7/2015 4:00:49 PM	19026
Surr: Nitrobenzene-d5	77.7		35.8-124		%REC	1	5/7/2015 4:00:49 PM	19026
Surr: 2-Fluorobiphenyl	82.7		24.5-139		%REC	1	5/7/2015 4:00:49 PM	19026
Surr: 4-Terphenyl-d14	80.5		29.4-129		%REC	1	5/7/2015 4:00:49 PM	19026
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	ND	0.0051	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Toluene	ND	0.0041	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Ethylbenzene	ND	0.0032	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Methyl tert-butyl ether (MTBE)	ND	0.0049	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,2,4-Trimethylbenzene	0.0061	0.0017	0.035	J	mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,3,5-Trimethylbenzene	ND	0.0023	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,2-Dichloroethane (EDC)	ND	0.014	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,2-Dibromoethane (EDB)	ND	0.0027	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Naphthalene	ND	0.0082	0.069		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1-Methylnaphthalene	ND	0.021	0.14		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
2-Methylnaphthalene	ND	0.023	0.14		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 1504C87

Date Reported: 10/5/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-1 (2-4')

Project: SWMU 10

Collection Date: 4/28/2015 1:53:00 PM

Lab ID: 1504C87-001

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Acetone	0.043	0.026	0.52	J	mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Bromobenzene	ND	0.0026	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Bromodichloromethane	ND	0.0028	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Bromoform	ND	0.0028	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Bromomethane	ND	0.0067	0.10		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
2-Butanone	ND	0.022	0.35		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Carbon disulfide	ND	0.025	0.35		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Carbon tetrachloride	ND	0.0034	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Chlorobenzene	ND	0.0027	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Chloroethane	ND	0.027	0.069		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Chloroform	ND	0.0036	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Chloromethane	ND	0.0040	0.10		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
2-Chlorotoluene	ND	0.0039	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
4-Chlorotoluene	ND	0.0026	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
cis-1,2-DCE	ND	0.0044	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
cis-1,3-Dichloropropene	ND	0.0024	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,2-Dibromo-3-chloropropane	ND	0.0059	0.069		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Dibromochloromethane	ND	0.0026	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Dibromomethane	ND	0.0036	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,2-Dichlorobenzene	ND	0.0021	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,3-Dichlorobenzene	ND	0.0041	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,4-Dichlorobenzene	ND	0.0043	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Dichlorodifluoromethane	ND	0.0087	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,1-Dichloroethane	ND	0.014	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,1-Dichloroethene	ND	0.0024	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,2-Dichloropropane	ND	0.0019	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,3-Dichloropropane	ND	0.0048	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
2,2-Dichloropropane	ND	0.0050	0.069		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,1-Dichloropropene	ND	0.0051	0.069		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Hexachlorobutadiene	ND	0.0048	0.069		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
2-Hexanone	ND	0.0085	0.35		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Isopropylbenzene	ND	0.0029	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
4-Isopropyltoluene	ND	0.0025	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
4-Methyl-2-pentanone	ND	0.0060	0.35		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Methylene chloride	ND	0.014	0.10		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
n-Butylbenzene	ND	0.0030	0.10		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
n-Propylbenzene	ND	0.0026	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
sec-Butylbenzene	ND	0.0049	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Styrene	ND	0.0063	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504C87

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-1 (2-4')

Project: SWMU 10

Collection Date: 4/28/2015 1:53:00 PM

Lab ID: 1504C87-001

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
tert-Butylbenzene	ND	0.0040	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,1,1,2-Tetrachloroethane	ND	0.0028	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,1,2,2-Tetrachloroethane	ND	0.0042	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Tetrachloroethene (PCE)	ND	0.0030	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
trans-1,2-DCE	ND	0.0022	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
trans-1,3-Dichloropropene	ND	0.0062	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,2,3-Trichlorobenzene	ND	0.0074	0.069		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,2,4-Trichlorobenzene	ND	0.0064	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,1,1-Trichloroethane	ND	0.0052	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,1,2-Trichloroethane	ND	0.0041	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Trichloroethene (TCE)	ND	0.0034	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Trichlorofluoromethane	ND	0.010	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
1,2,3-Trichloropropane	ND	0.0058	0.069		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Vinyl chloride	ND	0.014	0.035		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Xylenes, Total	ND	0.0096	0.069		mg/Kg-dr	1	5/5/2015 4:19:40 PM	R25982
Surr: Dibromofluoromethane	100		70-130		%REC	1	5/5/2015 4:19:40 PM	R25982
Surr: 1,2-Dichloroethane-d4	92.1		70-130		%REC	1	5/5/2015 4:19:40 PM	R25982
Surr: Toluene-d8	92.1		70-130		%REC	1	5/5/2015 4:19:40 PM	R25982
Surr: 4-Bromofluorobenzene	93.6		70-130		%REC	1	5/5/2015 4:19:40 PM	R25982

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
R	RPD outside accepted recovery limits	RL Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504C87

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-1 (4-6')

Project: SWMU 10

Collection Date: 4/28/2015 2:04:00 PM

Lab ID: 1504C87-002

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	ND	5.4	9.8		mg/Kg-dr	1	5/1/2015 10:39:47 AM	18983
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg-dr	1	5/1/2015 10:39:47 AM	18983
Surr: DNOP	104	0	57.9-140		%REC	1	5/1/2015 10:39:47 AM	18983
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB	
Gasoline Range Organics (GRO)	ND	0.99	3.3		mg/Kg-dr	1	5/1/2015 11:40:34 AM	R25904
Surr: BFB	89.9	0	80-120		%REC	1	5/1/2015 11:40:34 AM	R25904
PERCENT MOISTURE							Analyst: cadg	
Percent Moisture	21	1.0	1.0		wt%	1	4/30/2015 2:28:00 PM	R25911
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.0063	0.0036	0.041	J	mg/Kg-dr	1	5/6/2015 3:18:49 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	1.9	1.7	3.2	J	mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Arsenic	1.7	0.37	3.2	J	mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Barium	130	0.038	0.13		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Beryllium	1.1	0.0094	0.19		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Cadmium	ND	0.035	0.13		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Chromium	10	0.077	0.38		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Cobalt	5.4	0.048	0.38		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Iron	17000	77	320		mg/Kg-dr	100	5/7/2015 10:51:53 AM	19080
Lead	3.2	0.14	0.32		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Manganese	290	0.075	0.13		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Nickel	9.6	0.16	0.64		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Selenium	ND	1.9	3.2		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Silver	ND	0.038	0.32		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Vanadium	18	0.042	3.2		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
Zinc	16	0.82	3.2		mg/Kg-dr	1	5/7/2015 12:59:02 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Acenaphthylene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Aniline	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Anthracene	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Azobenzene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Benz(a)anthracene	ND	0.099	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Benzo(a)pyrene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Benzo(b)fluoranthene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Benzo(g,h,i)perylene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Benzo(k)fluoranthene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504C87

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-1 (4-6')

Project: SWMU 10

Collection Date: 4/28/2015 2:04:00 PM

Lab ID: 1504C87-002

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Benzoic acid	ND	0.072	0.63		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Benzyl alcohol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Bis(2-chloroethoxy)methane	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Bis(2-chloroethyl)ether	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.096	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.14	0.63		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
4-Bromophenyl phenyl ether	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Butyl benzyl phthalate	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Carbazole	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
4-Chloro-3-methylphenol	ND	0.13	0.63		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
4-Chloroaniline	ND	0.12	0.63		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2-Chloronaphthalene	ND	0.13	0.32		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2-Chlorophenol	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
4-Chlorophenyl phenyl ether	ND	0.19	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Chrysene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Di-n-butyl phthalate	ND	0.14	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Di-n-octyl phthalate	ND	0.14	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Dibenz(a,h)anthracene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Dibenzofuran	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
1,2-Dichlorobenzene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
1,3-Dichlorobenzene	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
1,4-Dichlorobenzene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
3,3'-Dichlorobenzidine	ND	0.097	0.32		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Diethyl phthalate	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Dimethyl phthalate	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2,4-Dichlorophenol	ND	0.13	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2,4-Dimethylphenol	ND	0.099	0.38		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.068	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2,4-Dinitrophenol	ND	0.052	0.63		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2,4-Dinitrotoluene	ND	0.11	0.63		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2,6-Dinitrotoluene	ND	0.14	0.63		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Fluoranthene	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Fluorene	ND	0.17	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Hexachlorobenzene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Hexachlorobutadiene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Hexachlorocyclopentadiene	ND	0.087	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Hexachloroethane	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Isophorone	ND	0.13	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-1 (4-6')

Project: SWMU 10

Collection Date: 4/28/2015 2:04:00 PM

Lab ID: 1504C87-002

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
1-Methylnaphthalene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2-Methylnaphthalene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2-Methylphenol	ND	0.13	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
3+4-Methylphenol	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
N-Nitrosodi-n-propylamine	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
N-Nitrosodiphenylamine	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Naphthalene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2-Nitroaniline	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
3-Nitroaniline	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
4-Nitroaniline	ND	0.11	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Nitrobenzene	ND	0.13	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2-Nitrophenol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
4-Nitrophenol	ND	0.11	0.32		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Pentachlorophenol	ND	0.079	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Phenanthrene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Phenol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Pyrene	ND	0.16	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Pyridine	ND	0.11	0.50		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
1,2,4-Trichlorobenzene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2,4,5-Trichlorophenol	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
2,4,6-Trichlorophenol	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 5:25:11 PM	19026
Surr: 2-Fluorophenol	68.1		26.4-129		%REC	1	5/7/2015 5:25:11 PM	19026
Surr: Phenol-d5	70.1		34.8-118		%REC	1	5/7/2015 5:25:11 PM	19026
Surr: 2,4,6-Tribromophenol	65.1		26.8-128		%REC	1	5/7/2015 5:25:11 PM	19026
Surr: Nitrobenzene-d5	65.6		35.8-124		%REC	1	5/7/2015 5:25:11 PM	19026
Surr: 2-Fluorobiphenyl	65.1		24.5-139		%REC	1	5/7/2015 5:25:11 PM	19026
Surr: 4-Terphenyl-d14	71.5		29.4-129		%REC	1	5/7/2015 5:25:11 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.00211	0.000387	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Toluene	0.00253	0.000179	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Ethylbenzene	0.0318	0.000289	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Xylenes, Total	0.197	0.00103	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Methyl tert-butyl ether (MTBE)	0.00669	0.000721	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,2,4-Trimethylbenzene	0.000619	0.000449	0.00172	J	mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,3,5-Trimethylbenzene	0.000318	0.000302	0.00172	J	mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000461	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000206	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Naphthalene	0.000877	0.000562	0.00172	J	mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1-Methylnaphthalene	ND	0.000675	0.00344		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-1 (4-6')

Project: SWMU 10

Collection Date: 4/28/2015 2:04:00 PM

Lab ID: 1504C87-002

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
2-Methylnaphthalene	ND	0.000672	0.00344		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Acetone	0.00926	0.00107	0.00860		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Bromobenzene	ND	0.000478	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Bromodichloromethane	ND	0.000232	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Bromoform	ND	0.000445	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Bromomethane	ND	0.00102	0.00258		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
2-Butanone	0.00257	0.000550	0.00860	J	mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Carbon tetrachloride	ND	0.000311	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Chlorobenzene	ND	0.000174	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Chloroethane	ND	0.00172	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Chloroform	ND	0.000354	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Chloromethane	ND	0.000203	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
2-Chlorotoluene	ND	0.000336	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Carbon disulfide	ND	0.000778	0.00860		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
4-Chlorotoluene	ND	0.000331	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
cis-1,2-DCE	ND	0.000455	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
cis-1,3-Dichloropropene	ND	0.00172	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000505	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Dibromochloromethane	ND	0.000193	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Dibromomethane	ND	0.000976	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,2-Dichlorobenzene	ND	0.000382	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,3-Dichlorobenzene	ND	0.000291	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,4-Dichlorobenzene	ND	0.000270	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Dichlorodifluoromethane	ND	0.000702	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,1-Dichloroethane	ND	0.000402	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,1-Dichloroethene	ND	0.000287	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,2-Dichloropropane	ND	0.000367	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,3-Dichloropropane	ND	0.000268	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
2,2-Dichloropropane	ND	0.000299	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,1-Dichloropropene	ND	0.000315	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Hexachlorobutadiene	ND	0.000347	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Isopropylbenzene	ND	0.000399	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
4-Isopropyltoluene	ND	0.000667	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Methylene chloride	0.000619	0.000425	0.00172	J	mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
n-Butylbenzene	ND	0.000706	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
2-Hexanone	ND	0.000358	0.00860		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
n-Propylbenzene	ND	0.000322	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
sec-Butylbenzene	0.000593	0.000434	0.00172	J	mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Styrene	ND	0.000285	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504C87

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-1 (4-6')

Project: SWMU 10

Collection Date: 4/28/2015 2:04:00 PM

Lab ID: 1504C87-002

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
4-Methyl-2-pentanone	ND	0.000726	0.00860		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
tert-Butylbenzene	ND	0.000263	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000280	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,1,2,2-Tetrachloroethane	ND	0.000378	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Tetrachloroethene (PCE)	ND	0.000341	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
trans-1,2-DCE	ND	0.000278	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
trans-1,3-Dichloropropene	ND	0.000225	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,2,3-Trichlorobenzene	ND	0.000629	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,2,4-Trichlorobenzene	ND	0.000644	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,1,1-Trichloroethane	ND	0.000245	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,1,2-Trichloroethane	ND	0.00172	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Trichloroethene (TCE)	ND	0.000342	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Trichlorofluoromethane	ND	0.000347	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
1,2,3-Trichloropropane	ND	0.000604	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Vinyl chloride	ND	0.000196	0.00172		mg/Kg-dr	1	5/6/2015 3:04:38 PM	19032
Surr: 1,2-Dichloroethane-d4	100	0	70-130		%REC	1	5/6/2015 3:04:38 PM	19032
Surr: 4-Bromofluorobenzene	113	0	70-130		%REC	1	5/6/2015 3:04:38 PM	19032
Surr: Dibromofluoromethane	105	0	70-130		%REC	1	5/6/2015 3:04:38 PM	19032
Surr: Toluene-d8	95.7	0	70-130		%REC	1	5/6/2015 3:04:38 PM	19032

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504C87

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-1 (18-20')

Project: SWMU 10

Collection Date: 4/28/2015 2:14:00 PM

Lab ID: 1504C87-003

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	ND	5.5	10		mg/Kg-dr	1	5/1/2015 11:06:06 AM	18983
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	5/1/2015 11:06:06 AM	18983
Surr: DNOP	101	0	57.9-140		%REC	1	5/1/2015 11:06:06 AM	18983
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB	
Gasoline Range Organics (GRO)	ND	1.1	3.6		mg/Kg-dr	1	5/1/2015 12:09:22 PM	R25904
Surr: BFB	89.0	0	80-120		%REC	1	5/1/2015 12:09:22 PM	R25904
PERCENT MOISTURE							Analyst: cadg	
Percent Moisture	15	1.0	1.0		wt%	1	4/30/2015 2:28:00 PM	R25911
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.0036	0.0034	0.039	J	mg/Kg-dr	1	5/6/2015 3:20:37 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	1.5	1.5	2.9	J	mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Arsenic	1.7	0.34	2.9	J	mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Barium	170	0.035	0.12		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Beryllium	1.1	0.0086	0.17		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Chromium	16	0.070	0.35		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Cobalt	7.0	0.044	0.35		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Iron	23000	70	290		mg/Kg-dr	100	5/7/2015 10:53:17 AM	19080
Lead	2.0	0.13	0.29		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Manganese	480	0.14	0.23		mg/Kg-dr	2	5/7/2015 1:03:16 PM	19080
Nickel	16	0.15	0.58		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Vanadium	17	0.039	2.9		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
Zinc	22	0.75	2.9		mg/Kg-dr	1	5/7/2015 1:01:49 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Aniline	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Anthracene	ND	0.099	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Benz(a)anthracene	ND	0.092	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-1 (18-20')

Project: SWMU 10

Collection Date: 4/28/2015 2:14:00 PM

Lab ID: 1504C87-003

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Benzoic acid	ND	0.067	0.59		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Bis(2-chloroethyl)ether	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.089	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2-Chloronaphthalene	ND	0.13	0.29		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Chrysene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Di-n-butyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Di-n-octyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Dibenz(a,h)anthracene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Dibenzofuran	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
3,3'-Dichlorobenzidine	ND	0.090	0.29		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2,4-Dichlorophenol	ND	0.12	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2,4-Dimethylphenol	ND	0.092	0.35		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.064	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2,4-Dinitrotoluene	ND	0.10	0.59		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Fluorene	ND	0.16	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Hexachlorobutadiene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Hexachlorocyclopentadiene	ND	0.081	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Isophorone	ND	0.12	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-1 (18-20')

Project: SWMU 10

Collection Date: 4/28/2015 2:14:00 PM

Lab ID: 1504C87-003

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2-Methylphenol	ND	0.12	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
4-Nitroaniline	ND	0.11	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2-Nitrophenol	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
4-Nitrophenol	ND	0.10	0.29		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Pentachlorophenol	ND	0.073	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Pyridine	ND	0.098	0.47		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2,4,5-Trichlorophenol	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
2,4,6-Trichlorophenol	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 5:53:16 PM	19026
Surr: 2-Fluorophenol	62.8		26.4-129		%REC	1	5/7/2015 5:53:16 PM	19026
Surr: Phenol-d5	62.6		34.8-118		%REC	1	5/7/2015 5:53:16 PM	19026
Surr: 2,4,6-Tribromophenol	58.1		26.8-128		%REC	1	5/7/2015 5:53:16 PM	19026
Surr: Nitrobenzene-d5	60.8		35.8-124		%REC	1	5/7/2015 5:53:16 PM	19026
Surr: 2-Fluorobiphenyl	62.6		24.5-139		%REC	1	5/7/2015 5:53:16 PM	19026
Surr: 4-Terphenyl-d14	62.5		29.4-129		%REC	1	5/7/2015 5:53:16 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.0146	0.000447	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Toluene	0.00836	0.000206	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Ethylbenzene	0.00192	0.000334	0.00199	J	mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Xylenes, Total	0.00647	0.00118	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000832	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,2,4-Trimethylbenzene	0.00162	0.000519	0.00199	J	mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,3,5-Trimethylbenzene	0.000993	0.000348	0.00199	J	mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000532	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000237	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Naphthalene	ND	0.000649	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1-Methylnaphthalene	ND	0.000780	0.00397		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-1 (18-20')

Project: SWMU 10

Collection Date: 4/28/2015 2:14:00 PM

Lab ID: 1504C87-003

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
2-Methylnaphthalene	ND	0.000776	0.00397		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Acetone	0.00324	0.00124	0.00993	J	mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Bromobenzene	ND	0.000552	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Bromodichloromethane	ND	0.000268	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Bromoform	ND	0.000514	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Bromomethane	ND	0.00117	0.00298		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
2-Butanone	0.00156	0.000636	0.00993	J	mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Carbon tetrachloride	ND	0.000359	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Chlorobenzene	ND	0.000201	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Chloroethane	ND	0.00199	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Chloroform	ND	0.000409	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Chloromethane	ND	0.000234	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
2-Chlorotoluene	ND	0.000387	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Carbon disulfide	ND	0.000898	0.00993		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
4-Chlorotoluene	ND	0.000382	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
cis-1,2-DCE	ND	0.000525	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
cis-1,3-Dichloropropene	ND	0.00199	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000583	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Dibromochloromethane	ND	0.000223	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Dibromomethane	ND	0.00113	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,2-Dichlorobenzene	ND	0.000441	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,3-Dichlorobenzene	ND	0.000336	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,4-Dichlorobenzene	ND	0.000312	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Dichlorodifluoromethane	ND	0.000811	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,1-Dichloroethane	ND	0.000464	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,1-Dichloroethene	ND	0.000331	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,2-Dichloropropane	ND	0.000424	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,3-Dichloropropane	ND	0.000309	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
2,2-Dichloropropane	ND	0.000345	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,1-Dichloropropene	ND	0.000364	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Hexachlorobutadiene	ND	0.000401	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Isopropylbenzene	ND	0.000461	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
4-Isopropyltoluene	ND	0.000770	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Methylene chloride	0.000566	0.000491	0.00199	J	mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
n-Butylbenzene	ND	0.000815	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
2-Hexanone	ND	0.000413	0.00993		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
n-Propylbenzene	ND	0.000372	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
sec-Butylbenzene	0.000715	0.000501	0.00199	J	mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Styrene	ND	0.000329	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032

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Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504C87

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-1 (18-20')

Project: SWMU 10

Collection Date: 4/28/2015 2:14:00 PM

Lab ID: 1504C87-003

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
4-Methyl-2-pentanone	ND	0.000838	0.00993		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
tert-Butylbenzene	ND	0.000304	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000323	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,1,2,2-Tetrachloroethane	ND	0.000437	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Tetrachloroethene (PCE)	ND	0.000394	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
trans-1,2-DCE	ND	0.000321	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
trans-1,3-Dichloropropene	ND	0.000260	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,2,3-Trichlorobenzene	ND	0.000726	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,2,4-Trichlorobenzene	ND	0.000744	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,1,1-Trichloroethane	ND	0.000282	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,1,2-Trichloroethane	ND	0.00199	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Trichloroethene (TCE)	ND	0.000394	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Trichlorofluoromethane	ND	0.000401	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
1,2,3-Trichloropropane	ND	0.000697	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Vinyl chloride	ND	0.000227	0.00199		mg/Kg-dr	1	5/6/2015 3:54:54 PM	19032
Surr: 1,2-Dichloroethane-d4	94.3	0	70-130		%REC	1	5/6/2015 3:54:54 PM	19032
Surr: 4-Bromofluorobenzene	99.4	0	70-130		%REC	1	5/6/2015 3:54:54 PM	19032
Surr: Dibromofluoromethane	101	0	70-130		%REC	1	5/6/2015 3:54:54 PM	19032
Surr: Toluene-d8	87.0	0	70-130		%REC	1	5/6/2015 3:54:54 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504C87

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-3 (2-4')

Project: SWMU 10

Collection Date: 4/28/2015 3:46:00 PM

Lab ID: 1504C87-004

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	84	5.5	9.9		mg/Kg-dr	1	5/1/2015 2:20:08 PM	18983
Motor Oil Range Organics (MRO)	90	49	49		mg/Kg-dr	1	5/1/2015 2:20:08 PM	18983
Surr: DNOP	110	0	57.9-140		%REC	1	5/1/2015 2:20:08 PM	18983
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB	
Gasoline Range Organics (GRO)	ND	1.1	3.5		mg/Kg-dr	1	5/1/2015 12:38:08 PM	R25904
Surr: BFB	89.7	0	80-120		%REC	1	5/1/2015 12:38:08 PM	R25904
PERCENT MOISTURE							Analyst: cadg	
Percent Moisture	16	1.0	1.0		wt%	1	4/30/2015 2:28:00 PM	R25911
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.10	0.0036	0.040		mg/Kg-dr	1	5/6/2015 3:22:25 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Arsenic	2.3	0.34	2.9	J	mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Barium	280	0.035	0.12		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Beryllium	0.88	0.0086	0.17		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Chromium	17	0.070	0.35		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Cobalt	5.0	0.044	0.35		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Iron	15000	70	290		mg/Kg-dr	100	5/7/2015 10:54:40 AM	19080
Lead	3.6	0.13	0.29		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Manganese	820	0.34	0.58		mg/Kg-dr	5	5/8/2015 2:25:29 PM	19080
Nickel	8.9	0.15	0.58		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Vanadium	22	0.039	2.9		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
Zinc	25	0.75	2.9		mg/Kg-dr	1	5/7/2015 1:04:42 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.29	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Acenaphthylene	ND	0.24	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Aniline	ND	0.21	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Anthracene	ND	0.20	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Azobenzene	ND	0.27	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Benz(a)anthracene	ND	0.19	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Benzo(a)pyrene	ND	0.27	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Benzo(b)fluoranthene	ND	0.23	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Benzo(g,h,i)perylene	ND	0.27	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Benzo(k)fluoranthene	ND	0.27	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504C87

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-3 (2-4')

Project: SWMU 10

Collection Date: 4/28/2015 3:46:00 PM

Lab ID: 1504C87-004

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Benzoic acid	ND	0.14	1.2		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Benzyl alcohol	ND	0.21	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Bis(2-chloroethoxy)methane	ND	0.23	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Bis(2-chloroethyl)ether	ND	0.23	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.18	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Bis(2-ethylhexyl)phthalate	0.29	0.27	1.2	J	mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
4-Bromophenyl phenyl ether	ND	0.25	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Butyl benzyl phthalate	ND	0.29	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Carbazole	ND	0.22	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
4-Chloro-3-methylphenol	ND	0.24	1.2		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
4-Chloroaniline	ND	0.22	1.2		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2-Chloronaphthalene	ND	0.25	0.59		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2-Chlorophenol	ND	0.22	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
4-Chlorophenyl phenyl ether	ND	0.35	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Chrysene	ND	0.24	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Di-n-butyl phthalate	ND	0.27	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Di-n-octyl phthalate	ND	0.26	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Dibenz(a,h)anthracene	ND	0.26	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Dibenzofuran	ND	0.25	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
1,2-Dichlorobenzene	ND	0.23	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
1,3-Dichlorobenzene	ND	0.21	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
1,4-Dichlorobenzene	ND	0.25	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
3,3'-Dichlorobenzidine	ND	0.18	0.59		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Diethyl phthalate	ND	0.27	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Dimethyl phthalate	ND	0.22	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2,4-Dichlorophenol	ND	0.24	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2,4-Dimethylphenol	ND	0.19	0.71		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.13	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2,4-Dinitrophenol	ND	0.098	1.2		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2,4-Dinitrotoluene	ND	0.21	1.2		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2,6-Dinitrotoluene	ND	0.26	1.2		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Fluoranthene	ND	0.29	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Fluorene	ND	0.32	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Hexachlorobenzene	ND	0.22	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Hexachlorobutadiene	ND	0.23	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Hexachlorocyclopentadiene	ND	0.16	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Hexachloroethane	ND	0.21	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.27	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Isophorone	ND	0.25	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-3 (2-4')

Project: SWMU 10

Collection Date: 4/28/2015 3:46:00 PM

Lab ID: 1504C87-004

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
1-Methylnaphthalene	ND	0.22	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2-Methylnaphthalene	ND	0.22	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2-Methylphenol	ND	0.24	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
3+4-Methylphenol	ND	0.25	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
N-Nitrosodi-n-propylamine	ND	0.25	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
N-Nitrosodiphenylamine	ND	0.21	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Naphthalene	ND	0.23	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2-Nitroaniline	ND	0.27	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
3-Nitroaniline	ND	0.23	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
4-Nitroaniline	ND	0.21	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Nitrobenzene	ND	0.24	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2-Nitrophenol	ND	0.21	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
4-Nitrophenol	ND	0.20	0.59		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Pentachlorophenol	ND	0.15	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Phenanthrene	ND	0.25	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Phenol	ND	0.21	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Pyrene	ND	0.31	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Pyridine	ND	0.20	0.95		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
1,2,4-Trichlorobenzene	ND	0.24	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2,4,5-Trichlorophenol	ND	0.28	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
2,4,6-Trichlorophenol	ND	0.27	0.47		mg/Kg-dr	1	5/7/2015 6:21:19 PM	19026
Surr: 2-Fluorophenol	52.2		26.4-129		%REC	1	5/7/2015 6:21:19 PM	19026
Surr: Phenol-d5	52.1		34.8-118		%REC	1	5/7/2015 6:21:19 PM	19026
Surr: 2,4,6-Tribromophenol	52.8		26.8-128		%REC	1	5/7/2015 6:21:19 PM	19026
Surr: Nitrobenzene-d5	49.1		35.8-124		%REC	1	5/7/2015 6:21:19 PM	19026
Surr: 2-Fluorobiphenyl	52.1		24.5-139		%REC	1	5/7/2015 6:21:19 PM	19026
Surr: 4-Terphenyl-d14	56.7		29.4-129		%REC	1	5/7/2015 6:21:19 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.000872	0.000336	0.00149	J	mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Toluene	0.00116	0.000155	0.00149	J	mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Ethylbenzene	0.000313	0.000251	0.00149	J	mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Xylenes, Total	0.00108	0.000889	0.00149	J	mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000625	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,2,4-Trimethylbenzene	ND	0.000389	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,3,5-Trimethylbenzene	ND	0.000261	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000399	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000178	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Naphthalene	ND	0.000487	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1-Methylnaphthalene	ND	0.000585	0.00298		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-3 (2-4')

Project: SWMU 10

Collection Date: 4/28/2015 3:46:00 PM

Lab ID: 1504C87-004

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
2-Methylnaphthalene	ND	0.000582	0.00298		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Acetone	0.0201	0.000931	0.00745		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Bromobenzene	ND	0.000415	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Bromodichloromethane	ND	0.000201	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Bromoform	ND	0.000386	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Bromomethane	ND	0.000881	0.00224		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
2-Butanone	0.00273	0.000477	0.00745	J	mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Carbon tetrachloride	ND	0.000270	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Chlorobenzene	ND	0.000151	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Chloroethane	ND	0.00149	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Chloroform	ND	0.000307	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Chloromethane	ND	0.000176	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
2-Chlorotoluene	ND	0.000291	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Carbon disulfide	ND	0.000674	0.00745		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
4-Chlorotoluene	ND	0.000287	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
cis-1,2-DCE	ND	0.000394	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
cis-1,3-Dichloropropene	ND	0.00149	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000438	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Dibromochloromethane	ND	0.000167	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Dibromomethane	ND	0.000846	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,2-Dichlorobenzene	ND	0.000331	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,3-Dichlorobenzene	ND	0.000253	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,4-Dichlorobenzene	ND	0.000234	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Dichlorodifluoromethane	ND	0.000608	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,1-Dichloroethane	ND	0.000348	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,1-Dichloroethene	ND	0.000249	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,2-Dichloropropane	ND	0.000318	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,3-Dichloropropane	ND	0.000232	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
2,2-Dichloropropane	ND	0.000259	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,1-Dichloropropene	ND	0.000273	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Hexachlorobutadiene	ND	0.000301	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Isopropylbenzene	ND	0.000346	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
4-Isopropyltoluene	ND	0.000578	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Methylene chloride	0.000387	0.000368	0.00149	J	mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
n-Butylbenzene	ND	0.000612	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
2-Hexanone	0.000656	0.000310	0.00745	J	mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
n-Propylbenzene	ND	0.000279	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
sec-Butylbenzene	ND	0.000376	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Styrene	ND	0.000247	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1504C87**

Date Reported: **10/5/2015**

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-3 (2-4')

Project: SWMU 10

Collection Date: 4/28/2015 3:46:00 PM

Lab ID: 1504C87-004

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
4-Methyl-2-pentanone	ND	0.000629	0.00745		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
tert-Butylbenzene	ND	0.000228	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000242	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,1,2,2-Tetrachloroethane	ND	0.000328	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Tetrachloroethene (PCE)	ND	0.000295	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
trans-1,2-DCE	ND	0.000241	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
trans-1,3-Dichloropropene	ND	0.000195	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,2,3-Trichlorobenzene	ND	0.000545	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,2,4-Trichlorobenzene	ND	0.000558	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,1,1-Trichloroethane	ND	0.000212	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,1,2-Trichloroethane	ND	0.00149	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Trichloroethene (TCE)	ND	0.000296	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Trichlorofluoromethane	ND	0.000301	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
1,2,3-Trichloropropane	ND	0.000523	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Vinyl chloride	ND	0.000170	0.00149		mg/Kg-dr	1	5/6/2015 5:22:51 PM	19032
Surr: 1,2-Dichloroethane-d4	96.2	0	70-130		%REC	1	5/6/2015 5:22:51 PM	19032
Surr: 4-Bromofluorobenzene	106	0	70-130		%REC	1	5/6/2015 5:22:51 PM	19032
Surr: Dibromofluoromethane	99.4	0	70-130		%REC	1	5/6/2015 5:22:51 PM	19032
Surr: Toluene-d8	89.8	0	70-130		%REC	1	5/6/2015 5:22:51 PM	19032

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504C87

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-3 (6-8")

Project: SWMU 10

Collection Date: 4/28/2015 3:57:00 PM

Lab ID: 1504C87-005

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	42	5.5	9.9		mg/Kg-dr	1	5/1/2015 2:47:10 PM	18983
Motor Oil Range Organics (MRO)	69	50	50		mg/Kg-dr	1	5/1/2015 2:47:10 PM	18983
Surr: DNOP	113	0	57.9-140		%REC	1	5/1/2015 2:47:10 PM	18983
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB	
Gasoline Range Organics (GRO)	ND	0.98	3.3		mg/Kg-dr	1	5/1/2015 1:06:50 PM	R25904
Surr: BFB	91.6	0	80-120		%REC	1	5/1/2015 1:06:50 PM	R25904
PERCENT MOISTURE							Analyst: cadg	
Percent Moisture	19	1.0	1.0		wt%	1	4/30/2015 2:28:00 PM	R25911
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.087	0.0037	0.042		mg/Kg-dr	1	5/6/2015 3:24:12 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	3.1	5.9		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Arsenic	2.6	0.69	5.9	J	mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Barium	2900	0.35	1.2		mg/Kg-dr	10	5/8/2015 2:27:08 PM	19080
Beryllium	0.92	0.017	0.35		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Cadmium	ND	0.066	0.24		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Chromium	29	0.14	0.71		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Cobalt	6.4	0.089	0.71		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Iron	13000	71	300		mg/Kg-dr	100	5/7/2015 10:56:03 AM	19080
Lead	5.6	0.26	0.59		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Manganese	1000	0.69	1.2		mg/Kg-dr	10	5/8/2015 2:27:08 PM	19080
Nickel	10	0.30	1.2		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Selenium	ND	3.6	5.9		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Silver	ND	0.070	0.59		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Vanadium	23	0.079	5.9		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
Zinc	35	1.5	5.9		mg/Kg-dr	2	5/7/2015 1:09:15 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Acenaphthylene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Aniline	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Anthracene	ND	0.10	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Azobenzene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Benz(a)anthracene	ND	0.097	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Benzo(a)pyrene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Benzo(b)fluoranthene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Benzo(g,h,i)perylene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Benzo(k)fluoranthene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-3 (6-8")

Project: SWMU 10

Collection Date: 4/28/2015 3:57:00 PM

Lab ID: 1504C87-005

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Benzoic acid	ND	0.070	0.62		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Benzyl alcohol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Bis(2-chloroethoxy)methane	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Bis(2-chloroethyl)ether	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.094	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.14	0.62		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
4-Bromophenyl phenyl ether	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Butyl benzyl phthalate	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Carbazole	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
4-Chloro-3-methylphenol	ND	0.12	0.62		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
4-Chloroaniline	ND	0.11	0.62		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2-Chloronaphthalene	ND	0.13	0.31		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2-Chlorophenol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
4-Chlorophenyl phenyl ether	ND	0.18	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Chrysene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Di-n-butyl phthalate	ND	0.14	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Di-n-octyl phthalate	ND	0.14	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Dibenz(a,h)anthracene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Dibenzofuran	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
1,2-Dichlorobenzene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
1,3-Dichlorobenzene	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
1,4-Dichlorobenzene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
3,3'-Dichlorobenzidine	ND	0.095	0.31		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Diethyl phthalate	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Dimethyl phthalate	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2,4-Dichlorophenol	ND	0.12	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2,4-Dimethylphenol	ND	0.097	0.37		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.067	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2,4-Dinitrophenol	ND	0.051	0.62		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2,4-Dinitrotoluene	ND	0.11	0.62		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2,6-Dinitrotoluene	ND	0.14	0.62		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Fluoranthene	ND	0.15	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Fluorene	ND	0.17	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Hexachlorobenzene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Hexachlorobutadiene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Hexachlorocyclopentadiene	ND	0.085	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Hexachloroethane	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Isophorone	ND	0.13	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504C87

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-3 (6-8")

Project: SWMU 10

Collection Date: 4/28/2015 3:57:00 PM

Lab ID: 1504C87-005

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
1-Methylnaphthalene	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2-Methylnaphthalene	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2-Methylphenol	ND	0.12	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
3+4-Methylphenol	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
N-Nitrosodi-n-propylamine	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
N-Nitrosodiphenylamine	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Naphthalene	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2-Nitroaniline	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
3-Nitroaniline	ND	0.12	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
4-Nitroaniline	ND	0.11	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Nitrobenzene	ND	0.13	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2-Nitrophenol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
4-Nitrophenol	ND	0.11	0.31		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Pentachlorophenol	ND	0.077	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Phenanthrene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Phenol	ND	0.11	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Pyrene	ND	0.16	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Pyridine	ND	0.10	0.49		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
1,2,4-Trichlorobenzene	ND	0.13	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2,4,5-Trichlorophenol	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
2,4,6-Trichlorophenol	ND	0.14	0.25		mg/Kg-dr	1	5/7/2015 6:49:18 PM	19026
Surr: 2-Fluorophenol	68.7		26.4-129		%REC	1	5/7/2015 6:49:18 PM	19026
Surr: Phenol-d5	72.7		34.8-118		%REC	1	5/7/2015 6:49:18 PM	19026
Surr: 2,4,6-Tribromophenol	68.5		26.8-128		%REC	1	5/7/2015 6:49:18 PM	19026
Surr: Nitrobenzene-d5	62.6		35.8-124		%REC	1	5/7/2015 6:49:18 PM	19026
Surr: 2-Fluorobiphenyl	64.8		24.5-139		%REC	1	5/7/2015 6:49:18 PM	19026
Surr: 4-Terphenyl-d14	64.6		29.4-129		%REC	1	5/7/2015 6:49:18 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.00319	0.000368	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Toluene	0.00301	0.000170	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Ethylbenzene	0.000800	0.000275	0.00163	J	mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Xylenes, Total	0.00181	0.000974	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000685	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,2,4-Trimethylbenzene	0.000564	0.000427	0.00163	J	mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,3,5-Trimethylbenzene	0.000351	0.000287	0.00163	J	mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000438	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000195	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Naphthalene	ND	0.000534	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1-Methylnaphthalene	ND	0.000641	0.00327		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-3 (6-8")

Project: SWMU 10

Collection Date: 4/28/2015 3:57:00 PM

Lab ID: 1504C87-005

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
2-Methylnaphthalene	ND	0.000638	0.00327		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Acetone	0.00534	0.00102	0.00817	J	mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Bromobenzene	ND	0.000454	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Bromodichloromethane	ND	0.000221	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Bromoform	ND	0.000423	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Bromomethane	ND	0.000966	0.00245		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
2-Butanone	0.00136	0.000523	0.00817	J	mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Carbon tetrachloride	ND	0.000296	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Chlorobenzene	ND	0.000166	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Chloroethane	ND	0.00163	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Chloroform	ND	0.000336	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Chloromethane	ND	0.000193	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
2-Chlorotoluene	ND	0.000319	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Carbon disulfide	ND	0.000739	0.00817		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
4-Chlorotoluene	ND	0.000315	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
cis-1,2-DCE	ND	0.000432	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
cis-1,3-Dichloropropene	ND	0.00163	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000480	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Dibromochloromethane	ND	0.000183	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Dibromomethane	ND	0.000927	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,2-Dichlorobenzene	ND	0.000362	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,3-Dichlorobenzene	ND	0.000277	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,4-Dichlorobenzene	ND	0.000256	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Dichlorodifluoromethane	ND	0.000667	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,1-Dichloroethane	ND	0.000382	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,1-Dichloroethene	ND	0.000273	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,2-Dichloropropane	ND	0.000349	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,3-Dichloropropane	ND	0.000254	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
2,2-Dichloropropane	ND	0.000284	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,1-Dichloropropene	ND	0.000299	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Hexachlorobutadiene	ND	0.000330	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Isopropylbenzene	ND	0.000379	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
4-Isopropyltoluene	ND	0.000634	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Methylene chloride	0.000547	0.000404	0.00163	J	mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
n-Butylbenzene	ND	0.000671	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
2-Hexanone	0.000588	0.000340	0.00817	J	mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
n-Propylbenzene	ND	0.000306	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
sec-Butylbenzene	0.000555	0.000413	0.00163	J	mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Styrene	ND	0.000271	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504C87

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-3 (6-8')

Project: SWMU 10

Collection Date: 4/28/2015 3:57:00 PM

Lab ID: 1504C87-005

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
4-Methyl-2-pentanone	ND	0.000690	0.00817		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
tert-Butylbenzene	ND	0.000250	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000266	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,1,2,2-Tetrachloroethane	ND	0.000359	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Tetrachloroethene (PCE)	ND	0.000324	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
trans-1,2-DCE	ND	0.000264	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
trans-1,3-Dichloropropene	ND	0.000214	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,2,3-Trichlorobenzene	ND	0.000598	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,2,4-Trichlorobenzene	ND	0.000612	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,1,1-Trichloroethane	ND	0.000232	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,1,2-Trichloroethane	ND	0.00163	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Trichloroethene (TCE)	ND	0.000325	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Trichlorofluoromethane	ND	0.000330	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
1,2,3-Trichloropropane	ND	0.000573	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Vinyl chloride	ND	0.000187	0.00163		mg/Kg-dr	1	5/6/2015 4:53:34 PM	19032
Surr: 1,2-Dichloroethane-d4	99.3	0	70-130		%REC	1	5/6/2015 4:53:34 PM	19032
Surr: 4-Bromofluorobenzene	89.3	0	70-130		%REC	1	5/6/2015 4:53:34 PM	19032
Surr: Dibromofluoromethane	99.0	0	70-130		%REC	1	5/6/2015 4:53:34 PM	19032
Surr: Toluene-d8	92.0	0	70-130		%REC	1	5/6/2015 4:53:34 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504C87

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-3 (18-20')

Project: SWMU 10

Collection Date: 4/28/2015 4:07:00 PM

Lab ID: 1504C87-006

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	ND	5.4	9.9		mg/Kg-dr	1	5/1/2015 12:27:28 PM	18983
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg-dr	1	5/1/2015 12:27:28 PM	18983
Surr: DNOP	107	0	57.9-140		%REC	1	5/1/2015 12:27:28 PM	18983
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB	
Gasoline Range Organics (GRO)	ND	1.1	3.6		mg/Kg-dr	1	5/1/2015 1:35:34 PM	R25904
Surr: BFB	90.2	0	80-120		%REC	1	5/1/2015 1:35:34 PM	R25904
PERCENT MOISTURE							Analyst: cadg	
Percent Moisture	17	1.0	1.0		wt%	1	4/30/2015 2:28:00 PM	R25911
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.0049	0.0032	0.037	J	mg/Kg-dr	1	5/6/2015 3:26:01 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.6	3.0		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Arsenic	2.1	0.35	3.0	J	mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Barium	750	0.18	0.60		mg/Kg-dr	5	5/8/2015 2:28:47 PM	19080
Beryllium	1.1	0.0089	0.18		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Chromium	14	0.072	0.36		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Cobalt	8.8	0.045	0.36		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Iron	22000	72	300		mg/Kg-dr	100	5/7/2015 11:02:21 AM	19080
Lead	1.9	0.13	0.30		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Manganese	1200	0.35	0.60		mg/Kg-dr	5	5/8/2015 2:28:47 PM	19080
Nickel	16	0.15	0.60		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Selenium	ND	1.8	3.0		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Silver	ND	0.036	0.30		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Vanadium	16	0.040	3.0		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
Zinc	27	0.77	3.0		mg/Kg-dr	1	5/7/2015 1:10:45 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.15	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Acenaphthylene	ND	0.12	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Aniline	ND	0.10	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Azobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Benz(a)anthracene	ND	0.095	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Benzo(a)pyrene	ND	0.14	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Benzo(g,h,i)perylene	ND	0.14	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Benzo(k)fluoranthene	ND	0.14	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504C87

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-3 (18-20')

Project: SWMU 10

Collection Date: 4/28/2015 4:07:00 PM

Lab ID: 1504C87-006

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Benzoic acid	ND	0.069	0.60		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Benzyl alcohol	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Bis(2-chloroethoxy)methane	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Bis(2-chloroethyl)ether	ND	0.12	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.092	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.14	0.60		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
4-Bromophenyl phenyl ether	ND	0.13	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Butyl benzyl phthalate	ND	0.15	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Carbazole	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
4-Chloro-3-methylphenol	ND	0.12	0.60		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
4-Chloroaniline	ND	0.11	0.60		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2-Chloronaphthalene	ND	0.13	0.30		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2-Chlorophenol	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
4-Chlorophenyl phenyl ether	ND	0.18	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Chrysene	ND	0.12	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Di-n-butyl phthalate	ND	0.14	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Di-n-octyl phthalate	ND	0.13	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Dibenz(a,h)anthracene	ND	0.13	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Dibenzofuran	ND	0.13	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
1,2-Dichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
1,3-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
1,4-Dichlorobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
3,3'-Dichlorobenzidine	ND	0.093	0.30		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Diethyl phthalate	ND	0.14	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Dimethyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2,4-Dichlorophenol	ND	0.12	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2,4-Dimethylphenol	ND	0.095	0.36		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.065	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2,4-Dinitrophenol	ND	0.050	0.60		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2,4-Dinitrotoluene	ND	0.11	0.60		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2,6-Dinitrotoluene	ND	0.13	0.60		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Fluoranthene	ND	0.15	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Fluorene	ND	0.16	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Hexachlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Hexachlorobutadiene	ND	0.12	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Hexachlorocyclopentadiene	ND	0.083	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Hexachloroethane	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.14	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Isophorone	ND	0.13	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504C87

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-3 (18-20')

Project: SWMU 10

Collection Date: 4/28/2015 4:07:00 PM

Lab ID: 1504C87-006

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
1-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2-Methylphenol	ND	0.12	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
3+4-Methylphenol	ND	0.12	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
N-Nitrosodiphenylamine	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Naphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2-Nitroaniline	ND	0.14	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
3-Nitroaniline	ND	0.12	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
4-Nitroaniline	ND	0.11	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Nitrobenzene	ND	0.12	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2-Nitrophenol	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
4-Nitrophenol	ND	0.10	0.30		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Pentachlorophenol	ND	0.075	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Phenanthrene	ND	0.13	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Phenol	ND	0.11	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Pyrene	ND	0.16	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Pyridine	ND	0.10	0.48		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
1,2,4-Trichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2,4,5-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
2,4,6-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/7/2015 7:17:20 PM	19026
Surr: 2-Fluorophenol	72.6		26.4-129		%REC	1	5/7/2015 7:17:20 PM	19026
Surr: Phenol-d5	71.3		34.8-118		%REC	1	5/7/2015 7:17:20 PM	19026
Surr: 2,4,6-Tribromophenol	69.6		26.8-128		%REC	1	5/7/2015 7:17:20 PM	19026
Surr: Nitrobenzene-d5	65.6		35.8-124		%REC	1	5/7/2015 7:17:20 PM	19026
Surr: 2-Fluorobiphenyl	67.9		24.5-139		%REC	1	5/7/2015 7:17:20 PM	19026
Surr: 4-Terphenyl-d14	68.3		29.4-129		%REC	1	5/7/2015 7:17:20 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.0141	0.000489	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Toluene	0.0100	0.000226	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Ethylbenzene	0.00231	0.000365	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Xylenes, Total	0.00707	0.00129	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000909	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,2,4-Trimethylbenzene	0.00184	0.000567	0.00217	J	mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,3,5-Trimethylbenzene	0.00123	0.000380	0.00217	J	mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000581	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000259	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Naphthalene	ND	0.000709	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1-Methylnaphthalene	ND	0.000852	0.00434		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Western Refining Company**Client Sample ID:** SWMU 10-3 (18-20')**Project:** SWMU 10**Collection Date:** 4/28/2015 4:07:00 PM**Lab ID:** 1504C87-006**Matrix:** SOIL**Received Date:** 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
2-Methylnaphthalene	ND	0.000848	0.00434		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Acetone	0.00158	0.00135	0.0108	J	mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Bromobenzene	ND	0.000603	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Bromodichloromethane	ND	0.000293	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Bromoform	ND	0.000562	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Bromomethane	ND	0.00128	0.00325		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
2-Butanone	0.00151	0.000695	0.0108	J	mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Carbon tetrachloride	ND	0.000393	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Chlorobenzene	ND	0.000220	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Chloroethane	ND	0.00217	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Chloroform	ND	0.000447	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Chloromethane	ND	0.000256	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
2-Chlorotoluene	ND	0.000423	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Carbon disulfide	ND	0.000982	0.0108		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
4-Chlorotoluene	ND	0.000418	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
cis-1,2-DCE	ND	0.000574	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
cis-1,3-Dichloropropene	ND	0.00217	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000637	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Dibromochloromethane	ND	0.000243	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Dibromomethane	ND	0.00123	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,2-Dichlorobenzene	ND	0.000481	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,3-Dichlorobenzene	ND	0.000368	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,4-Dichlorobenzene	ND	0.000341	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Dichlorodifluoromethane	ND	0.000886	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,1-Dichloroethane	ND	0.000507	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,1-Dichloroethene	ND	0.000362	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,2-Dichloropropane	ND	0.000463	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,3-Dichloropropane	ND	0.000338	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
2,2-Dichloropropane	ND	0.000377	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,1-Dichloropropene	ND	0.000397	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Hexachlorobutadiene	ND	0.000438	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Isopropylbenzene	ND	0.000503	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
4-Isopropyltoluene	ND	0.000842	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Methylene chloride	0.000770	0.000536	0.00217	J	mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
n-Butylbenzene	ND	0.000890	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
2-Hexanone	0.000748	0.000451	0.0108	J	mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
n-Propylbenzene	ND	0.000406	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
sec-Butylbenzene	0.000781	0.000548	0.00217	J	mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Styrene	ND	0.000359	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504C87

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-3 (18-20')

Project: SWMU 10

Collection Date: 4/28/2015 4:07:00 PM

Lab ID: 1504C87-006

Matrix: SOIL

Received Date: 4/29/2015 4:00:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
4-Methyl-2-pentanone	ND	0.000916	0.0108		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
tert-Butylbenzene	ND	0.000332	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000353	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,1,2,2-Tetrachloroethane	ND	0.000477	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Tetrachloroethene (PCE)	ND	0.000430	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
trans-1,2-DCE	ND	0.000351	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
trans-1,3-Dichloropropene	ND	0.000284	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,2,3-Trichlorobenzene	ND	0.000794	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,2,4-Trichlorobenzene	ND	0.000813	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,1,1-Trichloroethane	ND	0.000309	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,1,2-Trichloroethane	ND	0.00217	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Trichloroethene (TCE)	ND	0.000431	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Trichlorofluoromethane	ND	0.000438	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
1,2,3-Trichloropropane	ND	0.000762	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Vinyl chloride	ND	0.000248	0.00217		mg/Kg-dr	1	5/6/2015 5:52:11 PM	19032
Surr: 1,2-Dichloroethane-d4	87.0	0	70-130		%REC	1	5/6/2015 5:52:11 PM	19032
Surr: 4-Bromofluorobenzene	98.1	0	70-130		%REC	1	5/6/2015 5:52:11 PM	19032
Surr: Dibromofluoromethane	92.3	0	70-130		%REC	1	5/6/2015 5:52:11 PM	19032
Surr: Toluene-d8	94.3	0	70-130		%REC	1	5/6/2015 5:52:11 PM	19032

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	



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REPORT OF ANALYSIS

May 14, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762539-01

Date Received : May 01, 2015
Description :

Site ID :

Sample ID : 1504C87-001D SWMU 10-1 2-4FT

Project # :

Collected By :
Collection Date : 04/28/15 13:53

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/04/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/03/15	1
ORP	60.		mV	2580 B-2011	05/06/15	1
pH	7.8	0.10	su	9045D	05/05/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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L762539-01 (PH) - 7.8 at 21.2c



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REPORT OF ANALYSIS

May 14, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 01, 2015
Description :
Sample ID : 1504C87-002D SWMU 10-1 4-6FT
Collected By :
Collection Date : 04/28/15 14:04

ESC Sample # : L762539-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/04/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/03/15	1
ORP	40.		mV	2580 B-2011	05/06/15	1
pH	8.3	0.10	su	9045D	05/05/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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L762539-02 (PH) - 8.3 at 20.7c



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REPORT OF ANALYSIS

May 14, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 01, 2015
Description :
Sample ID : 1504C87-003D SWMU 10-1 18-20FT
Collected By :
Collection Date : 04/28/15 14:14

ESC Sample # : L762539-03
Site ID :
Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/04/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/03/15	1
ORP	10.		mV	2580 B-2011	05/06/15	1
pH	8.9	0.10	su	9045D	05/05/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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L762539-03 (PH) - 8.9 at 20.8c



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REPORT OF ANALYSIS

May 14, 2015

Hall Environmental Analysis Laborat
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Albuquerque, NM 87109

Date Received : May 01, 2015
Description :
Sample ID : 1504C87-004D SWMU 10-3 2-4FT
Collected By :
Collection Date : 04/28/15 15:46

ESC Sample # : L762539-04

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/04/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/04/15	1
ORP	60.		mV	2580 B-2011	05/06/15	1
pH	7.6	0.10	su	9045D	05/05/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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L762539-04 (PH) - 7.6 at 21.0c



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May 14, 2015

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Date Received : May 01, 2015
Description :
Sample ID : 1504C87-005D SWMU 10-3 6-8FT
Collected By :
Collection Date : 04/28/15 15:57

ESC Sample # : L762539-05
Site ID :
Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/04/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/04/15	1
ORP	100		mV	2580 B-2011	05/07/15	1
pH	7.6	0.10	su	9045D	05/05/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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L762539-05 (PH) - 7.6 at 21.8c



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REPORT OF ANALYSIS

May 14, 2015

Hall Environmental Analysis Laborat
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Date Received : May 01, 2015
Description :
Sample ID : 1504C87-006D SWMU 10-3 18-20FT
Collected By :
Collection Date : 04/28/15 16:07

ESC Sample # : L762539-06
Site ID :
Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/04/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/04/15	1
ORP	70.		mV	2580 B-2011	05/07/15	1
pH	9.1	0.10	su	9045D	05/05/15	1

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

Note:

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Reported: 05/14/15 09:40 Printed: 05/14/15 09:40
L762539-06 (PH) - 9.1 at 21.5c



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Hall Environmental Analysis Laboratory

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Albuquerque, NM 87109

Quality Assurance Report
Level II

L762539

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May 14, 2015

Analyte	Result	Laboratory Blank Units % Rec	Limit	Batch	Date Analyzed
Chromium, Hexavalent	< 2	mg/kg		WG786207	05/03/15 07:48
Chromium, Hexavalent	< 2	mg/kg		WG786350	05/04/15 11:50
Cyanide	< .25	mg/kg		WG786337	05/04/15 15:52

Analyte	Units	Result	Duplicate Duplicate	RPD	Limit	Ref Samp	Batch
Chromium, Hexavalent	mg/kg	0.0	0.0	0.0	20	L762539-03	WG786207
Chromium, Hexavalent	mg/kg	110.	110.	0.0	20	L762612-07	WG786350
Cyanide	mg/kg	0.0	0.0	0.0	20	L762539-02	WG786337
Cyanide	mg/kg	0.0	0.0	0.0	20	L762653-05	WG786337
pH	su	7.70	7.70	0.389	1	L762509-58	WG786356
pH	su	8.20	8.20	0.367	1	L762612-03	WG786356
ORP	mV	100.	100.	0.0	20	L762171-02	WG786855
ORP	mV	60.0	60.0	0.0	20	L762539-04	WG786855
ORP	mV	100.	100.	0.0	20	L762539-05	WG787164
ORP	mV	150.	150.	0.0	20	L762970-01	WG787164

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Chromium, Hexavalent	mg/kg	59.8	67.0	112.	80-120	WG786207
Chromium, Hexavalent	mg/kg	59.8	57.4	96.0	80-120	WG786350
Cyanide	mg/kg	101	108.	107.	50-150	WG786337
pH	su	7.84	7.79	99.4	98.3-101.7	WG786356
ORP	mV	100	108.	108.	90-110	WG786855
ORP	mV	100	105.	105.	90-110	WG787164

Analyte	Units	Laboratory Control Sample Duplicate Result Ref %Rec	Limit	RPD	Limit	Batch
Chromium, Hexavalent	mg/kg	67.0 67.0 112.	80-120	0.0	20	WG786207
Chromium, Hexavalent	mg/kg	57.2 57.4 96.0	80-120	0.349	20	WG786350

* Performance of this Analyte is outside of established criteria.

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



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Quality Assurance Report
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May 14, 2015

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Cyanide	mg/kg	108.	108.	107.	50-150	0.0	20	WG786337
pH	su	7.79	7.79	99.0	98.3-101.7	0.0	20	WG786356
ORP	mV	108.	108.	108.	90-110	0.0	20	WG786855
ORP	mV	105.	105.	105.	90-110	0.0	20	WG787164

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
Chromium, Hexavalent	mg/kg	21.8	0.0	20	110.	75-125	L762539-03	WG786207
Chromium, Hexavalent	mg/kg	155.	110.	20	110.	75-125	L762612-07	WG786350
Cyanide	mg/kg	3.07	0.0	3.33	92.0	80-120	L762539-06	WG786337

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
Chromium, Hexavalent	mg/kg	22.1	21.8	110.	75-125	1.37	20	L762539-03	WG786207
Chromium, Hexavalent	mg/kg	155.	155.	112.	75-125	0.0	20	L762612-07	WG786350
Cyanide	mg/kg	3.20	3.07	96.1	80-120	4.15	20	L762539-06	WG786337

Batch number / Run number / Sample number cross reference

WG786207: R3034617: L762539-01 02 03
WG786350: R3034796: L762539-04 05 06
WG786337: R3034851: L762539-01 02 03 04 05 06
WG786356: R3035082: L762539-01 02 03 04 05 06
WG786855: R3035486: L762539-01 02 03 04
WG787164: R3035850: L762539-05 06

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

* Performance of this Analyte is outside of established criteria.

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C87

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-18983	SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID: 18983			RunNo: 25903					
Prep Date:	4/30/2015	Analysis Date: 5/1/2015			SeqNo: 767810		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	13		10.00		131	57.9	140			

Sample ID	LCS-18983		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 18983		RunNo: 25903					
Prep Date:	4/30/2015		Analysis Date: 5/1/2015		SeqNo: 767811		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	62	10	50.00	0	124	67.8	130			
Surr: DNOP	6.2		5.000		125	57.9	140			

Sample ID	1504C87-001CMS	SampType: MS			TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	SWMU 10-1 (2-4')	Batch ID: 18983			RunNo: 25903					
Prep Date:	4/30/2015	Analysis Date: 5/1/2015			SeqNo: 767969		Units: mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	120	9.7	48.69	92.77	60.1	42.3	146			
Surr: DNOP	5.2		4.869		107	57.9	140			

Sample ID	1504C87-001CMSD		SampType: MSD		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	SWMU 10-1 (2-4')		Batch ID: 18983		RunNo: 25903					
Prep Date:	4/30/2015		Analysis Date: 5/1/2015		SeqNo: 767979		Units: mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	130	9.7	48.59	92.77	73.6	42.3	146	5.17	28.9	
Surr: DNOP	5.2		4.859		107	57.9	140	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C87

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID 5ML RB	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: R25904		RunNo: 25904							
Prep Date:	Analysis Date: 5/1/2015		SeqNo: 768086		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		90.3	80	120			

Sample ID 2.5UG GRO LCS	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: R25904		RunNo: 25904							
Prep Date:	Analysis Date: 5/1/2015		SeqNo: 768087		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	101	64	130			
Surr: BFB	980		1000		98.2	80	120			

Sample ID 1504C87-001BMS	SampType: MS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: SWMU 10-1 (2-4')	Batch ID: R25904		RunNo: 25904							
Prep Date:	Analysis Date: 5/1/2015		SeqNo: 768089		Units: mg/Kg-dry					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	17	3.5	17.25	0	99.3	47.9	144			
Surr: BFB	680		690.0		98.5	80	120			

Sample ID 1504C87-001BMSD	SampType: MSD		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: SWMU 10-1 (2-4')	Batch ID: R25904		RunNo: 25904							
Prep Date:	Analysis Date: 5/1/2015		SeqNo: 768090		Units: mg/Kg-dry					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	17	3.5	17.25	0	97.7	47.9	144	1.62	29.9	
Surr: BFB	680		690.0		99.2	80	120	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C87

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5mL rb	SampType: MBLK			TestCode: EPA Method 8260B: Volatiles					
Client ID:	PBS	Batch ID: R25982			RunNo: 25982					
Prep Date:		Analysis Date: 5/5/2015			SeqNo: 770974		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0083	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C87

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5mL rb	SampType: MBLK			TestCode: EPA Method 8260B: Volatiles					
Client ID:	PBS	Batch ID: R25982			RunNo: 25982					
Prep Date:		Analysis Date: 5/5/2015			SeqNo: 770974		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.49		0.5000		98.1	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		89.0	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		100	70	130			

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: Volatiles					
Client ID:	LCSS	Batch ID: R25982			RunNo: 25982					
Prep Date:		Analysis Date: 5/5/2015			SeqNo: 770975		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	101	70	130			
Toluene	1.1	0.050	1.000	0	105	70	130			
Chlorobenzene	1.0	0.050	1.000	0	102	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C87

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	100ng lcs		SampType: LCS			TestCode: EPA Method 8260B: Volatiles				
Client ID:	LCSS		Batch ID: R25982			RunNo: 25982				
Prep Date:			Analysis Date: 5/5/2015			SeqNo: 770975		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.2	0.050	1.000	0	116	60.6	134			
Trichloroethene (TCE)	0.92	0.050	1.000	0	92.4	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		99.5	70	130			
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		91.1	70	130			
Surr: Toluene-d8	0.51		0.5000		103	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.2	70	130			

Sample ID	1504c87-001a ms		SampType: MS			TestCode: EPA Method 8260B: Volatiles				
Client ID:	SWMU 10-1 (2-4')		Batch ID: R25982			RunNo: 25982				
Prep Date:			Analysis Date: 5/5/2015			SeqNo: 770977		Units: mg/Kg-dry		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.71	0.035	0.6900	0	103	57.8	132			
Toluene	0.65	0.035	0.6900	0	93.6	54.8	139			
Chlorobenzene	0.72	0.035	0.6900	0	104	63.5	134			
1,1-Dichloroethene	0.89	0.035	0.6900	0	128	26.4	145			
Trichloroethene (TCE)	0.66	0.035	0.6900	0	96.3	54.9	125			
Surr: Dibromofluoromethane	0.36		0.3450		104	70	130			
Surr: 1,2-Dichloroethane-d4	0.31		0.3450		90.8	70	130			
Surr: Toluene-d8	0.31		0.3450		90.6	70	130			
Surr: 4-Bromofluorobenzene	0.31		0.3450		89.6	70	130			

Sample ID	1504c87-001a msd		SampType: MSD			TestCode: EPA Method 8260B: Volatiles				
Client ID:	SWMU 10-1 (2-4')		Batch ID: R25982			RunNo: 25982				
Prep Date:			Analysis Date: 5/5/2015			SeqNo: 770978		Units: mg/Kg-dry		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.69	0.035	0.6900	0	100	57.8	132	2.81	20	
Toluene	0.65	0.035	0.6900	0	93.6	54.8	139	0.0192	20	
Chlorobenzene	0.68	0.035	0.6900	0	98.0	63.5	134	6.11	20	
1,1-Dichloroethene	0.81	0.035	0.6900	0	117	26.4	145	9.25	20	
Trichloroethene (TCE)	0.60	0.035	0.6900	0	87.6	54.9	125	9.54	20	
Surr: Dibromofluoromethane	0.35		0.3450		102	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	0.31		0.3450		90.4	70	130	0	0	
Surr: Toluene-d8	0.32		0.3450		91.9	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.32		0.3450		92.6	70	130	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C87

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-19032		SampType: LCS		TestCode: Method 8260B/5035LOW: VOLATILES					
Client ID:	LCSS		Batch ID: 19032		RunNo: 26013					
Prep Date:	5/4/2015		Analysis Date: 5/6/2015		SeqNo: 771128		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0108	0.00200	0.01000	0	108	70	130			
Toluene	0.00992	0.00200	0.01000	0	99.2	70	130			
Chlorobenzene	0.00872	0.00200	0.01000	0	87.2	70	130			
1,1-Dichloroethene	0.0112	0.00200	0.01000	0	112	70	130			
Trichloroethene (TCE)	0.0105	0.00200	0.01000	0	105	61.6	131			
Surr: 1,2-Dichloroethane-d4	0.0266		0.02500		106	70	130			
Surr: 4-Bromofluorobenzene	0.0221		0.02500		88.5	70	130			
Surr: Dibromofluoromethane	0.0266		0.02500		107	70	130			
Surr: Toluene-d8	0.0248		0.02500		99.4	70	130			

Sample ID	MB-19032		SampType: MBLK		TestCode: Method 8260B/5035LOW: VOLATILES					
Client ID:	PBS		Batch ID: 19032		RunNo: 26013					
Prep Date:	5/4/2015		Analysis Date: 5/6/2015		SeqNo: 771129		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	0.000210	0.00200								J
Ethylbenzene	ND	0.00200								
Xylenes, Total	ND	0.00200								
Methyl tert-butyl ether (MTBE)	ND	0.00200								
1,2,4-Trimethylbenzene	ND	0.00200								
1,3,5-Trimethylbenzene	ND	0.00200								
1,2-Dichloroethane (EDC)	ND	0.00200								
1,2-Dibromoethane (EDB)	ND	0.00200								
Naphthalene	ND	0.00200								
1-Methylnaphthalene	ND	0.00400								
2-Methylnaphthalene	ND	0.00400								
Acetone	ND	0.0100								
Bromobenzene	ND	0.00200								
Bromodichloromethane	ND	0.00200								
Bromoform	ND	0.00200								
Bromomethane	ND	0.00300								
2-Butanone	0.000830	0.0100								J
Carbon tetrachloride	ND	0.00200								
Chlorobenzene	ND	0.00200								
Chloroethane	ND	0.00200								
Chloroform	ND	0.00200								
Chloromethane	ND	0.00200								
2-Chlorotoluene	ND	0.00200								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C87

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19032		SampType: MBLK		TestCode: Method 8260B/5035LOW: VOLATILES					
Client ID:	PBS		Batch ID: 19032		RunNo: 26013					
Prep Date:	5/4/2015		Analysis Date: 5/6/2015		SeqNo: 771129		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Carbon disulfide	ND	0.0100								
4-Chlorotoluene	ND	0.00200								
cis-1,2-DCE	ND	0.00200								
cis-1,3-Dichloropropene	ND	0.00200								
1,2-Dibromo-3-chloropropane	ND	0.00200								
Dibromochloromethane	ND	0.00200								
Dibromomethane	ND	0.00200								
1,2-Dichlorobenzene	ND	0.00200								
1,3-Dichlorobenzene	ND	0.00200								
1,4-Dichlorobenzene	ND	0.00200								
Dichlorodifluoromethane	ND	0.00200								
1,1-Dichloroethane	ND	0.00200								
1,1-Dichloroethene	ND	0.00200								
1,2-Dichloropropane	ND	0.00200								
1,3-Dichloropropane	ND	0.00200								
2,2-Dichloropropane	ND	0.00200								
1,1-Dichloropropene	ND	0.00200								
Hexachlorobutadiene	ND	0.00200								
Isopropylbenzene	ND	0.00200								
4-Isopropyltoluene	ND	0.00200								
Methylene chloride	ND	0.00200								
n-Butylbenzene	ND	0.00200								
2-Hexanone	ND	0.0100								
n-Propylbenzene	ND	0.00200								
sec-Butylbenzene	ND	0.00200								
Styrene	ND	0.00200								
4-Methyl-2-pentanone	ND	0.0100								
tert-Butylbenzene	ND	0.00200								
1,1,1,2-Tetrachloroethane	ND	0.00200								
1,1,2,2-Tetrachloroethane	ND	0.00200								
Tetrachloroethene (PCE)	ND	0.00200								
trans-1,2-DCE	ND	0.00200								
trans-1,3-Dichloropropene	ND	0.00200								
1,2,3-Trichlorobenzene	ND	0.00200								
1,2,4-Trichlorobenzene	ND	0.00200								
1,1,1-Trichloroethane	ND	0.00200								
1,1,2-Trichloroethane	ND	0.00200								
Trichloroethene (TCE)	ND	0.00200								
Trichlorofluoromethane	ND	0.00200								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C87

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19032		SampType:	MBLK		TestCode:	Method 8260B/5035LOW: VOLATILES			
Client ID:	PBS		Batch ID:	19032		RunNo:	26013			
Prep Date:	5/4/2015		Analysis Date:	5/6/2015		SeqNo:	771129		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2,3-Trichloropropane	ND	0.00200								
Vinyl chloride	ND	0.00200								
Surr: 1,2-Dichloroethane-d4	0.0275		0.02500		110	70	130			
Surr: 4-Bromofluorobenzene	0.0232		0.02500		93.0	70	130			
Surr: Dibromofluoromethane	0.0276		0.02500		110	70	130			
Surr: Toluene-d8	0.0239		0.02500		95.4	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C87

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19026	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBS	Batch ID:	19026	RunNo:	26053					
Prep Date:	5/4/2015	Analysis Date:	5/7/2015	SeqNo:	772520	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3'-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C87

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19026	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBS	Batch ID:	19026	RunNo:	26053					
Prep Date:	5/4/2015	Analysis Date:	5/7/2015	SeqNo:	772520	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.6		3.330		79.4	26.4	129			
Surr: Phenol-d5	2.7		3.330		80.7	34.8	118			
Surr: 2,4,6-Tribromophenol	2.5		3.330		75.6	26.8	128			
Surr: Nitrobenzene-d5	1.3		1.670		76.1	35.8	124			
Surr: 2-Fluorobiphenyl	1.4		1.670		81.2	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		88.4	29.4	129			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C87

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-19026		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS		Batch ID: 19026		RunNo: 26053					
Prep Date:	5/4/2015		Analysis Date: 5/7/2015		SeqNo: 772521		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.5	0.20	1.670	0	88.6	45.8	114			
4-Chloro-3-methylphenol	2.9	0.50	3.330	0	86.8	52.3	122			
2-Chlorophenol	2.6	0.20	3.330	0	77.2	49.9	115			
1,4-Dichlorobenzene	1.4	0.20	1.670	0	84.4	43.7	107			
2,4-Dinitrotoluene	1.3	0.50	1.670	0	77.6	36	106			
N-Nitrosodi-n-propylamine	1.4	0.20	1.670	0	81.3	39.5	110			
4-Nitrophenol	3.0	0.25	3.330	0	90.2	45.1	121			
Pentachlorophenol	2.5	0.40	3.330	0	73.7	23.7	111			
Phenol	2.9	0.20	3.330	0	86.4	52.7	119			
Pyrene	1.3	0.20	1.670	0	76.9	50.4	116			
1,2,4-Trichlorobenzene	1.6	0.20	1.670	0	98.3	40.1	114			
Surr: 2-Fluorophenol	2.6		3.330		78.7	26.4	129			
Surr: Phenol-d5	2.7		3.330		81.5	34.8	118			
Surr: 2,4,6-Tribromophenol	3.0		3.330		91.3	26.8	128			
Surr: Nitrobenzene-d5	1.4		1.670		83.7	35.8	124			
Surr: 2-Fluorobiphenyl	1.5		1.670		90.8	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		87.3	29.4	129			

Sample ID	1504C87-001Cms	SampType: MS			TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	SWMU 10-1 (2-4')	Batch ID: 19026			RunNo: 26053					
Prep Date:	5/4/2015	Analysis Date: 5/7/2015			SeqNo: 772523		Units: mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.5	0.25	2.061	0	72.9	36.3	121			
4-Chloro-3-methylphenol	3.4	0.62	4.110	0	81.7	48.2	119			
2-Chlorophenol	2.8	0.25	4.110	0	68.4	37.2	114			
1,4-Dichlorobenzene	1.3	0.25	2.061	0	65.5	28.8	106			
2,4-Dinitrotoluene	1.4	0.62	2.061	0	66.5	34.6	111			
N-Nitrosodi-n-propylamine	1.7	0.25	2.061	0	80.6	32.7	117			
4-Nitrophenol	3.2	0.31	4.110	0	77.1	30.1	134			
Pentachlorophenol	3.1	0.49	4.110	0.1602	70.7	24	120			
Phenol	3.3	0.25	4.110	0	79.2	38.3	118			
Pyrene	1.6	0.25	2.061	0	79.6	38.3	134			
1,2,4-Trichlorobenzene	1.6	0.25	2.061	0	79.0	31.8	110			
Surr: 2-Fluorophenol	3.2		4.110		77.9	26.4	129			
Surr: Phenol-d5	3.3		4.110		79.4	34.8	118			
Surr: 2,4,6-Tribromophenol	3.9		4.110		95.3	26.8	128			
Surr: Nitrobenzene-d5	1.5		2.061		75.2	35.8	124			
Surr: 2-Fluorobiphenyl	1.6		2.061		75.6	24.5	139			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C87

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	1504C87-001Cms	SampType:	MS	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	SWMU 10-1 (2-4')	Batch ID:	19026	RunNo:	26053					
Prep Date:	5/4/2015	Analysis Date:	5/7/2015	SeqNo:	772523	Units:	mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	1.9		2.061		94.6	29.4	129			

Sample ID	1504C87-001Cmsd	SampType:	MSD	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	SWMU 10-1 (2-4')	Batch ID:	19026	RunNo:	26053					
Prep Date:	5/4/2015	Analysis Date:	5/7/2015	SeqNo:	772524	Units:	mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.4	0.25	2.067	0	69.4	36.3	121	4.64	25.4	
4-Chloro-3-methylphenol	3.3	0.62	4.122	0	80.2	48.2	119	1.57	30.4	
2-Chlorophenol	2.6	0.25	4.122	0	63.2	37.2	114	7.60	33.4	
1,4-Dichlorobenzene	1.3	0.25	2.067	0	62.8	28.8	106	3.81	20.9	
2,4-Dinitrotoluene	1.3	0.62	2.067	0	62.8	34.6	111	5.41	27.9	
N-Nitrosodi-n-propylamine	1.5	0.25	2.067	0	72.4	32.7	117	10.5	27.5	
4-Nitrophenol	3.2	0.31	4.122	0	76.9	30.1	134	0.104	33.7	
Pentachlorophenol	3.1	0.50	4.122	0.1602	71.0	24	120	0.688	39.7	
Phenol	3.0	0.25	4.122	0	72.4	38.3	118	8.63	30.1	
Pyrene	1.5	0.25	2.067	0	72.0	38.3	134	9.71	22.7	
1,2,4-Trichlorobenzene	1.5	0.25	2.067	0	74.1	31.8	110	6.12	27.8	
Surr: 2-Fluorophenol	2.8		4.122		68.8	26.4	129	0	0	
Surr: Phenol-d5	3.0		4.122		73.5	34.8	118	0	0	
Surr: 2,4,6-Tribromophenol	4.0		4.122		97.8	26.8	128	0	0	
Surr: Nitrobenzene-d5	1.5		2.067		72.1	35.8	124	0	0	
Surr: 2-Fluorobiphenyl	1.5		2.067		71.2	24.5	139	0	0	
Surr: 4-Terphenyl-d14	1.8		2.067		85.2	29.4	129	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C87

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19078		SampType: MBLK		TestCode: EPA Method 7471: Mercury					
Client ID:	PBS		Batch ID: 19078		RunNo: 26010					
Prep Date:	5/6/2015		Analysis Date: 5/6/2015		SeqNo: 771069		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	LCS-19078		SampType: LCS		TestCode: EPA Method 7471: Mercury					
Client ID:	LCSS		Batch ID: 19078		RunNo: 26010					
Prep Date:	5/6/2015		Analysis Date: 5/6/2015		SeqNo: 771070		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	103	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504C87

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19080		SampType: MBLK			TestCode: EPA Method 6010B: Soil Metals				
Client ID:	PBS		Batch ID: 19080			RunNo: 26050				
Prep Date:	5/6/2015		Analysis Date: 5/7/2015			SeqNo: 772227 Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	1.1	2.5								J
Lead	0.13	0.25								J
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	0.74	2.5								J

Sample ID	LCS-19080		SampType: LCS			TestCode: EPA Method 6010B: Soil Metals				
Client ID:	LCSS		Batch ID: 19080			RunNo: 26050				
Prep Date:	5/6/2015		Analysis Date: 5/7/2015			SeqNo: 772228 Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	26	2.5	25.00	0	103	80	120			
Arsenic	25	2.5	25.00	0	101	80	120			
Barium	25	0.10	25.00	0	100	80	120			
Beryllium	27	0.15	25.00	0	107	80	120			
Cadmium	25	0.10	25.00	0	101	80	120			
Chromium	25	0.30	25.00	0	102	80	120			
Cobalt	25	0.30	25.00	0	99.2	80	120			
Iron	26	2.5	25.00	0	103	80	120			
Lead	25	0.25	25.00	0	101	80	120			
Manganese	25	0.10	25.00	0	101	80	120			
Nickel	25	0.50	25.00	0	99.2	80	120			
Selenium	25	2.5	25.00	0	99.4	80	120			
Silver	5.4	0.25	5.000	0	107	80	120			
Vanadium	26	2.5	25.00	0	105	80	120			
Zinc	26	2.5	25.00	0	103	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit



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

Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1504C87

RcptNo: 1

Received by/date

Logged By: Ashley Gallegos

4/29/2015 4:00:00 PM

Completed By: Ashley Gallegos

4/30/2015 11:48:30 AM

Reviewed By:

Chain of Custody

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

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°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	2.5	Good	Yes			

Chain-of-Custody Record

Client: **WESTERN REFINING SW, INC.**

GALLUP REFINERY

Mailing Address: **92 GIANT CROSSING ROAD**

GALLUP, NM 87301

Phone #: **505-727-0231**

Email or Fax: **CHERYL.JOHNSON@WNR.COM**

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other

☒ EDD (Type) **EXCEL**

Project Manager: **CHERYL JOHNSON**

Sampler: **TRACY PAYNE**

On Ice: ☐ Yes ☐ No

Sample Temperature: **2.6**

Container Type and #

Preservative Type

HEAL No.

1504C87

-004

JARS-2 NEAT

VIALS-2 MECH

VIALS-2 SOBI

JARS-2 NEAT

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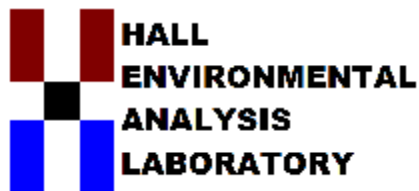
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VIALS-2 SOBI

-006

WESTERN REFINING SOUTHWEST, INC.
GALLUP REFINERY - SWMU 10
METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020



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

October 19, 2016

Ed Riege

Western Refining Company

Rt. 3 Box 7

Gallup, NM 87301

TEL: (505) 722-0231

FAX

RE: SWMU 10

OrderNo.: 1609B57

Dear Ed Riege:

Hall Environmental Analysis Laboratory received 12 sample(s) on 9/20/2016 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued October 06, 2016.

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', with a stylized flourish at the end.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-23 (2-2.5')

Project: SWMU 10

Collection Date: 9/19/2016 11:40:00 AM

Lab ID: 1609B57-001

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM	
Diesel Range Organics (DRO)	ND	2.1	11		mg/Kg-dr	1	9/27/2016 12:55:29 PM	27685
Motor Oil Range Organics (MRO)	ND	56	56		mg/Kg-dr	1	9/27/2016 12:55:29 PM	27685
Surr: DNOP	76.0	0	70-130		%Rec	1	9/27/2016 12:55:29 PM	27685
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	11	1.0	1.0		wt%	1	9/27/2016	R37517
EPA METHOD 7471: MERCURY							Analyst: pmf	
Mercury	0.0072	0.00063	0.037	J	mg/Kg-dr	1	9/27/2016 10:33:45 AM	27711
EPA METHOD 6010B: SOIL METALS							Analyst: MED	
Antimony	ND	2.2	5.5		mg/Kg-dr	2	9/28/2016 10:07:29 PM	27709
Arsenic	ND	2.0	5.5		mg/Kg-dr	2	9/28/2016 10:07:29 PM	27709
Barium	220	0.16	0.22		mg/Kg-dr	2	9/28/2016 10:07:29 PM	27709
Beryllium	1.1	0.076	0.33		mg/Kg-dr	2	9/28/2016 10:07:29 PM	27709
Cadmium	ND	0.14	0.22		mg/Kg-dr	2	9/28/2016 10:07:29 PM	27709
Chromium	14	0.21	0.66		mg/Kg-dr	2	9/28/2016 10:07:29 PM	27709
Cobalt	6.8	0.25	0.66		mg/Kg-dr	2	9/28/2016 10:07:29 PM	27709
Iron	19000	83	280		mg/Kg-dr	100	9/28/2016 10:24:34 PM	27709
Lead	2.6	0.38	0.55		mg/Kg-dr	2	9/28/2016 10:07:29 PM	27709
Manganese	450	0.12	0.22		mg/Kg-dr	2	9/28/2016 10:07:29 PM	27709
Nickel	12	0.33	1.1		mg/Kg-dr	2	9/28/2016 10:07:29 PM	27709
Selenium	ND	4.0	5.5		mg/Kg-dr	2	9/28/2016 10:07:29 PM	27709
Silver	ND	0.14	0.55		mg/Kg-dr	2	9/28/2016 10:07:29 PM	27709
Vanadium	23	0.39	5.5		mg/Kg-dr	2	9/28/2016 10:07:29 PM	27709
Zinc	21	0.77	5.5		mg/Kg-dr	2	9/28/2016 10:07:29 PM	27709
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	0.095	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Acenaphthylene	ND	0.090	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Aniline	ND	0.10	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Anthracene	ND	0.074	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Azobenzene	ND	0.14	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Benz(a)anthracene	ND	0.095	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Benzo(a)pyrene	ND	0.084	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Benzo(b)fluoranthene	ND	0.10	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Benzo(g,h,i)perylene	ND	0.098	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Benzo(k)fluoranthene	ND	0.098	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Benzoic acid	ND	0.092	0.55		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Benzyl alcohol	ND	0.087	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Bis(2-chloroethoxy)methane	ND	0.12	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-23 (2-2.5')

Project: SWMU 10

Collection Date: 9/19/2016 11:40:00 AM

Lab ID: 1609B57-001

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Bis(2-chloroethyl)ether	ND	0.081	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Bis(2-chloroisopropyl)ether	ND	0.099	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Bis(2-ethylhexyl)phthalate	0.15	0.090	0.55	J	mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
4-Bromophenyl phenyl ether	ND	0.11	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Butyl benzyl phthalate	ND	0.098	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Carbazole	ND	0.075	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
4-Chloro-3-methylphenol	ND	0.13	0.55		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
4-Chloroaniline	ND	0.12	0.55		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
2-Chloronaphthalene	ND	0.087	0.28		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
2-Chlorophenol	ND	0.087	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
4-Chlorophenyl phenyl ether	ND	0.13	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Chrysene	ND	0.094	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Di-n-butyl phthalate	0.22	0.083	0.44	J	mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Di-n-octyl phthalate	ND	0.095	0.44		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Dibenz(a,h)anthracene	ND	0.090	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Dibenzofuran	ND	0.11	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
1,2-Dichlorobenzene	ND	0.085	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
1,3-Dichlorobenzene	ND	0.086	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
1,4-Dichlorobenzene	ND	0.094	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
3,3'-Dichlorobenzidine	ND	0.082	0.28		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Diethyl phthalate	0.22	0.11	0.22	J	mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Dimethyl phthalate	ND	0.11	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
2,4-Dichlorophenol	ND	0.10	0.44		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
2,4-Dimethylphenol	ND	0.12	0.33		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
4,6-Dinitro-2-methylphenol	ND	0.067	0.44		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
2,4-Dinitrophenol	ND	0.074	0.55		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
2,4-Dinitrotoluene	ND	0.099	0.55		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
2,6-Dinitrotoluene	ND	0.12	0.55		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Fluoranthene	ND	0.064	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Fluorene	ND	0.10	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Hexachlorobenzene	ND	0.087	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Hexachlorobutadiene	ND	0.12	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Hexachlorocyclopentadiene	ND	0.13	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Hexachloroethane	ND	0.095	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Indeno(1,2,3-cd)pyrene	ND	0.087	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Isophorone	ND	0.12	0.44		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
1-Methylnaphthalene	ND	0.11	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
2-Methylnaphthalene	ND	0.13	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
2-Methylphenol	ND	0.093	0.44		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-23 (2-2.5')

Project: SWMU 10

Collection Date: 9/19/2016 11:40:00 AM

Lab ID: 1609B57-001

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
3+4-Methylphenol	ND	0.080	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
N-Nitrosodiphenylamine	ND	0.11	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Naphthalene	ND	0.11	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
2-Nitroaniline	ND	0.12	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
3-Nitroaniline	ND	0.098	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
4-Nitroaniline	ND	0.078	0.44		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Nitrobenzene	ND	0.11	0.44		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
2-Nitrophenol	ND	0.11	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
4-Nitrophenol	ND	0.084	0.28		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Pentachlorophenol	ND	0.071	0.44		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Phenanthrene	ND	0.075	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Phenol	ND	0.084	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Pyrene	ND	0.084	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Pyridine	ND	0.088	0.44		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
1,2,4-Trichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
2,4,5-Trichlorophenol	ND	0.11	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
2,4,6-Trichlorophenol	ND	0.092	0.22		mg/Kg-dr	1	9/28/2016 5:43:44 PM	27700
Surr: 2-Fluorophenol	91.7	0	35-97.9		%Rec	1	9/28/2016 5:43:44 PM	27700
Surr: Phenol-d5	91.3	0	37.3-105		%Rec	1	9/28/2016 5:43:44 PM	27700
Surr: 2,4,6-Tribromophenol	91.3	0	35.6-118		%Rec	1	9/28/2016 5:43:44 PM	27700
Surr: Nitrobenzene-d5	78.3		41.2-107		%Rec	1	9/28/2016 5:43:44 PM	27700
Surr: 2-Fluorobiphenyl	80.2		41.9-119		%Rec	1	9/28/2016 5:43:44 PM	27700
Surr: 4-Terphenyl-d14	64.0		15-132		%Rec	1	9/28/2016 5:43:44 PM	27700
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Benzene	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Toluene	1.17	0.246	2.04	J	µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Ethylbenzene	0.407	0.274	2.04	J	µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Methyl tert-butyl ether (MTBE)	ND	0.342	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,2,4-Trimethylbenzene	0.428	0.345	2.04	J	µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,3,5-Trimethylbenzene	0.356	0.336	2.04	J	µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,2-Dichloroethane (EDC)	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,2-Dibromoethane (EDB)	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Naphthalene	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1-Methylnaphthalene	ND	0.231	4.07		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
2-Methylnaphthalene	ND	0.536	4.07		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Acetone	7.10	0.603	10.2	J	µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Bromobenzene	ND	0.207	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Bromodichloromethane	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629

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Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-23 (2-2.5')

Project: SWMU 10

Collection Date: 9/19/2016 11:40:00 AM

Lab ID: 1609B57-001

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Bromoform	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Bromomethane	ND	0.367	3.05		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
2-Butanone	ND	0.734	10.2		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Carbon disulfide	ND	0.753	10.2		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Carbon tetrachloride	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Chlorobenzene	ND	0.234	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Chloroethane	ND	0.376	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Chloroform	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Chloromethane	ND	0.516	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
2-Chlorotoluene	ND	0.346	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
4-Chlorotoluene	ND	0.339	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
cis-1,2-DCE	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
cis-1,3-Dichloropropene	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,2-Dibromo-3-chloropropane	ND	0.217	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Dibromochloromethane	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Dibromomethane	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,2-Dichlorobenzene	ND	0.297	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,3-Dichlorobenzene	ND	0.376	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,4-Dichlorobenzene	ND	0.381	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Dichlorodifluoromethane	ND	1.19	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,1-Dichloroethane	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,1-Dichloroethene	ND	0.333	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,2-Dichloropropane	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,3-Dichloropropane	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
2,2-Dichloropropane	ND	0.257	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,1-Dichloropropene	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Hexachlorobutadiene	ND	0.464	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
2-Hexanone	ND	0.507	10.2		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Isopropylbenzene	0.275	0.256	2.04	J	µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
4-Isopropyltoluene	ND	0.382	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
4-Methyl-2-pentanone	ND	4.07	10.2		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Methylene chloride	ND	2.04	3.05		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
n-Butylbenzene	ND	0.496	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
n-Propylbenzene	0.377	0.365	2.04	J	µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
sec-Butylbenzene	ND	0.362	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Styrene	ND	0.260	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
tert-Butylbenzene	ND	0.298	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,1,1,2-Tetrachloroethane	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,1,2,2-Tetrachloroethane	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-23 (2-2.5')

Project: SWMU 10

Collection Date: 9/19/2016 11:40:00 AM

Lab ID: 1609B57-001

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Tetrachloroethene (PCE)	ND	0.268	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
trans-1,2-DCE	ND	0.206	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
trans-1,3-Dichloropropene	ND	0.246	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,2,3-Trichlorobenzene	ND	0.493	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,2,4-Trichlorobenzene	ND	0.618	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,1,1-Trichloroethane	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,1,2-Trichloroethane	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Trichloroethene (TCE)	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Trichlorofluoromethane	ND	0.256	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
1,2,3-Trichloropropane	ND	2.04	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Vinyl chloride	ND	0.536	2.04		µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Xylenes, Total	1.42	0.812	2.04	J	µg/Kg-dry	1	9/21/2016 2:30:00 PM	27629
Surr: 1,2-Dichloroethane-d4	121	0	70-130		%Rec	1	9/21/2016 2:30:00 PM	27629
Surr: 4-Bromofluorobenzene	99.6	0	70-130		%Rec	1	9/21/2016 2:30:00 PM	27629
Surr: Dibromofluoromethane	111	0	70-130		%Rec	1	9/21/2016 2:30:00 PM	27629
Surr: Toluene-d8	97.8	0	70-130		%Rec	1	9/21/2016 2:30:00 PM	27629
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG	
Gasoline Range Organics (GRO)	ND	0.55	3.6		mg/Kg-dr	1	9/23/2016 11:19:22 AM	R37464
Surr: BFB	104	0	70-130		%Rec	1	9/23/2016 11:19:22 AM	R37464

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-23 (15-16')

Project: SWMU 10

Collection Date: 9/19/2016 11:55:00 AM

Lab ID: 1609B57-002

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM	
Diesel Range Organics (DRO)	ND	2.0	11		mg/Kg-dr	1	9/23/2016 10:17:59 AM	27652
Motor Oil Range Organics (MRO)	ND	55	55		mg/Kg-dr	1	9/23/2016 10:17:59 AM	27652
Surr: DNOP	73.9	0	70-130		%Rec	1	9/23/2016 10:17:59 AM	27652
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	12	1.0	1.0		wt%	1	9/27/2016	R37517
EPA METHOD 7471: MERCURY							Analyst: pmf	
Mercury	0.0026	0.00065	0.038	J	mg/Kg-dr	1	9/27/2016 10:39:03 AM	27711
EPA METHOD 6010B: SOIL METALS							Analyst: MED	
Antimony	ND	1.1	2.8		mg/Kg-dr	1	9/28/2016 4:15:47 PM	27709
Arsenic	1.0	1.0	2.8	J	mg/Kg-dr	1	9/28/2016 4:15:47 PM	27709
Barium	730	0.41	0.57		mg/Kg-dr	5	9/28/2016 10:27:48 PM	27709
Beryllium	0.82	0.039	0.17		mg/Kg-dr	1	9/28/2016 4:15:47 PM	27709
Cadmium	ND	0.072	0.11		mg/Kg-dr	1	9/28/2016 4:15:47 PM	27709
Chromium	13	0.11	0.34		mg/Kg-dr	1	9/28/2016 4:15:47 PM	27709
Cobalt	8.0	0.13	0.34		mg/Kg-dr	1	9/28/2016 10:26:03 PM	27709
Iron	19000	86	280		mg/Kg-dr	100	9/28/2016 10:38:43 PM	27709
Lead	0.95	0.20	0.28		mg/Kg-dr	1	9/28/2016 10:26:03 PM	27709
Manganese	850	0.30	0.57		mg/Kg-dr	5	9/28/2016 10:27:48 PM	27709
Nickel	13	0.17	0.57		mg/Kg-dr	1	9/28/2016 4:15:47 PM	27709
Selenium	ND	2.1	2.8		mg/Kg-dr	1	9/28/2016 4:15:47 PM	27709
Silver	ND	0.071	0.28		mg/Kg-dr	1	9/28/2016 4:15:47 PM	27709
Vanadium	13	0.20	2.8		mg/Kg-dr	1	9/28/2016 4:15:47 PM	27709
Zinc	25	0.40	2.8		mg/Kg-dr	1	9/28/2016 10:26:03 PM	27709
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	0.098	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Acenaphthylene	ND	0.093	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Aniline	ND	0.11	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Anthracene	ND	0.075	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Azobenzene	ND	0.14	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Benz(a)anthracene	ND	0.098	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Benzo(a)pyrene	ND	0.086	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Benzo(b)fluoranthene	ND	0.10	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Benzo(g,h,i)perylene	ND	0.10	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Benzo(k)fluoranthene	ND	0.10	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Benzoic acid	ND	0.094	0.57		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Benzyl alcohol	ND	0.089	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Bis(2-chloroethoxy)methane	ND	0.12	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700

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Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-23 (15-16')

Project: SWMU 10

Collection Date: 9/19/2016 11:55:00 AM

Lab ID: 1609B57-002

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Bis(2-chloroethyl)ether	ND	0.084	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Bis(2-chloroisopropyl)ether	ND	0.10	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Bis(2-ethylhexyl)phthalate	0.17	0.093	0.57	J	mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
4-Bromophenyl phenyl ether	ND	0.11	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Butyl benzyl phthalate	ND	0.10	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Carbazole	ND	0.077	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
4-Chloro-3-methylphenol	ND	0.14	0.57		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
4-Chloroaniline	ND	0.12	0.57		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
2-Chloronaphthalene	ND	0.090	0.28		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
2-Chlorophenol	ND	0.090	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
4-Chlorophenyl phenyl ether	ND	0.13	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Chrysene	ND	0.097	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Di-n-butyl phthalate	0.25	0.085	0.46	J	mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Di-n-octyl phthalate	ND	0.097	0.46		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Dibenz(a,h)anthracene	ND	0.092	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Dibenzofuran	ND	0.11	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
1,2-Dichlorobenzene	ND	0.087	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
1,3-Dichlorobenzene	ND	0.088	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
1,4-Dichlorobenzene	ND	0.096	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
3,3'-Dichlorobenzidine	ND	0.084	0.28		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Diethyl phthalate	0.22	0.12	0.23	J	mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
2,4-Dichlorophenol	ND	0.11	0.46		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
2,4-Dimethylphenol	ND	0.12	0.34		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
4,6-Dinitro-2-methylphenol	ND	0.069	0.46		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
2,4-Dinitrophenol	ND	0.075	0.57		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
2,4-Dinitrotoluene	ND	0.10	0.57		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
2,6-Dinitrotoluene	ND	0.12	0.57		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Fluoranthene	ND	0.066	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Fluorene	ND	0.10	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Hexachlorobenzene	ND	0.090	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Hexachlorobutadiene	ND	0.13	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Hexachlorocyclopentadiene	ND	0.13	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Hexachloroethane	ND	0.098	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Indeno(1,2,3-cd)pyrene	ND	0.089	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Isophorone	ND	0.13	0.46		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
2-Methylnaphthalene	ND	0.13	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
2-Methylphenol	ND	0.095	0.46		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700

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Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-23 (15-16')

Project: SWMU 10

Collection Date: 9/19/2016 11:55:00 AM

Lab ID: 1609B57-002

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
3+4-Methylphenol	ND	0.082	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
N-Nitrosodi-n-propylamine	ND	0.11	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
N-Nitrosodiphenylamine	ND	0.11	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
2-Nitroaniline	ND	0.12	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
3-Nitroaniline	ND	0.10	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
4-Nitroaniline	ND	0.080	0.46		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
2-Nitrophenol	ND	0.11	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
4-Nitrophenol	ND	0.087	0.28		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Pentachlorophenol	ND	0.073	0.46		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Phenanthrene	ND	0.077	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Phenol	ND	0.086	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Pyrene	ND	0.086	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Pyridine	ND	0.090	0.46		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
2,4,5-Trichlorophenol	ND	0.11	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
2,4,6-Trichlorophenol	ND	0.094	0.23		mg/Kg-dr	1	9/28/2016 6:11:39 PM	27700
Surr: 2-Fluorophenol	87.6	0	35-97.9		%Rec	1	9/28/2016 6:11:39 PM	27700
Surr: Phenol-d5	85.9	0	37.3-105		%Rec	1	9/28/2016 6:11:39 PM	27700
Surr: 2,4,6-Tribromophenol	97.2	0	35.6-118		%Rec	1	9/28/2016 6:11:39 PM	27700
Surr: Nitrobenzene-d5	81.5		41.2-107		%Rec	1	9/28/2016 6:11:39 PM	27700
Surr: 2-Fluorobiphenyl	83.2		41.9-119		%Rec	1	9/28/2016 6:11:39 PM	27700
Surr: 4-Terphenyl-d14	70.3		15-132		%Rec	1	9/28/2016 6:11:39 PM	27700
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Benzene	10.3	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Toluene	7.43	0.258	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Ethylbenzene	1.84	0.286	2.13	J	µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Methyl tert-butyl ether (MTBE)	ND	0.358	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,2,4-Trimethylbenzene	1.61	0.361	2.13	J	µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,3,5-Trimethylbenzene	1.11	0.352	2.13	J	µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,2-Dichloroethane (EDC)	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,2-Dibromoethane (EDB)	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Naphthalene	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1-Methylnaphthalene	0.448	0.242	4.26	J	µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
2-Methylnaphthalene	0.575	0.561	4.26	J	µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Acetone	4.45	0.631	10.7	J	µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Bromobenzene	ND	0.217	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Bromodichloromethane	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629

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	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-23 (15-16')

Project: SWMU 10

Collection Date: 9/19/2016 11:55:00 AM

Lab ID: 1609B57-002

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Bromoform	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Bromomethane	ND	0.384	3.20		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
2-Butanone	ND	0.768	10.7		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Carbon disulfide	ND	0.788	10.7		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Carbon tetrachloride	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Chlorobenzene	ND	0.244	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Chloroethane	ND	0.393	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Chloroform	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Chloromethane	ND	0.540	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
2-Chlorotoluene	ND	0.363	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
4-Chlorotoluene	ND	0.354	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
cis-1,2-DCE	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
cis-1,3-Dichloropropene	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,2-Dibromo-3-chloropropane	ND	0.227	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Dibromochloromethane	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Dibromomethane	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,2-Dichlorobenzene	ND	0.310	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,3-Dichlorobenzene	ND	0.394	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,4-Dichlorobenzene	ND	0.399	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Dichlorodifluoromethane	ND	1.24	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,1-Dichloroethane	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,1-Dichloroethene	ND	0.349	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,2-Dichloropropane	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,3-Dichloropropane	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
2,2-Dichloropropane	ND	0.269	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,1-Dichloropropene	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Hexachlorobutadiene	ND	0.486	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
2-Hexanone	ND	0.531	10.7		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Isopropylbenzene	0.458	0.268	2.13	J	µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
4-Isopropyltoluene	ND	0.400	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
4-Methyl-2-pentanone	ND	4.26	10.7		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Methylene chloride	ND	2.13	3.20		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
n-Butylbenzene	ND	0.519	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
n-Propylbenzene	0.618	0.382	2.13	J	µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
sec-Butylbenzene	ND	0.378	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Styrene	ND	0.272	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
tert-Butylbenzene	ND	0.311	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,1,1,2-Tetrachloroethane	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,1,2,2-Tetrachloroethane	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629

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	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-23 (15-16')

Project: SWMU 10

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Lab ID: 1609B57-002

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Tetrachloroethene (PCE)	ND	0.280	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
trans-1,2-DCE	ND	0.215	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
trans-1,3-Dichloropropene	ND	0.258	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,2,3-Trichlorobenzene	ND	0.516	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,2,4-Trichlorobenzene	ND	0.646	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,1,1-Trichloroethane	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,1,2-Trichloroethane	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Trichloroethene (TCE)	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Trichlorofluoromethane	ND	0.268	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
1,2,3-Trichloropropane	ND	2.13	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Vinyl chloride	ND	0.561	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Xylenes, Total	5.54	0.850	2.13		µg/Kg-dry	1	9/21/2016 2:55:00 PM	27629
Surr: 1,2-Dichloroethane-d4	122	0	70-130		%Rec	1	9/21/2016 2:55:00 PM	27629
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	9/21/2016 2:55:00 PM	27629
Surr: Dibromofluoromethane	110	0	70-130		%Rec	1	9/21/2016 2:55:00 PM	27629
Surr: Toluene-d8	96.7	0	70-130		%Rec	1	9/21/2016 2:55:00 PM	27629
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG	
Gasoline Range Organics (GRO)	ND	0.51	3.4		mg/Kg-dr	1	9/23/2016 11:48:12 AM	R37464
Surr: BFB	105	0	70-130		%Rec	1	9/23/2016 11:48:12 AM	R37464

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Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-24 (2-2.5')

Project: SWMU 10

Collection Date: 9/19/2016 12:55:00 PM

Lab ID: 1609B57-003

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM	
Diesel Range Organics (DRO)	ND	1.8	10		mg/Kg-dr	1	9/23/2016 11:01:26 AM	27652
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	9/23/2016 11:01:26 AM	27652
Surr: DNOP	83.0	0	70-130		%Rec	1	9/23/2016 11:01:26 AM	27652
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	2.6	1.0	1.0		wt%	1	9/27/2016	R37517
EPA METHOD 7471: MERCURY							Analyst: pmf	
Mercury	0.0041	0.00059	0.034	J	mg/Kg-dr	1	9/27/2016 10:40:50 AM	27711
EPA METHOD 6010B: SOIL METALS							Analyst: MED	
Antimony	1.1	1.0	2.6	J	mg/Kg-dr	1	9/28/2016 4:17:16 PM	27709
Arsenic	ND	0.91	2.6		mg/Kg-dr	1	9/28/2016 4:17:16 PM	27709
Barium	190	0.073	0.10		mg/Kg-dr	1	9/28/2016 4:17:16 PM	27709
Beryllium	0.60	0.035	0.15		mg/Kg-dr	1	9/28/2016 4:17:16 PM	27709
Cadmium	ND	0.065	0.10		mg/Kg-dr	1	9/28/2016 4:17:16 PM	27709
Chromium	6.3	0.096	0.31		mg/Kg-dr	1	9/28/2016 4:17:16 PM	27709
Cobalt	3.6	0.11	0.31		mg/Kg-dr	1	9/28/2016 10:40:13 PM	27709
Iron	11000	39	130		mg/Kg-dr	50	9/28/2016 10:41:58 PM	27709
Lead	2.3	0.18	0.26		mg/Kg-dr	1	9/28/2016 10:40:13 PM	27709
Manganese	370	0.11	0.20		mg/Kg-dr	2	9/28/2016 5:28:54 PM	27709
Nickel	5.7	0.15	0.51		mg/Kg-dr	1	9/28/2016 4:17:16 PM	27709
Selenium	ND	1.9	2.6		mg/Kg-dr	1	9/28/2016 4:17:16 PM	27709
Silver	ND	0.064	0.26		mg/Kg-dr	1	9/28/2016 4:17:16 PM	27709
Vanadium	12	0.18	2.6		mg/Kg-dr	1	9/28/2016 4:17:16 PM	27709
Zinc	11	0.36	2.6		mg/Kg-dr	1	9/28/2016 10:40:13 PM	27709
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	0.087	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Acenaphthylene	ND	0.083	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Aniline	ND	0.096	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Anthracene	ND	0.067	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Azobenzene	ND	0.12	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Benz(a)anthracene	ND	0.087	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Benzo(a)pyrene	ND	0.077	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Benzo(b)fluoranthene	ND	0.092	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Benzo(g,h,i)perylene	ND	0.090	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Benzo(k)fluoranthene	ND	0.089	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Benzoic acid	ND	0.084	0.51		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Benzyl alcohol	ND	0.079	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Bis(2-chloroethoxy)methane	ND	0.11	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700

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Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-24 (2-2.5')

Project: SWMU 10

Collection Date: 9/19/2016 12:55:00 PM

Lab ID: 1609B57-003

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Bis(2-chloroethyl)ether	ND	0.075	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Bis(2-chloroisopropyl)ether	ND	0.091	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Bis(2-ethylhexyl)phthalate	0.16	0.083	0.51	J	mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
4-Bromophenyl phenyl ether	ND	0.097	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Butyl benzyl phthalate	ND	0.090	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Carbazole	ND	0.069	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
4-Chloro-3-methylphenol	ND	0.12	0.51		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
4-Chloroaniline	ND	0.11	0.51		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
2-Chloronaphthalene	ND	0.080	0.25		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
2-Chlorophenol	ND	0.080	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
4-Chlorophenyl phenyl ether	ND	0.12	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Chrysene	ND	0.086	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Di-n-butyl phthalate	0.22	0.076	0.41	J	mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Di-n-octyl phthalate	ND	0.087	0.41		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Dibenz(a,h)anthracene	ND	0.082	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Dibenzofuran	ND	0.10	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
1,2-Dichlorobenzene	ND	0.078	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
1,3-Dichlorobenzene	ND	0.078	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
1,4-Dichlorobenzene	ND	0.086	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
3,3'-Dichlorobenzidine	ND	0.075	0.25		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Diethyl phthalate	0.20	0.10	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Dimethyl phthalate	ND	0.099	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
2,4-Dichlorophenol	ND	0.095	0.41		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
2,4-Dimethylphenol	ND	0.11	0.30		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
4,6-Dinitro-2-methylphenol	ND	0.061	0.41		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
2,4-Dinitrophenol	ND	0.067	0.51		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
2,4-Dinitrotoluene	ND	0.091	0.51		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
2,6-Dinitrotoluene	ND	0.11	0.51		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Fluoranthene	ND	0.058	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Fluorene	ND	0.093	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Hexachlorobenzene	ND	0.080	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Hexachlorobutadiene	ND	0.11	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Hexachlorocyclopentadiene	ND	0.12	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Hexachloroethane	ND	0.087	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Indeno(1,2,3-cd)pyrene	ND	0.079	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Isophorone	ND	0.11	0.41		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
1-Methylnaphthalene	ND	0.10	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
2-Methylnaphthalene	ND	0.12	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
2-Methylphenol	ND	0.085	0.41		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700

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Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-24 (2-2.5')

Project: SWMU 10

Collection Date: 9/19/2016 12:55:00 PM

Lab ID: 1609B57-003

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
3+4-Methylphenol	ND	0.074	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
N-Nitrosodi-n-propylamine	ND	0.098	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
N-Nitrosodiphenylamine	ND	0.099	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Naphthalene	ND	0.097	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
2-Nitroaniline	ND	0.11	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
3-Nitroaniline	ND	0.090	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
4-Nitroaniline	ND	0.072	0.41		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Nitrobenzene	ND	0.10	0.41		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
2-Nitrophenol	ND	0.10	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
4-Nitrophenol	ND	0.077	0.25		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Pentachlorophenol	ND	0.065	0.41		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Phenanthrene	ND	0.069	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Phenol	ND	0.076	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Pyrene	ND	0.077	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Pyridine	ND	0.080	0.41		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
1,2,4-Trichlorobenzene	ND	0.11	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
2,4,5-Trichlorophenol	ND	0.10	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
2,4,6-Trichlorophenol	ND	0.084	0.20		mg/Kg-dr	1	9/28/2016 6:39:40 PM	27700
Surr: 2-Fluorophenol	74.8	0	35-97.9		%Rec	1	9/28/2016 6:39:40 PM	27700
Surr: Phenol-d5	81.1	0	37.3-105		%Rec	1	9/28/2016 6:39:40 PM	27700
Surr: 2,4,6-Tribromophenol	87.7	0	35.6-118		%Rec	1	9/28/2016 6:39:40 PM	27700
Surr: Nitrobenzene-d5	66.4		41.2-107		%Rec	1	9/28/2016 6:39:40 PM	27700
Surr: 2-Fluorobiphenyl	75.2		41.9-119		%Rec	1	9/28/2016 6:39:40 PM	27700
Surr: 4-Terphenyl-d14	64.0		15-132		%Rec	1	9/28/2016 6:39:40 PM	27700
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Benzene	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Toluene	1.39	0.205	1.70	J	µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Ethylbenzene	0.442	0.228	1.70	J	µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Methyl tert-butyl ether (MTBE)	ND	0.286	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,2,4-Trimethylbenzene	0.442	0.288	1.70	J	µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,3,5-Trimethylbenzene	0.306	0.281	1.70	J	µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,2-Dichloroethane (EDC)	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,2-Dibromoethane (EDB)	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Naphthalene	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1-Methylnaphthalene	ND	0.193	3.40		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
2-Methylnaphthalene	ND	0.448	3.40		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Acetone	19.2	0.503	8.50		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Bromobenzene	ND	0.173	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Bromodichloromethane	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629

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	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-24 (2-2.5')

Project: SWMU 10

Collection Date: 9/19/2016 12:55:00 PM

Lab ID: 1609B57-003

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Bromoform	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Bromomethane	0.544	0.306	2.55	J	µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
2-Butanone	ND	0.613	8.50		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Carbon disulfide	ND	0.629	8.50		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Carbon tetrachloride	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Chlorobenzene	ND	0.195	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Chloroethane	ND	0.314	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Chloroform	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Chloromethane	ND	0.431	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
2-Chlorotoluene	ND	0.289	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
4-Chlorotoluene	ND	0.283	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
cis-1,2-DCE	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
cis-1,3-Dichloropropene	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,2-Dibromo-3-chloropropane	ND	0.181	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Dibromochloromethane	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Dibromomethane	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,2-Dichlorobenzene	ND	0.248	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,3-Dichlorobenzene	ND	0.314	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,4-Dichlorobenzene	ND	0.318	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Dichlorodifluoromethane	ND	0.993	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,1-Dichloroethane	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,1-Dichloroethene	ND	0.278	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,2-Dichloropropane	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,3-Dichloropropane	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
2,2-Dichloropropane	ND	0.215	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,1-Dichloropropene	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Hexachlorobutadiene	ND	0.388	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
2-Hexanone	ND	0.423	8.50		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Isopropylbenzene	0.238	0.214	1.70	J	µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
4-Isopropyltoluene	ND	0.319	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
4-Methyl-2-pentanone	ND	3.40	8.50		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Methylene chloride	ND	1.70	2.55		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
n-Butylbenzene	ND	0.414	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
n-Propylbenzene	0.332	0.304	1.70	J	µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
sec-Butylbenzene	ND	0.302	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Styrene	ND	0.217	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
tert-Butylbenzene	ND	0.248	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,1,1,2-Tetrachloroethane	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,1,2,2-Tetrachloroethane	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-24 (2-2.5')

Project: SWMU 10

Collection Date: 9/19/2016 12:55:00 PM

Lab ID: 1609B57-003

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Tetrachloroethene (PCE)	ND	0.223	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
trans-1,2-DCE	ND	0.172	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
trans-1,3-Dichloropropene	ND	0.206	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,2,3-Trichlorobenzene	ND	0.411	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,2,4-Trichlorobenzene	ND	0.516	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,1,1-Trichloroethane	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,1,2-Trichloroethane	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Trichloroethene (TCE)	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Trichlorofluoromethane	ND	0.214	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
1,2,3-Trichloropropane	ND	1.70	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Vinyl chloride	ND	0.447	1.70		µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Xylenes, Total	1.31	0.678	1.70	J	µg/Kg-dry	1	9/21/2016 3:21:00 PM	27629
Surr: 1,2-Dichloroethane-d4	122	0	70-130		%Rec	1	9/21/2016 3:21:00 PM	27629
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	9/21/2016 3:21:00 PM	27629
Surr: Dibromofluoromethane	114	0	70-130		%Rec	1	9/21/2016 3:21:00 PM	27629
Surr: Toluene-d8	98.2	0	70-130		%Rec	1	9/21/2016 3:21:00 PM	27629
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG	
Gasoline Range Organics (GRO)	ND	0.47	3.1		mg/Kg-dr	1	9/23/2016 12:16:59 PM	R37464
Surr: BFB	102	0	70-130		%Rec	1	9/23/2016 12:16:59 PM	R37464

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-24 (6-8')

Project: SWMU 10

Collection Date: 9/19/2016 1:10:00 PM

Lab ID: 1609B57-004

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM	
Diesel Range Organics (DRO)	650	2.3	12		mg/Kg-dr	1	9/23/2016 11:23:07 AM	27652
Motor Oil Range Organics (MRO)	69	62	62		mg/Kg-dr	1	9/23/2016 11:23:07 AM	27652
Surr: DNOP	98.5	0	70-130		%Rec	1	9/23/2016 11:23:07 AM	27652
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	20	1.0	1.0		wt%	1	9/27/2016	R37517
EPA METHOD 7471: MERCURY							Analyst: pmf	
Mercury	0.0023	0.00072	0.042	J	mg/Kg-dr	1	9/27/2016 10:42:38 AM	27711
EPA METHOD 6010B: SOIL METALS							Analyst: MED	
Antimony	ND	1.2	3.1		mg/Kg-dr	1	9/28/2016 4:18:46 PM	27709
Arsenic	ND	1.1	3.1		mg/Kg-dr	1	9/28/2016 4:18:46 PM	27709
Barium	120	0.087	0.12		mg/Kg-dr	1	9/28/2016 4:18:46 PM	27709
Beryllium	0.99	0.042	0.18		mg/Kg-dr	1	9/28/2016 4:18:46 PM	27709
Cadmium	ND	0.078	0.12		mg/Kg-dr	1	9/28/2016 4:18:46 PM	27709
Chromium	12	0.12	0.37		mg/Kg-dr	1	9/28/2016 4:18:46 PM	27709
Cobalt	5.5	0.14	0.37		mg/Kg-dr	1	9/28/2016 10:43:29 PM	27709
Iron	18000	93	310		mg/Kg-dr	100	9/28/2016 10:45:22 PM	27709
Lead	3.9	0.21	0.31		mg/Kg-dr	1	9/28/2016 10:43:29 PM	27709
Manganese	200	0.066	0.12		mg/Kg-dr	1	9/28/2016 4:18:46 PM	27709
Nickel	9.9	0.19	0.61		mg/Kg-dr	1	9/28/2016 4:18:46 PM	27709
Selenium	ND	2.2	3.1		mg/Kg-dr	1	9/28/2016 4:18:46 PM	27709
Silver	ND	0.077	0.31		mg/Kg-dr	1	9/28/2016 4:18:46 PM	27709
Vanadium	19	0.22	3.1		mg/Kg-dr	1	9/28/2016 4:18:46 PM	27709
Zinc	18	0.43	3.1		mg/Kg-dr	1	9/28/2016 10:43:29 PM	27709
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	1.1	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Acenaphthylene	ND	1.0	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Aniline	ND	1.2	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Anthracene	ND	0.83	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Azobenzene	ND	1.5	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Benz(a)anthracene	ND	1.1	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Benzo(a)pyrene	ND	0.94	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Benzo(b)fluoranthene	ND	1.1	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Benzo(g,h,i)perylene	ND	1.1	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Benzo(k)fluoranthene	ND	1.1	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Benzoic acid	1.6	1.0	6.2	JD	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Benzyl alcohol	ND	0.97	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Bis(2-chloroethoxy)methane	ND	1.4	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700

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Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-24 (6-8')

Project: SWMU 10

Collection Date: 9/19/2016 1:10:00 PM

Lab ID: 1609B57-004

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Bis(2-chloroethyl)ether	ND	0.91	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Bis(2-chloroisopropyl)ether	ND	1.1	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Bis(2-ethylhexyl)phthalate	ND	1.0	6.2	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
4-Bromophenyl phenyl ether	ND	1.2	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Butyl benzyl phthalate	ND	1.1	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Carbazole	ND	0.84	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
4-Chloro-3-methylphenol	ND	1.5	6.2	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
4-Chloroaniline	ND	1.4	6.2	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
2-Chloronaphthalene	ND	0.98	3.1	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
2-Chlorophenol	ND	0.98	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
4-Chlorophenyl phenyl ether	ND	1.4	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Chrysene	ND	1.1	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Di-n-butyl phthalate	ND	0.93	5.0	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Di-n-octyl phthalate	ND	1.1	5.0	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Dibenz(a,h)anthracene	ND	1.0	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Dibenzofuran	ND	1.3	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
1,2-Dichlorobenzene	ND	0.95	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
1,3-Dichlorobenzene	ND	0.96	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
1,4-Dichlorobenzene	ND	1.1	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
3,3'-Dichlorobenzidine	ND	0.92	3.1	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Diethyl phthalate	ND	1.3	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Dimethyl phthalate	ND	1.2	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
2,4-Dichlorophenol	ND	1.2	5.0	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
2,4-Dimethylphenol	1.5	1.4	3.7	JD	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
4,6-Dinitro-2-methylphenol	ND	0.75	5.0	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
2,4-Dinitrophenol	ND	0.83	6.2	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
2,4-Dinitrotoluene	ND	1.1	6.2	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
2,6-Dinitrotoluene	ND	1.3	6.2	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Fluoranthene	ND	0.72	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Fluorene	ND	1.1	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Hexachlorobenzene	ND	0.98	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Hexachlorobutadiene	ND	1.4	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Hexachlorocyclopentadiene	ND	1.4	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Hexachloroethane	ND	1.1	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Indeno(1,2,3-cd)pyrene	ND	0.97	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Isophorone	ND	1.4	5.0	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
1-Methylnaphthalene	5.0	1.3	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
2-Methylnaphthalene	8.5	1.5	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
2-Methylphenol	4.7	1.0	5.0	JD	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-24 (6-8')

Project: SWMU 10

Collection Date: 9/19/2016 1:10:00 PM

Lab ID: 1609B57-004

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
3+4-Methylphenol	ND	0.90	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
N-Nitrosodi-n-propylamine	ND	1.2	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
N-Nitrosodiphenylamine	ND	1.2	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Naphthalene	1.9	1.2	2.5	JD	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
2-Nitroaniline	ND	1.3	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
3-Nitroaniline	ND	1.1	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
4-Nitroaniline	ND	0.88	5.0	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Nitrobenzene	ND	1.3	5.0	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
2-Nitrophenol	ND	1.2	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
4-Nitrophenol	ND	0.95	3.1	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Pentachlorophenol	ND	0.80	5.0	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Phenanthrene	1.4	0.85	2.5	JD	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Phenol	ND	0.94	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Pyrene	ND	0.94	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Pyridine	ND	0.99	5.0	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
1,2,4-Trichlorobenzene	ND	1.3	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
2,4,5-Trichlorophenol	ND	1.2	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
2,4,6-Trichlorophenol	ND	1.0	2.5	D	mg/Kg-dr	1	9/29/2016 3:36:03 PM	27700
Surr: 2-Fluorophenol	0	0	35-97.9	SD	%Rec	1	9/29/2016 3:36:03 PM	27700
Surr: Phenol-d5	0	0	37.3-105	SD	%Rec	1	9/29/2016 3:36:03 PM	27700
Surr: 2,4,6-Tribromophenol	0	0	35.6-118	SD	%Rec	1	9/29/2016 3:36:03 PM	27700
Surr: Nitrobenzene-d5	0		41.2-107	SD	%Rec	1	9/29/2016 3:36:03 PM	27700
Surr: 2-Fluorobiphenyl	0		41.9-119	SD	%Rec	1	9/29/2016 3:36:03 PM	27700
Surr: 4-Terphenyl-d14	0		15-132	SD	%Rec	1	9/29/2016 3:36:03 PM	27700
EPA METHOD 8260B: VOLATILES							Analyst: AG	
Benzene	ND	0.29	0.36		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Toluene	0.25	0.043	0.73	J	mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Ethylbenzene	0.69	0.060	0.73	J	mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Methyl tert-butyl ether (MTBE)	ND	0.23	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,2,4-Trimethylbenzene	5.3	0.054	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,3,5-Trimethylbenzene	1.9	0.053	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,2-Dichloroethane (EDC)	ND	0.19	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,2-Dibromoethane (EDB)	ND	0.052	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Naphthalene	3.7	0.11	1.5		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1-Methylnaphthalene	8.1	0.16	2.9		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
2-Methylnaphthalene	14	0.16	2.9		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Acetone	ND	0.94	11		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Bromobenzene	ND	0.059	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Bromodichloromethane	ND	0.042	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-24 (6-8')

Project: SWMU 10

Collection Date: 9/19/2016 1:10:00 PM

Lab ID: 1609B57-004

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: AG	
Bromoform	ND	0.089	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Bromomethane	0.32	0.27	2.2	J	mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
2-Butanone	ND	0.42	7.3		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Carbon disulfide	ND	0.24	7.3		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Carbon tetrachloride	ND	0.048	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Chlorobenzene	ND	0.059	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Chloroethane	ND	0.15	1.5		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Chloroform	ND	0.055	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Chloromethane	ND	0.065	2.2		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
2-Chlorotoluene	ND	0.054	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
4-Chlorotoluene	ND	0.064	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
cis-1,2-DCE	ND	0.042	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
cis-1,3-Dichloropropene	ND	0.067	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,2-Dibromo-3-chloropropane	ND	0.22	1.5		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Dibromochloromethane	ND	0.066	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Dibromomethane	ND	0.063	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,2-Dichlorobenzene	ND	0.064	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,3-Dichlorobenzene	ND	0.060	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,4-Dichlorobenzene	ND	0.090	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Dichlorodifluoromethane	ND	0.23	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,1-Dichloroethane	ND	0.039	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,1-Dichloroethene	ND	0.24	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,2-Dichloropropane	ND	0.061	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,3-Dichloropropane	ND	0.083	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
2,2-Dichloropropane	ND	0.042	1.5		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,1-Dichloropropene	ND	0.058	1.5		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Hexachlorobutadiene	ND	0.089	1.5		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
2-Hexanone	ND	0.40	7.3		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Isopropylbenzene	0.24	0.063	0.73	J	mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
4-Isopropyltoluene	0.38	0.065	0.73	J	mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
4-Methyl-2-pentanone	ND	0.21	7.3		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Methylene chloride	ND	0.21	2.2		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
n-Butylbenzene	0.50	0.065	2.2	J	mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
n-Propylbenzene	0.39	0.056	0.73	J	mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
sec-Butylbenzene	0.34	0.10	0.73	J	mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Styrene	ND	0.065	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
tert-Butylbenzene	ND	0.060	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,1,1,2-Tetrachloroethane	ND	0.070	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,1,2,2-Tetrachloroethane	ND	0.12	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-24 (6-8')

Project: SWMU 10

Collection Date: 9/19/2016 1:10:00 PM

Lab ID: 1609B57-004

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: AG	
Tetrachloroethene (PCE)	ND	0.060	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
trans-1,2-DCE	ND	0.20	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
trans-1,3-Dichloropropene	ND	0.11	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,2,3-Trichlorobenzene	ND	0.11	1.5		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,2,4-Trichlorobenzene	ND	0.078	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,1,1-Trichloroethane	ND	0.045	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,1,2-Trichloroethane	ND	0.086	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Trichloroethene (TCE)	ND	0.078	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Trichlorofluoromethane	ND	0.055	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
1,2,3-Trichloropropane	ND	0.13	1.5		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Vinyl chloride	ND	0.060	0.73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Xylenes, Total	12	0.14	1.5		mg/Kg-dr	20	9/23/2016 4:36:05 PM	S37464
Surr: Dibromofluoromethane	93.9		70-130		%Rec	20	9/23/2016 4:36:05 PM	S37464
Surr: 1,2-Dichloroethane-d4	99.0		70-130		%Rec	20	9/23/2016 4:36:05 PM	S37464
Surr: Toluene-d8	94.8		70-130		%Rec	20	9/23/2016 4:36:05 PM	S37464
Surr: 4-Bromofluorobenzene	85.0		70-130		%Rec	20	9/23/2016 4:36:05 PM	S37464
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG	
Gasoline Range Organics (GRO)	360	11	73		mg/Kg-dr	20	9/23/2016 4:36:05 PM	R37464
Surr: BFB	103	0	70-130		%Rec	20	9/23/2016 4:36:05 PM	R37464

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-24 (8-10')

Project: SWMU 10

Collection Date: 9/19/2016 1:25:00 PM

Lab ID: 1609B57-005

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM	
Diesel Range Organics (DRO)	190	2.2	12		mg/Kg-dr	1	9/23/2016 11:44:45 AM	27652
Motor Oil Range Organics (MRO)	ND	60	60		mg/Kg-dr	1	9/23/2016 11:44:45 AM	27652
Surr: DNOP	96.6	0	70-130		%Rec	1	9/23/2016 11:44:45 AM	27652
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	16	1.0	1.0		wt%	1	9/27/2016	R37517
EPA METHOD 7471: MERCURY							Analyst: pmf	
Mercury	0.0028	0.00066	0.038	J	mg/Kg-dr	1	9/27/2016 10:44:25 AM	27711
EPA METHOD 6010B: SOIL METALS							Analyst: MED	
Antimony	ND	2.4	6.0		mg/Kg-dr	2	9/28/2016 5:31:53 PM	27709
Arsenic	ND	2.1	6.0		mg/Kg-dr	2	9/28/2016 5:31:53 PM	27709
Barium	130	0.17	0.24		mg/Kg-dr	2	9/28/2016 5:31:53 PM	27709
Beryllium	1.3	0.083	0.36		mg/Kg-dr	2	9/28/2016 5:31:53 PM	27709
Cadmium	ND	0.15	0.24		mg/Kg-dr	2	9/28/2016 5:31:53 PM	27709
Chromium	15	0.23	0.72		mg/Kg-dr	2	9/28/2016 5:31:53 PM	27709
Cobalt	6.7	0.27	0.72		mg/Kg-dr	2	9/28/2016 10:46:52 PM	27709
Iron	20000	90	300		mg/Kg-dr	100	9/28/2016 10:48:45 PM	27709
Lead	1.5	0.42	0.60		mg/Kg-dr	2	9/28/2016 10:46:52 PM	27709
Manganese	290	0.13	0.24		mg/Kg-dr	2	9/28/2016 5:31:53 PM	27709
Nickel	12	0.36	1.2		mg/Kg-dr	2	9/28/2016 5:31:53 PM	27709
Selenium	ND	4.4	6.0		mg/Kg-dr	2	9/28/2016 5:31:53 PM	27709
Silver	ND	0.15	0.60		mg/Kg-dr	2	9/28/2016 5:31:53 PM	27709
Vanadium	23	0.42	6.0		mg/Kg-dr	2	9/28/2016 5:31:53 PM	27709
Zinc	22	0.83	6.0		mg/Kg-dr	2	9/28/2016 10:46:52 PM	27709
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	0.10	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Acenaphthylene	ND	0.096	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Aniline	ND	0.11	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Anthracene	ND	0.078	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Azobenzene	ND	0.14	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Benz(a)anthracene	ND	0.10	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Benzo(a)pyrene	ND	0.089	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Benzo(g,h,i)perylene	ND	0.10	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Benzo(k)fluoranthene	ND	0.10	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Benzoic acid	0.23	0.098	0.59	J	mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Benzyl alcohol	ND	0.092	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Bis(2-chloroethoxy)methane	ND	0.13	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-24 (8-10')

Project: SWMU 10

Collection Date: 9/19/2016 1:25:00 PM

Lab ID: 1609B57-005

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Bis(2-chloroethyl)ether	ND	0.087	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Bis(2-chloroisopropyl)ether	ND	0.11	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Bis(2-ethylhexyl)phthalate	0.23	0.096	0.59	J	mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
4-Bromophenyl phenyl ether	ND	0.11	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Butyl benzyl phthalate	ND	0.10	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Carbazole	ND	0.080	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
4-Chloro-3-methylphenol	ND	0.14	0.59		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
4-Chloroaniline	ND	0.13	0.59		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
2-Chloronaphthalene	ND	0.093	0.30		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
2-Chlorophenol	ND	0.093	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
4-Chlorophenyl phenyl ether	ND	0.13	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Chrysene	ND	0.10	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Di-n-butyl phthalate	0.28	0.088	0.47	J	mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Di-n-octyl phthalate	ND	0.10	0.47		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Dibenz(a,h)anthracene	ND	0.095	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Dibenzofuran	ND	0.12	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
1,2-Dichlorobenzene	ND	0.090	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
1,3-Dichlorobenzene	ND	0.091	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
1,4-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
3,3'-Dichlorobenzidine	ND	0.087	0.30		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Diethyl phthalate	0.23	0.12	0.24	J	mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Dimethyl phthalate	ND	0.12	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
2,4-Dichlorophenol	ND	0.11	0.47		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
2,4-Dimethylphenol	0.46	0.13	0.35		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
4,6-Dinitro-2-methylphenol	ND	0.071	0.47		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
2,4-Dinitrophenol	ND	0.078	0.59		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
2,4-Dinitrotoluene	ND	0.11	0.59		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
2,6-Dinitrotoluene	ND	0.12	0.59		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Fluoranthene	ND	0.068	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Fluorene	0.16	0.11	0.24	J	mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Hexachlorobenzene	ND	0.093	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Hexachlorobutadiene	ND	0.13	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Hexachlorocyclopentadiene	ND	0.13	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Hexachloroethane	ND	0.10	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Indeno(1,2,3-cd)pyrene	ND	0.092	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Isophorone	ND	0.13	0.47		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
1-Methylnaphthalene	1.1	0.12	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
2-Methylnaphthalene	1.9	0.14	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
2-Methylphenol	2.7	0.099	0.47		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-24 (8-10')

Project: SWMU 10

Collection Date: 9/19/2016 1:25:00 PM

Lab ID: 1609B57-005

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
3+4-Methylphenol	3.0	0.085	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
N-Nitrosodi-n-propylamine	ND	0.11	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
N-Nitrosodiphenylamine	ND	0.12	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Naphthalene	0.39	0.11	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
3-Nitroaniline	ND	0.10	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
4-Nitroaniline	ND	0.083	0.47		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
2-Nitrophenol	ND	0.12	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
4-Nitrophenol	ND	0.090	0.30		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Pentachlorophenol	ND	0.076	0.47		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Phenanthrene	0.32	0.080	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Phenol	1.4	0.089	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Pyrene	ND	0.089	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Pyridine	ND	0.094	0.47		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
1,2,4-Trichlorobenzene	ND	0.13	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
2,4,5-Trichlorophenol	ND	0.12	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
2,4,6-Trichlorophenol	ND	0.098	0.24		mg/Kg-dr	1	9/29/2016 4:04:08 PM	27700
Surr: 2-Fluorophenol	90.2	0	35-97.9		%Rec	1	9/29/2016 4:04:08 PM	27700
Surr: Phenol-d5	91.9	0	37.3-105		%Rec	1	9/29/2016 4:04:08 PM	27700
Surr: 2,4,6-Tribromophenol	89.0	0	35.6-118		%Rec	1	9/29/2016 4:04:08 PM	27700
Surr: Nitrobenzene-d5	76.5		41.2-107		%Rec	1	9/29/2016 4:04:08 PM	27700
Surr: 2-Fluorobiphenyl	79.2		41.9-119		%Rec	1	9/29/2016 4:04:08 PM	27700
Surr: 4-Terphenyl-d14	67.5		15-132		%Rec	1	9/29/2016 4:04:08 PM	27700
EPA METHOD 8260B: VOLATILES							Analyst: AG	
Benzene	0.26	0.13	0.17		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Toluene	0.49	0.020	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Ethylbenzene	0.41	0.027	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Methyl tert-butyl ether (MTBE)	ND	0.10	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,2,4-Trimethylbenzene	1.2	0.025	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,3,5-Trimethylbenzene	0.43	0.024	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,2-Dichloroethane (EDC)	ND	0.087	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,2-Dibromoethane (EDB)	ND	0.024	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Naphthalene	0.85	0.052	0.67		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1-Methylnaphthalene	1.6	0.074	1.3		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
2-Methylnaphthalene	2.8	0.071	1.3		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Acetone	ND	0.43	5.0		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Bromobenzene	ND	0.027	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Bromodichloromethane	ND	0.019	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-24 (8-10')

Project: SWMU 10

Collection Date: 9/19/2016 1:25:00 PM

Lab ID: 1609B57-005

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: AG	
Bromoform	ND	0.041	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Bromomethane	0.15	0.12	1.0	J	mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
2-Butanone	ND	0.19	3.3		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Carbon disulfide	ND	0.11	3.3		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Carbon tetrachloride	ND	0.022	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Chlorobenzene	ND	0.027	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Chloroethane	ND	0.067	0.67		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Chloroform	ND	0.025	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Chloromethane	ND	0.030	1.0		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
2-Chlorotoluene	ND	0.025	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
4-Chlorotoluene	ND	0.030	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
cis-1,2-DCE	ND	0.019	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
cis-1,3-Dichloropropene	ND	0.031	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,2-Dibromo-3-chloropropane	ND	0.10	0.67		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Dibromochloromethane	ND	0.030	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Dibromomethane	ND	0.029	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,2-Dichlorobenzene	ND	0.029	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,3-Dichlorobenzene	ND	0.027	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,4-Dichlorobenzene	ND	0.041	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Dichlorodifluoromethane	ND	0.10	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,1-Dichloroethane	ND	0.018	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,1-Dichloroethene	ND	0.11	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,2-Dichloropropane	ND	0.028	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,3-Dichloropropane	ND	0.038	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
2,2-Dichloropropane	ND	0.019	0.67		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,1-Dichloropropene	ND	0.026	0.67		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Hexachlorobutadiene	ND	0.041	0.67		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
2-Hexanone	ND	0.18	3.3		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Isopropylbenzene	0.14	0.029	0.33	J	mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
4-Isopropyltoluene	0.11	0.030	0.33	J	mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
4-Methyl-2-pentanone	ND	0.097	3.3		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Methylene chloride	ND	0.096	1.0		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
n-Butylbenzene	0.18	0.030	1.0	J	mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
n-Propylbenzene	0.24	0.026	0.33	J	mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
sec-Butylbenzene	0.14	0.046	0.33	J	mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Styrene	ND	0.030	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
tert-Butylbenzene	ND	0.028	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,1,1,2-Tetrachloroethane	ND	0.032	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,1,2,2-Tetrachloroethane	ND	0.054	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-24 (8-10')

Project: SWMU 10

Collection Date: 9/19/2016 1:25:00 PM

Lab ID: 1609B57-005

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: AG	
Tetrachloroethene (PCE)	ND	0.028	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
trans-1,2-DCE	ND	0.093	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
trans-1,3-Dichloropropene	ND	0.049	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,2,3-Trichlorobenzene	ND	0.050	0.67		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,2,4-Trichlorobenzene	ND	0.036	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,1,1-Trichloroethane	ND	0.020	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,1,2-Trichloroethane	ND	0.039	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Trichloroethene (TCE)	ND	0.036	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Trichlorofluoromethane	ND	0.025	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
1,2,3-Trichloropropane	ND	0.058	0.67		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Vinyl chloride	ND	0.027	0.33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Xylenes, Total	3.4	0.063	0.67		mg/Kg-dr	10	9/23/2016 5:04:54 PM	S37464
Surr: Dibromofluoromethane	99.5		70-130		%Rec	10	9/23/2016 5:04:54 PM	S37464
Surr: 1,2-Dichloroethane-d4	102		70-130		%Rec	10	9/23/2016 5:04:54 PM	S37464
Surr: Toluene-d8	94.9		70-130		%Rec	10	9/23/2016 5:04:54 PM	S37464
Surr: 4-Bromofluorobenzene	86.7		70-130		%Rec	10	9/23/2016 5:04:54 PM	S37464
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG	
Gasoline Range Organics (GRO)	110	5.0	33		mg/Kg-dr	10	9/23/2016 5:04:54 PM	R37464
Surr: BFB	100	0	70-130		%Rec	10	9/23/2016 5:04:54 PM	R37464

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 25 of 96
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-24 (15-16')

Project: SWMU 10

Collection Date: 9/19/2016 1:40:00 PM

Lab ID: 1609B57-006

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM	
Diesel Range Organics (DRO)	2.9	2.0	11	J	mg/Kg-dr	1	9/23/2016 12:06:21 PM	27652
Motor Oil Range Organics (MRO)	ND	53	53		mg/Kg-dr	1	9/23/2016 12:06:21 PM	27652
Surr: DNOP	82.4	0	70-130		%Rec	1	9/23/2016 12:06:21 PM	27652
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	12	1.0	1.0		wt%	1	9/27/2016	R37517
EPA METHOD 7471: MERCURY							Analyst: pmf	
Mercury	0.0011	0.00063	0.037	J	mg/Kg-dr	1	9/27/2016 10:46:13 AM	27711
EPA METHOD 6010B: SOIL METALS							Analyst: MED	
Antimony	2.1	1.2	2.9	J	mg/Kg-dr	1	9/28/2016 4:27:04 PM	27709
Arsenic	ND	1.0	2.9		mg/Kg-dr	1	9/28/2016 4:27:04 PM	27709
Barium	510	0.16	0.23		mg/Kg-dr	2	9/28/2016 5:33:15 PM	27709
Beryllium	0.95	0.040	0.17		mg/Kg-dr	1	9/28/2016 4:27:04 PM	27709
Cadmium	ND	0.073	0.11		mg/Kg-dr	1	9/28/2016 4:27:04 PM	27709
Chromium	15	0.11	0.34		mg/Kg-dr	1	9/28/2016 4:27:04 PM	27709
Cobalt	9.1	0.13	0.34		mg/Kg-dr	1	9/28/2016 10:50:13 PM	27709
Iron	20000	86	290		mg/Kg-dr	100	9/28/2016 11:00:48 PM	27709
Lead	1.1	0.20	0.29		mg/Kg-dr	1	9/28/2016 10:50:13 PM	27709
Manganese	1400	0.61	1.1		mg/Kg-dr	10	9/28/2016 10:51:59 PM	27709
Nickel	16	0.17	0.57		mg/Kg-dr	1	9/28/2016 4:27:04 PM	27709
Selenium	ND	2.1	2.9		mg/Kg-dr	1	9/28/2016 4:27:04 PM	27709
Silver	ND	0.072	0.29		mg/Kg-dr	1	9/28/2016 4:27:04 PM	27709
Vanadium	21	0.20	2.9		mg/Kg-dr	1	9/28/2016 4:27:04 PM	27709
Zinc	26	0.40	2.9		mg/Kg-dr	1	9/28/2016 10:50:13 PM	27709
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	0.096	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Acenaphthylene	ND	0.091	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Aniline	ND	0.11	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Anthracene	ND	0.075	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Azobenzene	ND	0.14	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Benz(a)anthracene	ND	0.097	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Benzo(a)pyrene	ND	0.085	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Benzo(b)fluoranthene	ND	0.10	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Benzo(g,h,i)perylene	ND	0.099	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Benzo(k)fluoranthene	ND	0.099	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Benzoic acid	ND	0.093	0.56		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Benzyl alcohol	ND	0.088	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Bis(2-chloroethoxy)methane	ND	0.12	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-24 (15-16')

Project: SWMU 10

Collection Date: 9/19/2016 1:40:00 PM

Lab ID: 1609B57-006

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Bis(2-chloroethyl)ether	ND	0.083	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Bis(2-chloroisopropyl)ether	ND	0.10	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Bis(2-ethylhexyl)phthalate	0.16	0.092	0.56	J	mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
4-Bromophenyl phenyl ether	ND	0.11	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Butyl benzyl phthalate	ND	0.099	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Carbazole	ND	0.076	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
4-Chloro-3-methylphenol	ND	0.13	0.56		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
4-Chloroaniline	ND	0.12	0.56		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
2-Chloronaphthalene	ND	0.088	0.28		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
2-Chlorophenol	ND	0.089	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
4-Chlorophenyl phenyl ether	ND	0.13	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Chrysene	ND	0.096	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Di-n-butyl phthalate	0.15	0.084	0.45	J	mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Di-n-octyl phthalate	ND	0.096	0.45		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Dibenz(a,h)anthracene	ND	0.091	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Dibenzofuran	ND	0.11	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
1,2-Dichlorobenzene	ND	0.086	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
1,3-Dichlorobenzene	ND	0.087	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
1,4-Dichlorobenzene	ND	0.095	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
3,3'-Dichlorobenzidine	ND	0.083	0.28		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Diethyl phthalate	0.18	0.11	0.22	J	mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Dimethyl phthalate	ND	0.11	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
2,4-Dichlorophenol	ND	0.10	0.45		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
2,4-Dimethylphenol	ND	0.12	0.34		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
4,6-Dinitro-2-methylphenol	ND	0.068	0.45		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
2,4-Dinitrophenol	ND	0.075	0.56		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
2,4-Dinitrotoluene	ND	0.10	0.56		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
2,6-Dinitrotoluene	ND	0.12	0.56		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Fluoranthene	ND	0.065	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Fluorene	ND	0.10	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Hexachlorobenzene	ND	0.089	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Hexachlorobutadiene	ND	0.13	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Hexachlorocyclopentadiene	ND	0.13	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Hexachloroethane	ND	0.097	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Indeno(1,2,3-cd)pyrene	ND	0.088	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Isophorone	ND	0.12	0.45		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
1-Methylnaphthalene	ND	0.11	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
2-Methylnaphthalene	ND	0.13	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
2-Methylphenol	ND	0.094	0.45		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-24 (15-16')

Project: SWMU 10

Collection Date: 9/19/2016 1:40:00 PM

Lab ID: 1609B57-006

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
3+4-Methylphenol	ND	0.081	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
N-Nitrosodiphenylamine	ND	0.11	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Naphthalene	ND	0.11	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
2-Nitroaniline	ND	0.12	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
3-Nitroaniline	ND	0.099	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
4-Nitroaniline	ND	0.079	0.45		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Nitrobenzene	ND	0.12	0.45		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
2-Nitrophenol	ND	0.11	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
4-Nitrophenol	ND	0.086	0.28		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Pentachlorophenol	ND	0.072	0.45		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Phenanthrene	ND	0.076	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Phenol	ND	0.085	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Pyrene	ND	0.085	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Pyridine	ND	0.089	0.45		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
1,2,4-Trichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
2,4,5-Trichlorophenol	ND	0.11	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
2,4,6-Trichlorophenol	ND	0.093	0.22		mg/Kg-dr	1	9/29/2016 4:32:05 PM	27700
Surr: 2-Fluorophenol	81.8	0	35-97.9		%Rec	1	9/29/2016 4:32:05 PM	27700
Surr: Phenol-d5	85.3	0	37.3-105		%Rec	1	9/29/2016 4:32:05 PM	27700
Surr: 2,4,6-Tribromophenol	80.6	0	35.6-118		%Rec	1	9/29/2016 4:32:05 PM	27700
Surr: Nitrobenzene-d5	69.7		41.2-107		%Rec	1	9/29/2016 4:32:05 PM	27700
Surr: 2-Fluorobiphenyl	71.9		41.9-119		%Rec	1	9/29/2016 4:32:05 PM	27700
Surr: 4-Terphenyl-d14	67.3		15-132		%Rec	1	9/29/2016 4:32:05 PM	27700
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Benzene	10.0	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Toluene	6.80	0.263	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Ethylbenzene	1.84	0.292	2.17	J	µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Methyl tert-butyl ether (MTBE)	ND	0.365	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,2,4-Trimethylbenzene	1.53	0.369	2.17	J	µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,3,5-Trimethylbenzene	1.05	0.359	2.17	J	µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,2-Dichloroethane (EDC)	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,2-Dibromoethane (EDB)	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Naphthalene	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1-Methylnaphthalene	0.772	0.247	4.35	J	µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
2-Methylnaphthalene	1.05	0.572	4.35	J	µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Acetone	4.62	0.643	10.9	J	µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Bromobenzene	ND	0.221	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Bromodichloromethane	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-24 (15-16')

Project: SWMU 10

Collection Date: 9/19/2016 1:40:00 PM

Lab ID: 1609B57-006

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Bromoform	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Bromomethane	ND	0.391	3.26		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
2-Butanone	ND	0.784	10.9		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Carbon disulfide	ND	0.804	10.9		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Carbon tetrachloride	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Chlorobenzene	ND	0.249	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Chloroethane	ND	0.401	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Chloroform	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Chloromethane	ND	0.551	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
2-Chlorotoluene	ND	0.370	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
4-Chlorotoluene	ND	0.361	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
cis-1,2-DCE	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
cis-1,3-Dichloropropene	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,2-Dibromo-3-chloropropane	ND	0.231	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Dibromochloromethane	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Dibromomethane	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,2-Dichlorobenzene	ND	0.317	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,3-Dichlorobenzene	ND	0.402	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,4-Dichlorobenzene	ND	0.407	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Dichlorodifluoromethane	ND	1.27	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,1-Dichloroethane	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,1-Dichloroethene	ND	0.356	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,2-Dichloropropane	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,3-Dichloropropane	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
2,2-Dichloropropane	ND	0.275	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,1-Dichloropropene	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Hexachlorobutadiene	ND	0.496	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
2-Hexanone	ND	0.541	10.9		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Isopropylbenzene	0.478	0.274	2.17	J	µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
4-Isopropyltoluene	ND	0.408	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
4-Methyl-2-pentanone	ND	4.35	10.9		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Methylene chloride	ND	2.17	3.26		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
n-Butylbenzene	ND	0.529	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
n-Propylbenzene	0.641	0.389	2.17	J	µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
sec-Butylbenzene	ND	0.386	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Styrene	ND	0.278	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
tert-Butylbenzene	ND	0.318	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,1,1,2-Tetrachloroethane	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,1,2,2-Tetrachloroethane	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-24 (15-16')

Project: SWMU 10

Collection Date: 9/19/2016 1:40:00 PM

Lab ID: 1609B57-006

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Tetrachloroethene (PCE)	ND	0.286	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
trans-1,2-DCE	ND	0.220	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
trans-1,3-Dichloropropene	ND	0.263	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,2,3-Trichlorobenzene	ND	0.526	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,2,4-Trichlorobenzene	ND	0.659	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,1,1-Trichloroethane	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,1,2-Trichloroethane	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Trichloroethene (TCE)	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Trichlorofluoromethane	ND	0.273	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
1,2,3-Trichloropropane	ND	2.17	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Vinyl chloride	ND	0.572	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Xylenes, Total	5.28	0.867	2.17		µg/Kg-dry	1	9/21/2016 3:46:00 PM	27629
Surr: 1,2-Dichloroethane-d4	118	0	70-130		%Rec	1	9/21/2016 3:46:00 PM	27629
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	9/21/2016 3:46:00 PM	27629
Surr: Dibromofluoromethane	113	0	70-130		%Rec	1	9/21/2016 3:46:00 PM	27629
Surr: Toluene-d8	98.1	0	70-130		%Rec	1	9/21/2016 3:46:00 PM	27629
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG	
Gasoline Range Organics (GRO)	ND	0.57	3.8		mg/Kg-dr	1	9/23/2016 1:43:29 PM	R37464
Surr: BFB	101	0	70-130		%Rec	1	9/23/2016 1:43:29 PM	R37464

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Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-25 (2-2.5')

Project: SWMU 10

Collection Date: 9/19/2016 3:45:00 PM

Lab ID: 1609B57-007

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM	
Diesel Range Organics (DRO)	790	2.1	11		mg/Kg-dr	1	9/23/2016 12:27:56 PM	27652
Motor Oil Range Organics (MRO)	100	56	56		mg/Kg-dr	1	9/23/2016 12:27:56 PM	27652
Surr: DNOP	99.6	0	70-130		%Rec	1	9/23/2016 12:27:56 PM	27652
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	13	1.0	1.0		wt%	1	9/27/2016	R37517
EPA METHOD 7471: MERCURY							Analyst: pmf	
Mercury	0.0031	0.00065	0.038	J	mg/Kg-dr	1	9/27/2016 10:51:45 AM	27711
EPA METHOD 6010B: SOIL METALS							Analyst: MED	
Antimony	ND	1.2	2.9		mg/Kg-dr	1	9/28/2016 4:28:40 PM	27709
Arsenic	ND	1.0	2.9		mg/Kg-dr	1	9/28/2016 4:28:40 PM	27709
Barium	96	0.082	0.12		mg/Kg-dr	1	9/28/2016 4:28:40 PM	27709
Beryllium	0.58	0.040	0.17		mg/Kg-dr	1	9/28/2016 4:28:40 PM	27709
Cadmium	ND	0.073	0.12		mg/Kg-dr	1	9/28/2016 4:28:40 PM	27709
Chromium	7.2	0.11	0.35		mg/Kg-dr	1	9/28/2016 4:28:40 PM	27709
Cobalt	3.9	0.13	0.35		mg/Kg-dr	1	9/28/2016 11:02:19 PM	27709
Iron	12000	44	140		mg/Kg-dr	50	9/28/2016 11:04:18 PM	27709
Lead	2.1	0.20	0.29		mg/Kg-dr	1	9/28/2016 11:02:19 PM	27709
Manganese	500	0.12	0.23		mg/Kg-dr	2	9/28/2016 5:34:45 PM	27709
Nickel	5.7	0.17	0.58		mg/Kg-dr	1	9/28/2016 4:28:40 PM	27709
Selenium	ND	2.1	2.9		mg/Kg-dr	1	9/28/2016 4:28:40 PM	27709
Silver	ND	0.072	0.29		mg/Kg-dr	1	9/28/2016 4:28:40 PM	27709
Vanadium	15	0.20	2.9		mg/Kg-dr	1	9/28/2016 4:28:40 PM	27709
Zinc	11	0.40	2.9		mg/Kg-dr	1	9/28/2016 11:02:19 PM	27709
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	0.098	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Acenaphthylene	ND	0.093	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Aniline	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Anthracene	ND	0.076	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Azobenzene	ND	0.14	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Benz(a)anthracene	ND	0.098	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Benzo(a)pyrene	ND	0.086	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Benzo(b)fluoranthene	ND	0.10	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Benzo(g,h,i)perylene	ND	0.10	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Benzo(k)fluoranthene	ND	0.10	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Benzoic acid	0.21	0.094	0.57	J	mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Benzyl alcohol	ND	0.089	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Bis(2-chloroethoxy)methane	ND	0.12	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-25 (2-2.5')

Project: SWMU 10

Collection Date: 9/19/2016 3:45:00 PM

Lab ID: 1609B57-007

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Bis(2-chloroethyl)ether	ND	0.084	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Bis(2-chloroisopropyl)ether	ND	0.10	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Bis(2-ethylhexyl)phthalate	0.22	0.093	0.57	J	mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
4-Bromophenyl phenyl ether	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Butyl benzyl phthalate	ND	0.10	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Carbazole	ND	0.077	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
4-Chloro-3-methylphenol	ND	0.14	0.57		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
4-Chloroaniline	ND	0.12	0.57		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
2-Chloronaphthalene	ND	0.090	0.28		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
2-Chlorophenol	ND	0.090	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
4-Chlorophenyl phenyl ether	ND	0.13	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Chrysene	ND	0.097	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Di-n-butyl phthalate	0.35	0.085	0.46	J	mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Di-n-octyl phthalate	ND	0.097	0.46		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Dibenz(a,h)anthracene	ND	0.092	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Dibenzofuran	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
1,2-Dichlorobenzene	ND	0.087	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
1,3-Dichlorobenzene	ND	0.088	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
1,4-Dichlorobenzene	ND	0.096	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
3,3'-Dichlorobenzidine	ND	0.084	0.28		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Diethyl phthalate	0.28	0.12	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
2,4-Dichlorophenol	ND	0.11	0.46		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
2,4-Dimethylphenol	0.17	0.12	0.34	J	mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
4,6-Dinitro-2-methylphenol	ND	0.069	0.46		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
2,4-Dinitrophenol	ND	0.076	0.57		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
2,4-Dinitrotoluene	ND	0.10	0.57		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
2,6-Dinitrotoluene	ND	0.12	0.57		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Fluoranthene	ND	0.066	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Fluorene	0.19	0.10	0.23	J	mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Hexachlorobenzene	ND	0.090	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Hexachlorobutadiene	ND	0.13	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Hexachlorocyclopentadiene	ND	0.13	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Hexachloroethane	ND	0.098	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Indeno(1,2,3-cd)pyrene	ND	0.089	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Isophorone	ND	0.13	0.46		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
1-Methylnaphthalene	0.82	0.11	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
2-Methylnaphthalene	1.4	0.14	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
2-Methylphenol	0.53	0.095	0.46		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-25 (2-2.5')

Project: SWMU 10

Collection Date: 9/19/2016 3:45:00 PM

Lab ID: 1609B57-007

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
3+4-Methylphenol	ND	0.082	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
N-Nitrosodi-n-propylamine	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
N-Nitrosodiphenylamine	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Naphthalene	0.28	0.11	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
2-Nitroaniline	ND	0.12	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
3-Nitroaniline	ND	0.10	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
4-Nitroaniline	ND	0.080	0.46		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
2-Nitrophenol	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
4-Nitrophenol	ND	0.087	0.28		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Pentachlorophenol	ND	0.073	0.46		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Phenanthrene	0.39	0.077	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Phenol	ND	0.086	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Pyrene	ND	0.086	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Pyridine	ND	0.090	0.46		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
2,4,5-Trichlorophenol	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
2,4,6-Trichlorophenol	ND	0.095	0.23		mg/Kg-dr	1	9/29/2016 4:59:58 PM	27700
Surr: 2-Fluorophenol	75.1	0	35-97.9		%Rec	1	9/29/2016 4:59:58 PM	27700
Surr: Phenol-d5	80.1	0	37.3-105		%Rec	1	9/29/2016 4:59:58 PM	27700
Surr: 2,4,6-Tribromophenol	76.0	0	35.6-118		%Rec	1	9/29/2016 4:59:58 PM	27700
Surr: Nitrobenzene-d5	63.8		41.2-107		%Rec	1	9/29/2016 4:59:58 PM	27700
Surr: 2-Fluorobiphenyl	73.7		41.9-119		%Rec	1	9/29/2016 4:59:58 PM	27700
Surr: 4-Terphenyl-d14	66.6		15-132		%Rec	1	9/29/2016 4:59:58 PM	27700
EPA METHOD 8260B: VOLATILES							Analyst: AG	
Benzene	ND	0.85	1.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Toluene	0.29	0.13	2.1	J	mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Ethylbenzene	1.0	0.17	2.1	J	mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Methyl tert-butyl ether (MTBE)	ND	0.67	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,2,4-Trimethylbenzene	5.8	0.16	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,3,5-Trimethylbenzene	2.6	0.15	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,2-Dichloroethane (EDC)	ND	0.56	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,2-Dibromoethane (EDB)	ND	0.15	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Naphthalene	3.8	0.33	4.3	J	mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1-Methylnaphthalene	13	0.47	8.5		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
2-Methylnaphthalene	16	0.46	8.5		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Acetone	ND	2.8	32		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Bromobenzene	ND	0.17	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Bromodichloromethane	ND	0.12	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515

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	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-25 (2-2.5')

Project: SWMU 10

Collection Date: 9/19/2016 3:45:00 PM

Lab ID: 1609B57-007

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: AG	
Bromoform	ND	0.26	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Bromomethane	ND	0.79	6.4		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
2-Butanone	ND	1.2	21		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Carbon disulfide	ND	0.70	21		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Carbon tetrachloride	ND	0.14	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Chlorobenzene	ND	0.17	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Chloroethane	ND	0.43	4.3		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Chloroform	ND	0.16	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Chloromethane	ND	0.19	6.4		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
2-Chlorotoluene	ND	0.16	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
4-Chlorotoluene	ND	0.19	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
cis-1,2-DCE	ND	0.12	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
cis-1,3-Dichloropropene	ND	0.20	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,2-Dibromo-3-chloropropane	ND	0.65	4.3		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Dibromochloromethane	ND	0.19	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Dibromomethane	ND	0.18	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,2-Dichlorobenzene	ND	0.19	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,3-Dichlorobenzene	ND	0.17	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,4-Dichlorobenzene	ND	0.26	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Dichlorodifluoromethane	ND	0.66	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,1-Dichloroethane	ND	0.12	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,1-Dichloroethene	ND	0.70	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,2-Dichloropropane	ND	0.18	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,3-Dichloropropane	ND	0.24	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
2,2-Dichloropropane	ND	0.12	4.3		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,1-Dichloropropene	ND	0.17	4.3		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Hexachlorobutadiene	ND	0.26	4.3		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
2-Hexanone	ND	1.2	21		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Isopropylbenzene	0.54	0.18	2.1	J	mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
4-Isopropyltoluene	0.61	0.19	2.1	J	mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
4-Methyl-2-pentanone	ND	0.62	21		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Methylene chloride	ND	0.62	6.4		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
n-Butylbenzene	0.95	0.19	6.4	J	mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
n-Propylbenzene	0.93	0.16	2.1	J	mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
sec-Butylbenzene	0.74	0.30	2.1	J	mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Styrene	ND	0.19	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
tert-Butylbenzene	ND	0.18	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,1,1,2-Tetrachloroethane	ND	0.20	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,1,2,2-Tetrachloroethane	ND	0.35	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-25 (2-2.5')

Project: SWMU 10

Collection Date: 9/19/2016 3:45:00 PM

Lab ID: 1609B57-007

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: AG	
Tetrachloroethene (PCE)	ND	0.18	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
trans-1,2-DCE	ND	0.60	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
trans-1,3-Dichloropropene	ND	0.31	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,2,3-Trichlorobenzene	ND	0.32	4.3		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,2,4-Trichlorobenzene	ND	0.23	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,1,1-Trichloroethane	ND	0.13	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,1,2-Trichloroethane	ND	0.25	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Trichloroethene (TCE)	ND	0.23	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Trichlorofluoromethane	ND	0.16	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
1,2,3-Trichloropropane	ND	0.37	4.3		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Vinyl chloride	ND	0.17	2.1		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Xylenes, Total	10	0.40	4.3		mg/Kg-dr	50	9/27/2016 9:09:50 PM	S37515
Surr: Dibromofluoromethane	104		70-130		%Rec	50	9/27/2016 9:09:50 PM	S37515
Surr: 1,2-Dichloroethane-d4	104		70-130		%Rec	50	9/27/2016 9:09:50 PM	S37515
Surr: Toluene-d8	90.2		70-130		%Rec	50	9/27/2016 9:09:50 PM	S37515
Surr: 4-Bromofluorobenzene	83.5		70-130		%Rec	50	9/27/2016 9:09:50 PM	S37515
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG	
Gasoline Range Organics (GRO)	730	32	210		mg/Kg-dr	50	9/29/2016 11:03:07 AM	G37576
Surr: BFB	106	0	70-130		%Rec	50	9/29/2016 11:03:07 AM	G37576

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-25 (10-12')

Project: SWMU 10

Collection Date: 9/19/2016 4:00:00 PM

Lab ID: 1609B57-008

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM	
Diesel Range Organics (DRO)	96	2.1	11		mg/Kg-dr	1	9/23/2016 12:49:36 PM	27652
Motor Oil Range Organics (MRO)	ND	57	57		mg/Kg-dr	1	9/23/2016 12:49:36 PM	27652
Surr: DNOP	96.3	0	70-130		%Rec	1	9/23/2016 12:49:36 PM	27652
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	18	1.0	1.0		wt%	1	9/27/2016	R37517
EPA METHOD 7471: MERCURY							Analyst: pmf	
Mercury	0.0014	0.00069	0.040	J	mg/Kg-dr	1	9/27/2016 10:53:34 AM	27711
EPA METHOD 6010B: SOIL METALS							Analyst: MED	
Antimony	ND	2.5	6.2		mg/Kg-dr	2	9/28/2016 5:36:13 PM	27709
Arsenic	ND	2.2	6.2		mg/Kg-dr	2	9/28/2016 5:36:13 PM	27709
Barium	190	0.18	0.25		mg/Kg-dr	2	9/28/2016 5:36:13 PM	27709
Beryllium	1.4	0.086	0.37		mg/Kg-dr	2	9/28/2016 5:36:13 PM	27709
Cadmium	ND	0.16	0.25		mg/Kg-dr	2	9/28/2016 5:36:13 PM	27709
Chromium	16	0.23	0.74		mg/Kg-dr	2	9/28/2016 5:36:13 PM	27709
Cobalt	7.6	0.28	0.74		mg/Kg-dr	2	9/28/2016 11:05:46 PM	27709
Iron	23000	93	310		mg/Kg-dr	100	9/28/2016 11:07:43 PM	27709
Lead	2.9	0.43	0.62		mg/Kg-dr	2	9/28/2016 11:05:46 PM	27709
Manganese	300	0.13	0.25		mg/Kg-dr	2	9/28/2016 5:36:13 PM	27709
Nickel	14	0.38	1.2		mg/Kg-dr	2	9/28/2016 5:36:13 PM	27709
Selenium	ND	4.5	6.2		mg/Kg-dr	2	9/28/2016 5:36:13 PM	27709
Silver	ND	0.16	0.62		mg/Kg-dr	2	9/28/2016 5:36:13 PM	27709
Vanadium	25	0.44	6.2		mg/Kg-dr	2	9/28/2016 5:36:13 PM	27709
Zinc	26	0.86	6.2		mg/Kg-dr	2	9/28/2016 11:05:46 PM	27709
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	0.10	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Acenaphthylene	ND	0.097	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Aniline	ND	0.11	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Anthracene	ND	0.079	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Azobenzene	ND	0.15	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Benz(a)anthracene	ND	0.10	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Benzo(a)pyrene	ND	0.091	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Benzo(g,h,i)perylene	ND	0.11	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Benzo(k)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Benzoic acid	0.21	0.099	0.60	J	mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Benzyl alcohol	ND	0.094	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Bis(2-chloroethoxy)methane	ND	0.13	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700

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Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-25 (10-12')

Project: SWMU 10

Collection Date: 9/19/2016 4:00:00 PM

Lab ID: 1609B57-008

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Bis(2-chloroethyl)ether	ND	0.088	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Bis(2-chloroisopropyl)ether	ND	0.11	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Bis(2-ethylhexyl)phthalate	0.16	0.097	0.60	J	mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
4-Bromophenyl phenyl ether	ND	0.11	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Butyl benzyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Carbazole	ND	0.081	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
4-Chloro-3-methylphenol	ND	0.14	0.60		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
4-Chloroaniline	ND	0.13	0.60		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
2-Chloronaphthalene	ND	0.094	0.30		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
2-Chlorophenol	ND	0.094	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
4-Chlorophenyl phenyl ether	ND	0.14	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Chrysene	ND	0.10	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Di-n-butyl phthalate	0.22	0.089	0.48	J	mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Di-n-octyl phthalate	ND	0.10	0.48		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Dibenz(a,h)anthracene	ND	0.097	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Dibenzofuran	ND	0.12	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
1,2-Dichlorobenzene	ND	0.092	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
1,3-Dichlorobenzene	ND	0.092	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
1,4-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
3,3'-Dichlorobenzidine	ND	0.088	0.30		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Diethyl phthalate	0.21	0.12	0.24	J	mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Dimethyl phthalate	ND	0.12	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
2,4-Dichlorophenol	ND	0.11	0.48		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
2,4-Dimethylphenol	ND	0.13	0.36		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
4,6-Dinitro-2-methylphenol	ND	0.072	0.48		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
2,4-Dinitrophenol	ND	0.079	0.60		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
2,4-Dinitrotoluene	ND	0.11	0.60		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
2,6-Dinitrotoluene	ND	0.13	0.60		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Fluoranthene	ND	0.069	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Fluorene	0.15	0.11	0.24	J	mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Hexachlorobenzene	ND	0.094	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Hexachlorobutadiene	ND	0.13	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Hexachlorocyclopentadiene	ND	0.14	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Hexachloroethane	ND	0.10	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Indeno(1,2,3-cd)pyrene	ND	0.093	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Isophorone	ND	0.13	0.48		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
1-Methylnaphthalene	0.76	0.12	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
2-Methylnaphthalene	1.3	0.14	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
2-Methylphenol	0.17	0.10	0.48	J	mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-25 (10-12')

Project: SWMU 10

Collection Date: 9/19/2016 4:00:00 PM

Lab ID: 1609B57-008

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
3+4-Methylphenol	ND	0.087	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
N-Nitrosodi-n-propylamine	ND	0.11	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
N-Nitrosodiphenylamine	ND	0.12	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Naphthalene	0.28	0.11	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
4-Nitroaniline	ND	0.084	0.48		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Nitrobenzene	ND	0.12	0.48		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
2-Nitrophenol	ND	0.12	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
4-Nitrophenol	ND	0.091	0.30		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Pentachlorophenol	ND	0.077	0.48		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Phenanthrene	0.29	0.081	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Phenol	ND	0.090	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Pyrene	ND	0.090	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Pyridine	ND	0.095	0.48		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
1,2,4-Trichlorobenzene	ND	0.13	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
2,4,5-Trichlorophenol	ND	0.12	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
2,4,6-Trichlorophenol	ND	0.099	0.24		mg/Kg-dr	1	9/29/2016 5:28:00 PM	27700
Surr: 2-Fluorophenol	52.2	0	35-97.9		%Rec	1	9/29/2016 5:28:00 PM	27700
Surr: Phenol-d5	58.6	0	37.3-105		%Rec	1	9/29/2016 5:28:00 PM	27700
Surr: 2,4,6-Tribromophenol	73.5	0	35.6-118		%Rec	1	9/29/2016 5:28:00 PM	27700
Surr: Nitrobenzene-d5	49.2		41.2-107		%Rec	1	9/29/2016 5:28:00 PM	27700
Surr: 2-Fluorobiphenyl	62.1		41.9-119		%Rec	1	9/29/2016 5:28:00 PM	27700
Surr: 4-Terphenyl-d14	58.3		15-132		%Rec	1	9/29/2016 5:28:00 PM	27700
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Benzene	26.6	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Toluene	3.13	0.195	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Ethylbenzene	14.1	0.217	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Methyl tert-butyl ether (MTBE)	0.944	0.271	1.61	J	µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,2,4-Trimethylbenzene	14.6	0.274	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,3,5-Trimethylbenzene	4.60	0.266	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,2-Dichloroethane (EDC)	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,2-Dibromoethane (EDB)	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Naphthalene	6.28	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1-Methylnaphthalene	9.93	0.183	3.23		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
2-Methylnaphthalene	8.58	0.425	3.23		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Acetone	8.75	0.478	8.07		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Bromobenzene	ND	0.164	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Bromodichloromethane	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629

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

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	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-25 (10-12')

Project: SWMU 10

Collection Date: 9/19/2016 4:00:00 PM

Lab ID: 1609B57-008

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Bromoform	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Bromomethane	ND	0.291	2.42		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
2-Butanone	3.33	0.582	8.07	J	µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Carbon disulfide	ND	0.597	8.07		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Carbon tetrachloride	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Chlorobenzene	ND	0.185	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Chloroethane	ND	0.298	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Chloroform	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Chloromethane	ND	0.409	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
2-Chlorotoluene	ND	0.275	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
4-Chlorotoluene	ND	0.268	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
cis-1,2-DCE	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
cis-1,3-Dichloropropene	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,2-Dibromo-3-chloropropane	ND	0.172	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Dibromochloromethane	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Dibromomethane	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,2-Dichlorobenzene	ND	0.235	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,3-Dichlorobenzene	ND	0.298	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,4-Dichlorobenzene	ND	0.302	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Dichlorodifluoromethane	ND	0.942	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,1-Dichloroethane	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,1-Dichloroethene	ND	0.264	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,2-Dichloropropane	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,3-Dichloropropane	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
2,2-Dichloropropane	ND	0.204	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,1-Dichloropropene	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Hexachlorobutadiene	ND	0.368	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
2-Hexanone	ND	0.402	8.07		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Isopropylbenzene	1.86	0.203	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
4-Isopropyltoluene	0.613	0.303	1.61	J	µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
4-Methyl-2-pentanone	ND	3.23	8.07		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Methylene chloride	ND	1.61	2.42		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
n-Butylbenzene	0.759	0.393	1.61	J	µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
n-Propylbenzene	2.87	0.289	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
sec-Butylbenzene	0.621	0.287	1.61	J	µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Styrene	ND	0.206	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
tert-Butylbenzene	ND	0.236	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,1,1,2-Tetrachloroethane	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,1,2,2-Tetrachloroethane	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-25 (10-12')

Project: SWMU 10

Collection Date: 9/19/2016 4:00:00 PM

Lab ID: 1609B57-008

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Tetrachloroethene (PCE)	ND	0.212	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
trans-1,2-DCE	ND	0.163	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
trans-1,3-Dichloropropene	ND	0.195	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,2,3-Trichlorobenzene	ND	0.391	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,2,4-Trichlorobenzene	ND	0.489	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,1,1-Trichloroethane	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,1,2-Trichloroethane	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Trichloroethene (TCE)	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Trichlorofluoromethane	ND	0.203	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
1,2,3-Trichloropropane	ND	1.61	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Vinyl chloride	ND	0.425	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Xylenes, Total	31.7	0.643	1.61		µg/Kg-dry	1	9/21/2016 4:11:00 PM	27629
Surr: 1,2-Dichloroethane-d4	118	0	70-130		%Rec	1	9/21/2016 4:11:00 PM	27629
Surr: 4-Bromofluorobenzene	106	0	70-130		%Rec	1	9/21/2016 4:11:00 PM	27629
Surr: Dibromofluoromethane	110	0	70-130		%Rec	1	9/21/2016 4:11:00 PM	27629
Surr: Toluene-d8	99.6	0	70-130		%Rec	1	9/21/2016 4:11:00 PM	27629
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG	
Gasoline Range Organics (GRO)	15	0.50	3.3		mg/Kg-dr	1	9/23/2016 2:41:09 PM	R37464
Surr: BFB	101	0	70-130		%Rec	1	9/23/2016 2:41:09 PM	R37464

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-25 (16.5-18')

Project: SWMU 10

Collection Date: 9/19/2016 4:15:00 PM

Lab ID: 1609B57-009

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM	
Diesel Range Organics (DRO)	4.5	2.1	11	J	mg/Kg-dr	1	9/23/2016 1:11:16 PM	27652
Motor Oil Range Organics (MRO)	ND	56	56		mg/Kg-dr	1	9/23/2016 1:11:16 PM	27652
Surr: DNOP	85.0	0	70-130		%Rec	1	9/23/2016 1:11:16 PM	27652
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	12	1.0	1.0		wt%	1	9/27/2016	R37517
EPA METHOD 7471: MERCURY							Analyst: pmf	
Mercury	0.0014	0.00065	0.038	J	mg/Kg-dr	1	9/27/2016 10:55:24 AM	27711
EPA METHOD 6010B: SOIL METALS							Analyst: MED	
Antimony	1.6	1.2	2.9	J	mg/Kg-dr	1	9/28/2016 4:31:38 PM	27709
Arsenic	ND	1.0	2.9		mg/Kg-dr	1	9/28/2016 4:31:38 PM	27709
Barium	460	0.16	0.23		mg/Kg-dr	2	9/28/2016 5:37:34 PM	27709
Beryllium	0.86	0.040	0.17		mg/Kg-dr	1	9/28/2016 4:31:38 PM	27709
Cadmium	ND	0.073	0.12		mg/Kg-dr	1	9/28/2016 4:31:38 PM	27709
Chromium	15	0.11	0.35		mg/Kg-dr	1	9/28/2016 4:31:38 PM	27709
Cobalt	9.5	0.13	0.35		mg/Kg-dr	1	9/28/2016 11:09:12 PM	27709
Iron	18000	87	290		mg/Kg-dr	100	9/28/2016 11:12:35 PM	27709
Lead	ND	0.20	0.29		mg/Kg-dr	1	9/28/2016 11:09:12 PM	27709
Manganese	1100	0.62	1.2		mg/Kg-dr	10	9/28/2016 11:10:58 PM	27709
Nickel	15	0.17	0.58		mg/Kg-dr	1	9/28/2016 4:31:38 PM	27709
Selenium	ND	2.1	2.9		mg/Kg-dr	1	9/28/2016 4:31:38 PM	27709
Silver	ND	0.072	0.29		mg/Kg-dr	1	9/28/2016 4:31:38 PM	27709
Vanadium	18	0.20	2.9		mg/Kg-dr	1	9/28/2016 4:31:38 PM	27709
Zinc	27	0.40	2.9		mg/Kg-dr	1	9/28/2016 11:09:12 PM	27709
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	0.098	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Acenaphthylene	ND	0.093	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Aniline	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Anthracene	ND	0.076	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Azobenzene	ND	0.14	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Benz(a)anthracene	ND	0.098	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Benzo(a)pyrene	ND	0.086	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Benzo(b)fluoranthene	ND	0.10	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Benzo(g,h,i)perylene	ND	0.10	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Benzo(k)fluoranthene	ND	0.10	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Benzoic acid	ND	0.094	0.57		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Benzyl alcohol	ND	0.089	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Bis(2-chloroethoxy)methane	ND	0.12	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-25 (16.5-18')

Project: SWMU 10

Collection Date: 9/19/2016 4:15:00 PM

Lab ID: 1609B57-009

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Bis(2-chloroethyl)ether	ND	0.084	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Bis(2-chloroisopropyl)ether	ND	0.10	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Bis(2-ethylhexyl)phthalate	0.17	0.093	0.57	J	mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
4-Bromophenyl phenyl ether	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Butyl benzyl phthalate	ND	0.10	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Carbazole	ND	0.077	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
4-Chloro-3-methylphenol	ND	0.14	0.57		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
4-Chloroaniline	ND	0.12	0.57		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
2-Chloronaphthalene	ND	0.090	0.28		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
2-Chlorophenol	ND	0.090	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
4-Chlorophenyl phenyl ether	ND	0.13	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Chrysene	ND	0.097	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Di-n-butyl phthalate	0.35	0.085	0.46	J	mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Di-n-octyl phthalate	ND	0.097	0.46		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Dibenz(a,h)anthracene	ND	0.092	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Dibenzofuran	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
1,2-Dichlorobenzene	ND	0.087	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
1,3-Dichlorobenzene	ND	0.088	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
1,4-Dichlorobenzene	ND	0.096	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
3,3'-Dichlorobenzidine	ND	0.084	0.28		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Diethyl phthalate	0.24	0.12	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
2,4-Dichlorophenol	ND	0.11	0.46		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
2,4-Dimethylphenol	ND	0.12	0.34		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
4,6-Dinitro-2-methylphenol	ND	0.069	0.46		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
2,4-Dinitrophenol	ND	0.076	0.57		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
2,4-Dinitrotoluene	ND	0.10	0.57		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
2,6-Dinitrotoluene	ND	0.12	0.57		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Fluoranthene	ND	0.066	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Fluorene	ND	0.10	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Hexachlorobenzene	ND	0.090	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Hexachlorobutadiene	ND	0.13	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Hexachlorocyclopentadiene	ND	0.13	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Hexachloroethane	ND	0.098	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Indeno(1,2,3-cd)pyrene	ND	0.089	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Isophorone	ND	0.13	0.46		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
2-Methylnaphthalene	ND	0.14	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
2-Methylphenol	ND	0.095	0.46		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-25 (16.5-18')

Project: SWMU 10

Collection Date: 9/19/2016 4:15:00 PM

Lab ID: 1609B57-009

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
3+4-Methylphenol	ND	0.082	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
N-Nitrosodi-n-propylamine	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
N-Nitrosodiphenylamine	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
2-Nitroaniline	ND	0.12	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
3-Nitroaniline	ND	0.10	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
4-Nitroaniline	ND	0.080	0.46		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
2-Nitrophenol	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
4-Nitrophenol	ND	0.087	0.28		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Pentachlorophenol	ND	0.073	0.46		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Phenanthrene	ND	0.077	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Phenol	ND	0.086	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Pyrene	ND	0.086	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Pyridine	ND	0.090	0.46		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
2,4,5-Trichlorophenol	ND	0.11	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
2,4,6-Trichlorophenol	ND	0.094	0.23		mg/Kg-dr	1	9/29/2016 5:55:59 PM	27700
Surr: 2-Fluorophenol	74.9	0	35-97.9		%Rec	1	9/29/2016 5:55:59 PM	27700
Surr: Phenol-d5	74.2	0	37.3-105		%Rec	1	9/29/2016 5:55:59 PM	27700
Surr: 2,4,6-Tribromophenol	73.2	0	35.6-118		%Rec	1	9/29/2016 5:55:59 PM	27700
Surr: Nitrobenzene-d5	65.3		41.2-107		%Rec	1	9/29/2016 5:55:59 PM	27700
Surr: 2-Fluorobiphenyl	64.9		41.9-119		%Rec	1	9/29/2016 5:55:59 PM	27700
Surr: 4-Terphenyl-d14	63.1		15-132		%Rec	1	9/29/2016 5:55:59 PM	27700
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Benzene	9.53	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Toluene	6.89	0.230	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Ethylbenzene	1.80	0.256	1.90	J	µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Methyl tert-butyl ether (MTBE)	ND	0.320	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,2,4-Trimethylbenzene	1.50	0.323	1.90	J	µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,3,5-Trimethylbenzene	1.06	0.314	1.90	J	µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,2-Dichloroethane (EDC)	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,2-Dibromoethane (EDB)	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Naphthalene	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1-Methylnaphthalene	0.628	0.216	3.81	J	µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
2-Methylnaphthalene	0.761	0.501	3.81	J	µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Acetone	4.29	0.563	9.52	J	µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Bromobenzene	ND	0.194	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Bromodichloromethane	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629

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	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-25 (16.5-18')

Project: SWMU 10

Collection Date: 9/19/2016 4:15:00 PM

Lab ID: 1609B57-009

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Bromoform	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Bromomethane	ND	0.343	2.85		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
2-Butanone	3.59	0.686	9.52	J	µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Carbon disulfide	ND	0.704	9.52		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Carbon tetrachloride	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Chlorobenzene	ND	0.218	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Chloroethane	ND	0.351	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Chloroform	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Chloromethane	ND	0.482	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
2-Chlorotoluene	ND	0.324	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
4-Chlorotoluene	ND	0.316	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
cis-1,2-DCE	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
cis-1,3-Dichloropropene	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,2-Dibromo-3-chloropropane	ND	0.203	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Dibromochloromethane	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Dibromomethane	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,2-Dichlorobenzene	ND	0.277	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,3-Dichlorobenzene	ND	0.352	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,4-Dichlorobenzene	ND	0.356	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Dichlorodifluoromethane	ND	1.11	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,1-Dichloroethane	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,1-Dichloroethene	ND	0.312	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,2-Dichloropropane	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,3-Dichloropropane	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
2,2-Dichloropropane	ND	0.240	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,1-Dichloropropene	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Hexachlorobutadiene	ND	0.434	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
2-Hexanone	ND	0.474	9.52		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Isopropylbenzene	0.438	0.240	1.90	J	µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
4-Isopropyltoluene	ND	0.357	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
4-Methyl-2-pentanone	ND	3.81	9.52		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Methylene chloride	ND	1.90	2.85		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
n-Butylbenzene	ND	0.463	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
n-Propylbenzene	0.581	0.341	1.90	J	µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
sec-Butylbenzene	ND	0.338	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Styrene	ND	0.243	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
tert-Butylbenzene	ND	0.278	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,1,1,2-Tetrachloroethane	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,1,2,2-Tetrachloroethane	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629

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
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	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-25 (16.5-18')

Project: SWMU 10

Collection Date: 9/19/2016 4:15:00 PM

Lab ID: 1609B57-009

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Tetrachloroethene (PCE)	ND	0.250	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
trans-1,2-DCE	ND	0.192	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
trans-1,3-Dichloropropene	ND	0.230	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,2,3-Trichlorobenzene	ND	0.461	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,2,4-Trichlorobenzene	ND	0.577	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,1,1-Trichloroethane	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,1,2-Trichloroethane	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Trichloroethene (TCE)	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Trichlorofluoromethane	ND	0.239	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
1,2,3-Trichloropropane	ND	1.90	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Vinyl chloride	ND	0.501	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Xylenes, Total	5.13	0.759	1.90		µg/Kg-dry	1	9/21/2016 4:36:00 PM	27629
Surr: 1,2-Dichloroethane-d4	120	0	70-130		%Rec	1	9/21/2016 4:36:00 PM	27629
Surr: 4-Bromofluorobenzene	104	0	70-130		%Rec	1	9/21/2016 4:36:00 PM	27629
Surr: Dibromofluoromethane	113	0	70-130		%Rec	1	9/21/2016 4:36:00 PM	27629
Surr: Toluene-d8	97.3	0	70-130		%Rec	1	9/21/2016 4:36:00 PM	27629
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG	
Gasoline Range Organics (GRO)	1.5	0.57	3.8	J	mg/Kg-dr	1	9/23/2016 3:09:54 PM	R37464
Surr: BFB	105	0	70-130		%Rec	1	9/23/2016 3:09:54 PM	R37464

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
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	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 DUP01

Project: SWMU 10

Collection Date: 9/19/2016

Lab ID: 1609B57-010

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM	
Diesel Range Organics (DRO)	3400	21	110		mg/Kg-dr	10	9/23/2016 10:39:42 AM	27652
Motor Oil Range Organics (MRO)	ND	560	560		mg/Kg-dr	10	9/23/2016 10:39:42 AM	27652
Surr: DNOP	0	0	70-130	S	%Rec	10	9/23/2016 10:39:42 AM	27652
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	10	1.0	1.0		wt%	1	9/27/2016	R37517
EPA METHOD 7471: MERCURY							Analyst: pmf	
Mercury	0.0053	0.00063	0.037	J	mg/Kg-dr	1	9/27/2016 10:57:15 AM	27711
EPA METHOD 6010B: SOIL METALS							Analyst: MED	
Antimony	ND	1.1	2.8		mg/Kg-dr	1	9/28/2016 4:33:17 PM	27709
Arsenic	ND	0.99	2.8		mg/Kg-dr	1	9/28/2016 4:33:17 PM	27709
Barium	130	0.080	0.11		mg/Kg-dr	1	9/28/2016 4:33:17 PM	27709
Beryllium	0.69	0.039	0.17		mg/Kg-dr	1	9/28/2016 4:33:17 PM	27709
Cadmium	ND	0.071	0.11		mg/Kg-dr	1	9/28/2016 4:33:17 PM	27709
Chromium	7.7	0.11	0.34		mg/Kg-dr	1	9/28/2016 4:33:17 PM	27709
Cobalt	6.1	0.62	1.7		mg/Kg-dr	5	9/28/2016 11:15:51 PM	27709
Iron	13000	42	140		mg/Kg-dr	50	9/28/2016 11:26:26 PM	27709
Lead	3.4	0.97	1.4		mg/Kg-dr	5	9/28/2016 11:15:51 PM	27709
Manganese	970	0.30	0.56		mg/Kg-dr	5	9/28/2016 11:15:51 PM	27709
Nickel	6.7	0.17	0.56		mg/Kg-dr	1	9/28/2016 4:33:17 PM	27709
Selenium	ND	2.0	2.8		mg/Kg-dr	1	9/28/2016 4:33:17 PM	27709
Silver	ND	0.070	0.28		mg/Kg-dr	1	9/28/2016 4:33:17 PM	27709
Vanadium	17	0.20	2.8		mg/Kg-dr	1	9/28/2016 4:33:17 PM	27709
Zinc	16	1.9	14		mg/Kg-dr	5	9/28/2016 11:15:51 PM	27709
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	0.93	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Acenaphthylene	ND	0.88	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Aniline	ND	1.0	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Anthracene	ND	0.72	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Azobenzene	ND	1.3	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Benz(a)anthracene	ND	0.93	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Benzo(a)pyrene	ND	0.82	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Benzo(b)fluoranthene	ND	0.98	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Benzo(g,h,i)perylene	ND	0.96	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Benzo(k)fluoranthene	ND	0.96	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Benzoic acid	2.7	0.90	5.4	JD	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Benzyl alcohol	ND	0.85	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Bis(2-chloroethoxy)methane	ND	1.2	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 DUP01

Project: SWMU 10

Collection Date: 9/19/2016

Lab ID: 1609B57-010

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Bis(2-chloroethyl)ether	ND	0.80	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Bis(2-chloroisopropyl)ether	ND	0.97	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Bis(2-ethylhexyl)phthalate	ND	0.88	5.4	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
4-Bromophenyl phenyl ether	ND	1.0	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Butyl benzyl phthalate	ND	0.96	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Carbazole	ND	0.73	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
4-Chloro-3-methylphenol	ND	1.3	5.4	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
4-Chloroaniline	ND	1.2	5.4	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
2-Chloronaphthalene	ND	0.85	2.7	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
2-Chlorophenol	ND	0.86	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
4-Chlorophenyl phenyl ether	ND	1.2	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Chrysene	ND	0.92	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Di-n-butyl phthalate	ND	0.81	4.3	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Di-n-octyl phthalate	ND	0.93	4.3	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Dibenz(a,h)anthracene	ND	0.88	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Dibenzofuran	ND	1.1	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
1,2-Dichlorobenzene	ND	0.83	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
1,3-Dichlorobenzene	ND	0.84	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
1,4-Dichlorobenzene	ND	0.92	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
3,3'-Dichlorobenzidine	ND	0.80	2.7	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Diethyl phthalate	ND	1.1	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Dimethyl phthalate	ND	1.1	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
2,4-Dichlorophenol	ND	1.0	4.3	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
2,4-Dimethylphenol	ND	1.2	3.3	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
4,6-Dinitro-2-methylphenol	ND	0.66	4.3	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
2,4-Dinitrophenol	ND	0.72	5.4	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
2,4-Dinitrotoluene	ND	0.97	5.4	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
2,6-Dinitrotoluene	ND	1.1	5.4	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Fluoranthene	ND	0.63	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Fluorene	2.8	0.99	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Hexachlorobenzene	ND	0.86	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Hexachlorobutadiene	ND	1.2	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Hexachlorocyclopentadiene	ND	1.2	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Hexachloroethane	ND	0.93	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Indeno(1,2,3-cd)pyrene	ND	0.85	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Isophorone	ND	1.2	4.3	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
1-Methylnaphthalene	14	1.1	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
2-Methylnaphthalene	24	1.3	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
2-Methylphenol	ND	0.91	4.3	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700

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

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	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 DUP01

Project: SWMU 10

Collection Date: 9/19/2016

Lab ID: 1609B57-010

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
3+4-Methylphenol	ND	0.79	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
N-Nitrosodi-n-propylamine	ND	1.0	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
N-Nitrosodiphenylamine	ND	1.1	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Naphthalene	4.7	1.0	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
2-Nitroaniline	ND	1.2	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
3-Nitroaniline	ND	0.96	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
4-Nitroaniline	ND	0.77	4.3	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Nitrobenzene	ND	1.1	4.3	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
2-Nitrophenol	ND	1.1	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
4-Nitrophenol	ND	0.83	2.7	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Pentachlorophenol	ND	0.70	4.3	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Phenanthrene	5.1	0.74	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Phenol	ND	0.82	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Pyrene	ND	0.82	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Pyridine	ND	0.86	4.3	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
1,2,4-Trichlorobenzene	ND	1.2	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
2,4,5-Trichlorophenol	ND	1.1	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
2,4,6-Trichlorophenol	ND	0.90	2.2	D	mg/Kg-dr	1	9/29/2016 6:24:03 PM	27700
Surr: 2-Fluorophenol	0	0	35-97.9	SD	%Rec	1	9/29/2016 6:24:03 PM	27700
Surr: Phenol-d5	0	0	37.3-105	SD	%Rec	1	9/29/2016 6:24:03 PM	27700
Surr: 2,4,6-Tribromophenol	0	0	35.6-118	SD	%Rec	1	9/29/2016 6:24:03 PM	27700
Surr: Nitrobenzene-d5	0		41.2-107	SD	%Rec	1	9/29/2016 6:24:03 PM	27700
Surr: 2-Fluorobiphenyl	0		41.9-119	SD	%Rec	1	9/29/2016 6:24:03 PM	27700
Surr: 4-Terphenyl-d14	0		15-132	SD	%Rec	1	9/29/2016 6:24:03 PM	27700
EPA METHOD 8260B: VOLATILES							Analyst: AG	
Benzene	ND	0.74	0.93	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Toluene	0.20	0.11	1.9	JD	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Ethylbenzene	0.99	0.15	1.9	JD	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Methyl tert-butyl ether (MTBE)	ND	0.58	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,2,4-Trimethylbenzene	5.8	0.14	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,3,5-Trimethylbenzene	2.5	0.13	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,2-Dichloroethane (EDC)	ND	0.48	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,2-Dibromoethane (EDB)	ND	0.13	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Naphthalene	4.1	0.29	3.7	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1-Methylnaphthalene	13	0.41	7.4	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
2-Methylnaphthalene	18	0.40	7.4	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Acetone	ND	2.4	28	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Bromobenzene	ND	0.15	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Bromodichloromethane	ND	0.11	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 DUP01

Project: SWMU 10

Collection Date: 9/19/2016

Lab ID: 1609B57-010

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: AG	
Bromoform	ND	0.23	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Bromomethane	0.69	0.68	5.6	JD	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
2-Butanone	ND	1.1	19	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Carbon disulfide	ND	0.61	19	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Carbon tetrachloride	ND	0.12	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Chlorobenzene	ND	0.15	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Chloroethane	ND	0.37	3.7	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Chloroform	ND	0.14	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Chloromethane	ND	0.17	5.6	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
2-Chlorotoluene	ND	0.14	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
4-Chlorotoluene	ND	0.16	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
cis-1,2-DCE	ND	0.11	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
cis-1,3-Dichloropropene	ND	0.17	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,2-Dibromo-3-chloropropane	ND	0.57	3.7	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Dibromochloromethane	ND	0.17	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Dibromomethane	ND	0.16	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,2-Dichlorobenzene	ND	0.16	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,3-Dichlorobenzene	ND	0.15	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,4-Dichlorobenzene	ND	0.23	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Dichlorodifluoromethane	ND	0.57	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,1-Dichloroethane	ND	0.10	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,1-Dichloroethene	ND	0.61	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,2-Dichloropropane	ND	0.16	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,3-Dichloropropane	ND	0.21	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
2,2-Dichloropropane	ND	0.11	3.7	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,1-Dichloropropene	ND	0.15	3.7	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Hexachlorobutadiene	ND	0.23	3.7	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
2-Hexanone	ND	1.0	19	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Isopropylbenzene	0.50	0.16	1.9	JD	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
4-Isopropyltoluene	0.59	0.17	1.9	JD	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
4-Methyl-2-pentanone	ND	0.54	19	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Methylene chloride	ND	0.54	5.6	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
n-Butylbenzene	0.87	0.16	5.6	JD	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
n-Propylbenzene	0.98	0.14	1.9	JD	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
sec-Butylbenzene	0.67	0.26	1.9	JD	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Styrene	ND	0.17	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
tert-Butylbenzene	ND	0.15	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,1,1,2-Tetrachloroethane	ND	0.18	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,1,2,2-Tetrachloroethane	ND	0.30	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 DUP01

Project: SWMU 10

Collection Date: 9/19/2016

Lab ID: 1609B57-010

Matrix: SOIL

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: AG	
Tetrachloroethene (PCE)	ND	0.15	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
trans-1,2-DCE	ND	0.52	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
trans-1,3-Dichloropropene	ND	0.27	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,2,3-Trichlorobenzene	ND	0.28	3.7	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,2,4-Trichlorobenzene	ND	0.20	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,1,1-Trichloroethane	ND	0.11	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,1,2-Trichloroethane	ND	0.22	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Trichloroethene (TCE)	ND	0.20	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Trichlorofluoromethane	ND	0.14	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
1,2,3-Trichloropropane	ND	0.32	3.7	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Vinyl chloride	ND	0.15	1.9	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Xylenes, Total	9.9	0.35	3.7	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	S37464
Surr: Dibromofluoromethane	102		70-130	D	%Rec	50	9/23/2016 3:38:43 PM	S37464
Surr: 1,2-Dichloroethane-d4	100		70-130	D	%Rec	50	9/23/2016 3:38:43 PM	S37464
Surr: Toluene-d8	97.0		70-130	D	%Rec	50	9/23/2016 3:38:43 PM	S37464
Surr: 4-Bromofluorobenzene	84.4		70-130	D	%Rec	50	9/23/2016 3:38:43 PM	S37464
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG	
Gasoline Range Organics (GRO)	510	28	190	D	mg/Kg-dr	50	9/23/2016 3:38:43 PM	R37464
Surr: BFB	103	0	70-130	D	%Rec	50	9/23/2016 3:38:43 PM	R37464

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: MeOH Blank

Project: SWMU 10

Collection Date:

Lab ID: 1609B57-011

Matrix: MEOH (SOIL) **Received Date:** 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: AG	
Benzene	ND	0.020	0.025		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Toluene	ND	0.0030	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Ethylbenzene	ND	0.0041	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Methyl tert-butyl ether (MTBE)	ND	0.016	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,2,4-Trimethylbenzene	ND	0.0037	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,3,5-Trimethylbenzene	ND	0.0036	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,2-Dichloroethane (EDC)	ND	0.013	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,2-Dibromoethane (EDB)	ND	0.0036	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Naphthalene	ND	0.0078	0.10		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1-Methylnaphthalene	ND	0.011	0.20		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
2-Methylnaphthalene	ND	0.011	0.20		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Acetone	ND	0.065	0.75		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Bromobenzene	ND	0.0040	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Bromodichloromethane	ND	0.0029	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Bromoform	ND	0.0061	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Bromomethane	0.054	0.018	0.15	J	mg/Kg	1	9/26/2016 1:23:30 PM	S37484
2-Butanone	ND	0.029	0.50		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Carbon disulfide	ND	0.017	0.50		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Carbon tetrachloride	ND	0.0033	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Chlorobenzene	ND	0.0041	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Chloroethane	ND	0.010	0.10		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Chloroform	ND	0.0038	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Chloromethane	ND	0.0044	0.15		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
2-Chlorotoluene	ND	0.0037	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
4-Chlorotoluene	ND	0.0044	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
cis-1,2-DCE	ND	0.0029	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
cis-1,3-Dichloropropene	ND	0.0046	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,2-Dibromo-3-chloropropane	ND	0.015	0.10		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Dibromochloromethane	ND	0.0045	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Dibromomethane	ND	0.0043	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,2-Dichlorobenzene	ND	0.0044	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,3-Dichlorobenzene	ND	0.0041	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,4-Dichlorobenzene	ND	0.0062	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Dichlorodifluoromethane	ND	0.015	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,1-Dichloroethane	ND	0.0027	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,1-Dichloroethene	ND	0.016	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,2-Dichloropropane	ND	0.0042	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,3-Dichloropropane	ND	0.0057	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
2,2-Dichloropropane	ND	0.0029	0.10		mg/Kg	1	9/26/2016 1:23:30 PM	S37484

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: MeOH Blank

Project: SWMU 10

Collection Date:

Lab ID: 1609B57-011

Matrix: MEOH (SOIL) Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: AG	
1,1-Dichloropropene	ND	0.0040	0.10		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Hexachlorobutadiene	ND	0.0061	0.10		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
2-Hexanone	ND	0.027	0.50		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Isopropylbenzene	ND	0.0043	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
4-Isopropyltoluene	ND	0.0045	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
4-Methyl-2-pentanone	ND	0.015	0.50		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Methylene chloride	ND	0.014	0.15		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
n-Butylbenzene	ND	0.0044	0.15		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
n-Propylbenzene	ND	0.0038	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
sec-Butylbenzene	ND	0.0069	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Styrene	ND	0.0045	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
tert-Butylbenzene	ND	0.0041	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,1,1,2-Tetrachloroethane	ND	0.0048	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,1,2,2-Tetrachloroethane	ND	0.0081	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Tetrachloroethene (PCE)	ND	0.0041	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
trans-1,2-DCE	ND	0.014	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
trans-1,3-Dichloropropene	ND	0.0073	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,2,3-Trichlorobenzene	ND	0.0075	0.10		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,2,4-Trichlorobenzene	ND	0.0053	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,1,1-Trichloroethane	ND	0.0031	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,1,2-Trichloroethane	ND	0.0059	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Trichloroethene (TCE)	ND	0.0054	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Trichlorofluoromethane	ND	0.0037	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
1,2,3-Trichloropropane	ND	0.0086	0.10		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Vinyl chloride	ND	0.0041	0.050		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Xylenes, Total	ND	0.0095	0.10		mg/Kg	1	9/26/2016 1:23:30 PM	S37484
Surr: Dibromofluoromethane	113		70-130		%Rec	1	9/26/2016 1:23:30 PM	S37484
Surr: 1,2-Dichloroethane-d4	103		70-130		%Rec	1	9/26/2016 1:23:30 PM	S37484
Surr: Toluene-d8	92.3		70-130		%Rec	1	9/26/2016 1:23:30 PM	S37484
Surr: 4-Bromofluorobenzene	92.6		70-130		%Rec	1	9/26/2016 1:23:30 PM	S37484

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: EB091916

Project: SWMU 10

Collection Date: 9/19/2016 4:45:00 PM

Lab ID: 1609B57-012

Matrix: AQUEOUS

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: TOM	
Diesel Range Organics (DRO)	ND	0.69	1.0		mg/L	1	9/26/2016 12:05:18 PM	27667
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	9/26/2016 12:05:18 PM	27667
Surr: DNOP	112	0	77.1-144		%Rec	1	9/26/2016 12:05:18 PM	27667
EPA METHOD 300.0: ANIONS							Analyst: MRA	
Fluoride	ND	0.050	0.10		mg/L	1	9/21/2016 7:36:29 PM	R37390
Chloride	0.11	0.051	0.50	J	mg/L	1	9/21/2016 7:36:29 PM	R37390
Sulfate	ND	0.14	0.50		mg/L	1	9/21/2016 7:36:29 PM	R37390
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS	
Barium	ND	0.0013	0.0020		mg/L	1	9/29/2016 9:56:42 AM	B37552
Beryllium	ND	0.00031	0.0020		mg/L	1	9/29/2016 9:56:42 AM	B37552
Cadmium	ND	0.00075	0.0020		mg/L	1	9/29/2016 9:56:42 AM	B37552
Chromium	ND	0.0018	0.0060		mg/L	1	9/29/2016 9:56:42 AM	B37552
Cobalt	0.0017	0.00074	0.0060	J	mg/L	1	9/29/2016 9:56:42 AM	B37552
Iron	ND	0.020	0.020		mg/L	1	9/29/2016 9:56:42 AM	B37552
Manganese	ND	0.00032	0.0020		mg/L	1	9/29/2016 9:56:42 AM	B37552
Nickel	ND	0.0024	0.010		mg/L	1	9/29/2016 9:56:42 AM	B37552
Silver	ND	0.0028	0.0050		mg/L	1	9/29/2016 9:56:42 AM	B37552
Vanadium	ND	0.0013	0.050		mg/L	1	9/29/2016 9:56:42 AM	B37552
Zinc	ND	0.0028	0.010		mg/L	1	9/29/2016 9:56:42 AM	B37552
EPA METHOD 200.7: METALS							Analyst: ELS	
Barium	ND	0.0013	0.0020		mg/L	1	9/29/2016 8:43:04 AM	C37552
Beryllium	ND	0.00036	0.0020		mg/L	1	9/29/2016 8:43:04 AM	C37552
Cadmium	ND	0.0015	0.0020		mg/L	1	9/29/2016 8:43:04 AM	C37552
Chromium	ND	0.0027	0.0060		mg/L	1	9/29/2016 8:43:04 AM	C37552
Cobalt	ND	0.0017	0.0060		mg/L	1	9/29/2016 8:43:04 AM	C37552
Iron	ND	0.020	0.020		mg/L	1	9/29/2016 8:43:04 AM	C37552
Manganese	ND	0.00032	0.0020		mg/L	1	9/29/2016 8:43:04 AM	C37552
Nickel	ND	0.0031	0.010		mg/L	1	9/29/2016 8:43:04 AM	C37552
Silver	ND	0.0028	0.0050		mg/L	1	9/29/2016 8:43:04 AM	C37552
Vanadium	ND	0.0013	0.050		mg/L	1	9/29/2016 8:43:04 AM	C37552
Zinc	ND	0.0027	0.010		mg/L	1	9/29/2016 8:43:04 AM	C37552
EPA 200.8: DISSOLVED METALS							Analyst: JLF	
Antimony	ND	0.00047	0.0010		mg/L	1	9/22/2016 10:18:05 PM	B37425
Arsenic	ND	0.00014	0.0010		mg/L	1	9/22/2016 10:18:05 PM	B37425
Lead	ND	0.00017	0.00050		mg/L	1	9/22/2016 10:18:05 PM	B37425
Selenium	ND	0.00021	0.0010		mg/L	1	9/22/2016 10:18:05 PM	B37425
EPA 200.8: METALS							Analyst: JLF	

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: EB091916

Project: SWMU 10

Collection Date: 9/19/2016 4:45:00 PM

Lab ID: 1609B57-012

Matrix: AQUEOUS

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: JLF	
Antimony	ND	0.00047	0.0010		mg/L	1	9/29/2016 5:36:46 PM	A37587
Arsenic	ND	0.00021	0.0010		mg/L	1	9/27/2016 5:41:52 PM	A37522
Lead	ND	0.00017	0.00050		mg/L	1	9/27/2016 5:41:52 PM	A37522
Selenium	ND	0.00021	0.0010		mg/L	1	9/27/2016 5:41:52 PM	A37522
EPA METHOD 245.1: MERCURY							Analyst: pmf	
Mercury	0.000069	0.000053	0.00020	J	mg/L	1	9/27/2016 12:47:13 PM	27692
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	2.6	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Acenaphthylene	ND	2.4	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Aniline	ND	2.4	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Anthracene	ND	2.5	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Azobenzene	ND	2.7	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Benz(a)anthracene	ND	2.6	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Benzo(a)pyrene	ND	2.7	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Benzo(b)fluoranthene	ND	2.9	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Benzo(g,h,i)perylene	ND	2.6	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Benzo(k)fluoranthene	ND	3.0	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Benzoic acid	6.2	2.6	20	J	µg/L	1	9/28/2016 2:28:52 PM	27668
Benzyl alcohol	ND	3.0	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Bis(2-chloroethoxy)methane	ND	2.8	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Bis(2-chloroethyl)ether	ND	2.7	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Bis(2-chloroisopropyl)ether	ND	1.9	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Bis(2-ethylhexyl)phthalate	2.7	2.6	10	J	µg/L	1	9/28/2016 2:28:52 PM	27668
4-Bromophenyl phenyl ether	ND	2.6	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Butyl benzyl phthalate	ND	2.5	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Carbazole	ND	2.3	10		µg/L	1	9/28/2016 2:28:52 PM	27668
4-Chloro-3-methylphenol	ND	2.6	10		µg/L	1	9/28/2016 2:28:52 PM	27668
4-Chloroaniline	ND	2.7	10		µg/L	1	9/28/2016 2:28:52 PM	27668
2-Chloronaphthalene	ND	2.3	10		µg/L	1	9/28/2016 2:28:52 PM	27668
2-Chlorophenol	ND	2.2	10		µg/L	1	9/28/2016 2:28:52 PM	27668
4-Chlorophenyl phenyl ether	ND	2.6	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Chrysene	ND	2.8	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Di-n-butyl phthalate	ND	2.4	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Di-n-octyl phthalate	ND	2.0	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Dibenz(a,h)anthracene	ND	2.7	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Dibenzofuran	ND	2.5	10		µg/L	1	9/28/2016 2:28:52 PM	27668
1,2-Dichlorobenzene	ND	2.3	10		µg/L	1	9/28/2016 2:28:52 PM	27668
1,3-Dichlorobenzene	ND	2.3	10		µg/L	1	9/28/2016 2:28:52 PM	27668

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: EB091916

Project: SWMU 10

Collection Date: 9/19/2016 4:45:00 PM

Lab ID: 1609B57-012

Matrix: AQUEOUS

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
1,4-Dichlorobenzene	ND	2.4	10		µg/L	1	9/28/2016 2:28:52 PM	27668
3,3'-Dichlorobenzidine	ND	2.4	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Diethyl phthalate	ND	2.7	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Dimethyl phthalate	ND	2.4	10		µg/L	1	9/28/2016 2:28:52 PM	27668
2,4-Dichlorophenol	ND	2.3	20		µg/L	1	9/28/2016 2:28:52 PM	27668
2,4-Dimethylphenol	ND	3.0	10		µg/L	1	9/28/2016 2:28:52 PM	27668
4,6-Dinitro-2-methylphenol	ND	1.8	20		µg/L	1	9/28/2016 2:28:52 PM	27668
2,4-Dinitrophenol	ND	2.8	20		µg/L	1	9/28/2016 2:28:52 PM	27668
2,4-Dinitrotoluene	ND	3.1	10		µg/L	1	9/28/2016 2:28:52 PM	27668
2,6-Dinitrotoluene	ND	2.7	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Fluoranthene	ND	2.6	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Fluorene	ND	2.7	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Hexachlorobenzene	ND	2.6	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Hexachlorobutadiene	ND	2.2	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Hexachlorocyclopentadiene	ND	2.3	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Hexachloroethane	ND	2.4	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Indeno(1,2,3-cd)pyrene	ND	3.0	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Isophorone	ND	2.6	10		µg/L	1	9/28/2016 2:28:52 PM	27668
1-Methylnaphthalene	ND	2.9	10		µg/L	1	9/28/2016 2:28:52 PM	27668
2-Methylnaphthalene	ND	2.9	10		µg/L	1	9/28/2016 2:28:52 PM	27668
2-Methylphenol	ND	2.5	10		µg/L	1	9/28/2016 2:28:52 PM	27668
3+4-Methylphenol	ND	2.3	10		µg/L	1	9/28/2016 2:28:52 PM	27668
N-Nitrosodi-n-propylamine	ND	2.4	10		µg/L	1	9/28/2016 2:28:52 PM	27668
N-Nitrosodimethylamine	ND	2.2	10		µg/L	1	9/28/2016 2:28:52 PM	27668
N-Nitrosodiphenylamine	ND	2.3	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Naphthalene	ND	2.6	10		µg/L	1	9/28/2016 2:28:52 PM	27668
2-Nitroaniline	ND	2.8	10		µg/L	1	9/28/2016 2:28:52 PM	27668
3-Nitroaniline	ND	2.9	10		µg/L	1	9/28/2016 2:28:52 PM	27668
4-Nitroaniline	ND	2.6	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Nitrobenzene	ND	2.8	10		µg/L	1	9/28/2016 2:28:52 PM	27668
2-Nitrophenol	ND	2.4	10		µg/L	1	9/28/2016 2:28:52 PM	27668
4-Nitrophenol	ND	2.6	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Pentachlorophenol	ND	2.3	20		µg/L	1	9/28/2016 2:28:52 PM	27668
Phenanthrene	ND	2.6	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Phenol	ND	2.0	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Pyrene	ND	3.1	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Pyridine	ND	2.2	10		µg/L	1	9/28/2016 2:28:52 PM	27668
1,2,4-Trichlorobenzene	ND	2.6	10		µg/L	1	9/28/2016 2:28:52 PM	27668
2,4,5-Trichlorophenol	ND	2.2	10		µg/L	1	9/28/2016 2:28:52 PM	27668

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: EB091916

Project: SWMU 10

Collection Date: 9/19/2016 4:45:00 PM

Lab ID: 1609B57-012

Matrix: AQUEOUS

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
2,4,6-Trichlorophenol	ND	2.4	10		µg/L	1	9/28/2016 2:28:52 PM	27668
Surr: 2-Fluorophenol	55.7	0	15-123		%Rec	1	9/28/2016 2:28:52 PM	27668
Surr: Phenol-d5	40.1	0	15-124		%Rec	1	9/28/2016 2:28:52 PM	27668
Surr: 2,4,6-Tribromophenol	73.0	0	18.4-134		%Rec	1	9/28/2016 2:28:52 PM	27668
Surr: Nitrobenzene-d5	61.9	0	28.8-134		%Rec	1	9/28/2016 2:28:52 PM	27668
Surr: 2-Fluorobiphenyl	53.6	0	35.9-125		%Rec	1	9/28/2016 2:28:52 PM	27668
Surr: 4-Terphenyl-d14	61.2	0	15-146		%Rec	1	9/28/2016 2:28:52 PM	27668
EPA METHOD 8260B: VOLATILES							Analyst: AG	
Benzene	ND	0.096	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Toluene	ND	0.12	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Ethylbenzene	ND	0.11	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Methyl tert-butyl ether (MTBE)	ND	0.21	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,2,4-Trimethylbenzene	ND	0.11	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,2-Dichloroethane (EDC)	ND	0.12	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,2-Dibromoethane (EDB)	ND	0.11	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Naphthalene	ND	0.093	2.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1-Methylnaphthalene	ND	0.20	4.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
2-Methylnaphthalene	0.52	0.16	4.0	J	µg/L	1	9/23/2016 4:07:23 PM	W37464
Acetone	ND	4.9	10		µg/L	1	9/23/2016 4:07:23 PM	W37464
Bromobenzene	ND	0.098	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Bromodichloromethane	ND	0.14	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Bromoform	ND	0.10	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Bromomethane	ND	0.78	3.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
2-Butanone	ND	0.74	10		µg/L	1	9/23/2016 4:07:23 PM	W37464
Carbon disulfide	ND	0.60	10		µg/L	1	9/23/2016 4:07:23 PM	W37464
Carbon Tetrachloride	ND	0.11	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Chlorobenzene	ND	0.11	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Chloroethane	ND	0.19	2.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Chloroform	ND	0.089	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Chloromethane	ND	0.21	3.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
2-Chlorotoluene	ND	0.40	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
4-Chlorotoluene	ND	0.13	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
cis-1,2-DCE	ND	0.12	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
cis-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,2-Dibromo-3-chloropropane	ND	0.23	2.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Dibromochloromethane	ND	0.087	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Dibromomethane	ND	0.12	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,2-Dichlorobenzene	ND	0.40	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: EB091916

Project: SWMU 10

Collection Date: 9/19/2016 4:45:00 PM

Lab ID: 1609B57-012

Matrix: AQUEOUS

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: AG	
1,3-Dichlorobenzene	ND	0.14	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,4-Dichlorobenzene	ND	0.14	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Dichlorodifluoromethane	ND	0.36	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,1-Dichloroethane	ND	0.11	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,1-Dichloroethene	ND	0.11	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,2-Dichloropropane	ND	0.11	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,3-Dichloropropane	ND	0.16	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
2,2-Dichloropropane	ND	0.17	2.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,1-Dichloropropene	ND	0.13	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Hexachlorobutadiene	ND	0.20	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
2-Hexanone	ND	0.84	10		µg/L	1	9/23/2016 4:07:23 PM	W37464
Isopropylbenzene	ND	0.10	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
4-Isopropyltoluene	ND	0.14	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
4-Methyl-2-pentanone	ND	0.43	10		µg/L	1	9/23/2016 4:07:23 PM	W37464
Methylene Chloride	ND	0.19	3.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
n-Butylbenzene	ND	0.16	3.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
n-Propylbenzene	ND	0.13	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
sec-Butylbenzene	ND	0.12	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Styrene	ND	0.11	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
tert-Butylbenzene	ND	0.12	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,1,2,2-Tetrachloroethane	ND	0.13	2.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Tetrachloroethene (PCE)	ND	0.15	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
trans-1,2-DCE	ND	0.40	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
trans-1,3-Dichloropropene	ND	0.10	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,2,3-Trichlorobenzene	ND	0.11	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,2,4-Trichlorobenzene	ND	0.13	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,1,1-Trichloroethane	ND	0.091	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,1,2-Trichloroethane	ND	0.13	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Trichloroethene (TCE)	ND	0.18	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Trichlorofluoromethane	ND	0.20	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
1,2,3-Trichloropropane	ND	0.20	2.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Vinyl chloride	ND	0.20	1.0		µg/L	1	9/23/2016 4:07:23 PM	W37464
Xylenes, Total	ND	0.37	1.5		µg/L	1	9/23/2016 4:07:23 PM	W37464
Surr: 1,2-Dichloroethane-d4	99.3	0	70-130		%Rec	1	9/23/2016 4:07:23 PM	W37464
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	9/23/2016 4:07:23 PM	W37464
Surr: Dibromofluoromethane	106	0	70-130		%Rec	1	9/23/2016 4:07:23 PM	W37464
Surr: Toluene-d8	95.9	0	70-130		%Rec	1	9/23/2016 4:07:23 PM	W37464

EPA METHOD 8015D: GASOLINE RANGE

Analyst: AG

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B57

Date Reported: 10/19/2016

CLIENT: Western Refining Company

Client Sample ID: EB091916

Project: SWMU 10

Collection Date: 9/19/2016 4:45:00 PM

Lab ID: 1609B57-012

Matrix: AQUEOUS

Received Date: 9/20/2016 4:17:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: AG	
Gasoline Range Organics (GRO)	0.027	0.015	0.050	J	mg/L	1	9/23/2016 4:07:23 PM	G37464
Surr: BFB	101	0	70-130		%Rec	1	9/23/2016 4:07:23 PM	G37464

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental

Lab ID: B16091850-001

Client Sample ID: 1609B57-001C SWMU 10-23 (2-2.5 Feet)

Collection Date: 09/19/16 11:40

Project: Not Indicated

Date Received: 09/22/16

Matrix: Soil

Report Date: 10/03/16 Revised Date: 10/11/16

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE												
Chromium, Hexavalent - Soluble	ND	mg/kg		1.0	0.099	SW7196A	09/23/16 16:15 / ma	09/23/16 11:51	Water Extr	SPEC_160923B	7	102988
CYANIDE												
Cyanide, Total	ND	mg/kg		0.25	0.047	SW9012	09/26/16 10:23 / jmg	09/23/16 11:00	SW9010	SFA-201-B_160926A	15	102985

Report Definitions: RL - Analyte reporting limit.

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

Lab ID: B16091850-002

Client Sample ID: 1609B57-002C SVMU 10-23 (15-16 Feet)

Collection Date: 09/19/16 11:55

Project: Not Indicated

Date Received: 09/22/16

Matrix: Soil

Report Date: 10/03/16 **Revised Date:** 10/11/16

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE												
Chromium, Hexavalent - Soluble	ND	mg/kg		1.0	0.10	SW7196A	09/23/16 16:15 / ma	09/23/16 11:51	Water Extr	SPEC_160923B	8	102868
CYANIDE												
Cyanide, Total	0.071	mg/kg	J	0.25	0.049	SW9012	09/26/16 10:31 / jmg	09/23/16 11:01	SW9010	SFA-201-B_160926A	18	102985

Report RL - Analyte reporting limit.

Definitions: J - Estimated value. The analyte was present but less than the reporting limit.

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

Client Sample ID: 1609B57-003C SWMU 10-24 (2-2.5 Feet)

Project: Not Indicated

Matrix: Soil

Lab ID: B16091850-003

Collection Date: 09/19/16 12:55

Date Received: 09/22/16

Report Date: 10/03/16 **Revised Date:** 10/11/16

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE Chromium, Hexavalent - Soluble	ND	mg/kg		1.0	0.10	SW7196A	09/23/16 16:15 / ma	09/23/16 11:51	Water Extr	SPEC_160923B	9	102988
CYANIDE Cyanide, Total	0.12	mg/kg	J	0.25	0.049	SW9012	09/26/16 10:34 / jmg	09/23/16 11:01	SW9010	SFA-201-B_160926A	19	102985

Report RL - Analyte reporting limit.

Definitions: J - Estimated value. The analyte was present but less than the reporting limit.

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

Client Sample ID: 1609B57-004C SWMU 10-24 (6-8 Feet)

Project: Not Indicated

Matrix: Soil

Lab ID: B16091850-004

Collection Date: 09/19/16 13:10

Date Received: 09/22/16

Report Date: 10/03/16 Revised Date: 10/11/16

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE												
Chromium, Hexavalent - Soluble	ND	mg/kg		1.0	0.10	SW7196A	09/23/16 16:15 / ma	09/23/16 11:51	Water Extr	SPEC_160923B	10	102988
CYANIDE												
Cyanide, Total	0.19	mg/kg	J	0.25	0.048	SW9012	09/26/16 10:36 / jmg	09/23/16 11:01	SW9010	SFA-201-B_160926A	20	102985

Report Definitions: RL - Analyte reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

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

Client Sample ID: 1609B57-005C SWMU 10-24 (8-10 Feet)

Project: Not Indicated

Matrix: Soil

Lab ID: B16091850-005

Collection Date: 09/19/16 13:25

Date Received: 09/22/16

Report Date: 10/03/16 **Revised Date:** 10/11/16

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE												
Chromium, Hexavalent - Soluble	ND	mg/kg		1.0	0.099	SW7196A	09/23/16 16:15 / ma	09/23/16 11:51	Water Extr	SPEC_160923B	11	102988
CYANIDE												
Cyanide, Total	0.15	mg/kg	J	0.25	0.049	SW9012	09/26/16 10:39 / jmg	09/23/16 11:01	SW9010	SFA-201-B_160926A	21	102985

Report RL - Analyte reporting limit.

Definitions: J - Estimated value. The analyte was present but less than the reporting limit.

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

Client Sample ID: 1609B57-006C SVMU 10-24)15-16 Feet)

Project: Not Indicated

Matrix: Soil

Lab ID: B16091850-006

Collection Date: 09/19/16 13:40

Date Received: 09/22/16

Report Date: 10/03/16 Revised Date: 10/11/16

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE												
Chromium, Hexavalent - Soluble	ND	mg/kg		1.0	0.10	SW7196A	09/23/16 16:15 / ma	09/23/16 11:51	Water Extr	SPEC_160923B	12	102988
CYANIDE												
Cyanide, Total	ND	mg/kg		0.25	0.049	SW9012	09/26/16 10:42 / jmg	09/23/16 11:01	SW9010	SFA-201-B_160926A	22	102985

Report Definitions: RL - Analyte reporting limit.

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

Client Sample ID: 1609B57-007C SWMU 10-25 (2-2.5 Feet)

Project: Not Indicated

Matrix: Soil

Lab ID: B16091850-007

Collection Date: 09/19/16 15:45

Date Received: 09/22/16

Report Date: 10/03/16 **Revised Date:** 10/11/16

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE												
Chromium, Hexavalent - Soluble	ND	mg/kg		1.0	0.099	SW7196A	09/23/16 16:15 / ma	09/23/16 11:51	Water Extr	SPEC_160923B	13	102988
CYANIDE												
Cyanide, Total	0.12	mg/kg	J	0.25	0.048	SW9012	09/26/16 10:45 / jmg	09/23/16 11:01	SW9010	SFA-201-B_160926A	23	102985

Report RL - Analyte reporting limit.

Definitions: J - Estimated value. The analyte was present but less than the reporting limit.

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

Lab ID: B16091850-008

Client Sample ID: 1609B57-008C SVMU 10-25 (10-12 Feet)

Collection Date: 09/19/16 16:00

Project: Not Indicated

Date Received: 09/22/16

Matrix: Soil

Report Date: 10/03/16 **Revised Date:** 10/11/16

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE												
Chromium, Hexavalent - Soluble	ND	mg/kg		1.0	0.10	SW7196A	09/23/16 16:15 / ma	09/23/16 11:51	Water Extr	SPEC_160923B	14	102988
CYANIDE												
Cyanide, Total	0.34	mg/kg		0.25	0.045	SW9012	09/26/16 10:47 / jmg	09/23/16 11:01	SW9010	SFA-201-B_160926A	24	102985

Report Definitions: RL - Analyte reporting limit.

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

Lab ID: B16091850-009

Client Sample ID: 1609B57-009C SVMU 10-25 (16.5-18 Feet)

Collection Date: 09/19/16 16:15

Project: Not Indicated

Date Received: 09/22/16

Matrix: Soil

Report Date: 10/03/16 Revised Date: 10/11/16

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE												
Chromium, Hexavalent - Soluble	ND	mg/kg		1.0	0.10	SW7196A	09/23/16 16:15 / ma	09/23/16 11:51	Water Extr	SPEC_160923B	15	102988
CYANIDE												
Cyanide, Total	0.076	mg/kg	J	0.25	0.049	SW9012	09/26/16 10:50 / jmg	09/23/16 11:01	SW9010	SFA-201-B_160926A	25	102985

Report Definitions: RL - Analyte reporting limit.

J - Estimated value. The analyte was present but less than the reporting limit.

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

Client Sample ID: 1609B57-010C SWMU 10 DUP01

Project: Not Indicated

Matrix: Soil

Lab ID: B16091850-010

Collection Date: 09/19/16 16:15

Date Received: 09/22/16

Report Date: 10/03/16 Revised Date: 10/11/16

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE												
Chromium, Hexavalent - Soluble	ND	mg/kg		1.0	0.10	SW7196A	09/23/16 16:15 / ma	09/23/16 11:51	Water Extr	SPEC_160923B	18	102988
CYANIDE												
Cyanide, Total	0.063	mg/kg	J	0.25	0.049	SW9012	09/26/16 11:04 / jmg	09/23/16 11:01	SW9010	SFA-201-B_160926A	28	102985

Report RL - Analyte reporting limit.

Definitions: J - Estimated value. The analyte was present but less than the reporting limit.

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

Client Sample ID: 1609B57-012H EBO91916

Project: Not Indicated

Matrix: Aqueous

Lab ID: B16091850-011

Collection Date: 09/19/16 16:45

Date Received: 09/22/16

Report Date: 10/03/16 **Revised Date:** 10/11/16

Analyses	Result	Units	QUAL	RL	MDL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
INORGANICS												
Cyanide, Total	ND	mg/L		0.005	0.001	Kelada-01	09/23/16 13:42 / jmg			SFA-201-B_160923A : 71		R267573

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



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DATES REPORT

Work Order: B16091850
Client: Hall Environmental
Project: Not Indicated
Revised Date: 10/11/16
Report Date: 10/03/16

Lab ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date Method Batch	Analysis Date
B16091850-001A	1609B57-001C SWMU 10-23 (2-2.5 Feet)	9/19/2016 11:40:00 AM	Soil	Chromium, Hexavalent	09/23/2016	SW7196A [102988]	9/23/2016
B16091850-001A	1609B57-001C SWMU 10-23 (2-2.5 Feet)	9/19/2016 11:40:00 AM	Soil	Total Cyanide	09/23/2016	SW9012 [102985]	9/26/2016
B16091850-002A	1609B57-002C SWMU 10-23 (15-16 Feet)	9/19/2016 11:55:00 AM	Soil	Chromium, Hexavalent	09/23/2016	SW7196A [102988]	9/23/2016
B16091850-002A	1609B57-002C SWMU 10-23 (15-16 Feet)	9/19/2016 11:55:00 AM	Soil	Total Cyanide	09/23/2016	SW9012 [102985]	9/26/2016
B16091850-003A	1609B57-003C SWMU 10-24 (2-2.5 Feet)	9/19/2016 12:55:00 PM	Soil	Chromium, Hexavalent	09/23/2016	SW7196A [102988]	9/23/2016
B16091850-003A	1609B57-003C SWMU 10-24 (2-2.5 Feet)	9/19/2016 12:55:00 PM	Soil	Total Cyanide	09/23/2016	SW9012 [102985]	9/26/2016
B16091850-004A	1609B57-004C SWMU 10-24 (6-8 Feet)	9/19/2016 1:10:00 PM	Soil	Chromium, Hexavalent	09/23/2016	SW7196A [102988]	9/23/2016
B16091850-004A	1609B57-004C SWMU 10-24 (6-8 Feet)	9/19/2016 1:10:00 PM	Soil	Total Cyanide	09/23/2016	SW9012 [102985]	9/26/2016
B16091850-005A	1609B57-005C SWMU 10-24 (8-10 Feet)	9/19/2016 1:25:00 PM	Soil	Chromium, Hexavalent	09/23/2016	SW7196A [102988]	9/23/2016
B16091850-005A	1609B57-005C SWMU 10-24 (8-10 Feet)	9/19/2016 1:25:00 PM	Soil	Total Cyanide	09/23/2016	SW9012 [102985]	9/26/2016
B16091850-006A	1609B57-006C SWMU 10-24 (15-16 Feet)	9/19/2016 1:40:00 PM	Soil	Chromium, Hexavalent	09/23/2016	SW7196A [102988]	9/23/2016
B16091850-006A	1609B57-006C SWMU 10-24 (15-16 Feet)	9/19/2016 1:40:00 PM	Soil	Total Cyanide	09/23/2016	SW9012 [102985]	9/26/2016
B16091850-007A	1609B57-007C SWMU 10-25 (2-2.5 Feet)	9/19/2016 3:45:00 PM	Soil	Chromium, Hexavalent	09/23/2016	SW7196A [102988]	9/23/2016
B16091850-007A	1609B57-007C SWMU 10-25 (2-2.5 Feet)	9/19/2016 3:45:00 PM	Soil	Total Cyanide	09/23/2016	SW9012 [102985]	9/26/2016
B16091850-008A	1609B57-008C SWMU 10-25 (10-12 Feet)	9/19/2016 4:00:00 PM	Soil	Chromium, Hexavalent	09/23/2016	SW7196A [102988]	9/23/2016
B16091850-008A	1609B57-008C SWMU 10-25 (10-12 Feet)	9/19/2016 4:00:00 PM	Soil	Total Cyanide	09/23/2016	SW9012 [102985]	9/26/2016
B16091850-009A	1609B57-009C SWMU 10-25 (16.5-18 Feet)	9/19/2016 4:15:00 PM	Soil	Chromium, Hexavalent	09/23/2016	SW7196A [102988]	9/23/2016
B16091850-009A	1609B57-009C SWMU 10-25 (16.5-18 Feet)	9/19/2016 4:15:00 PM	Soil	Total Cyanide	09/23/2016	SW9012 [102985]	9/26/2016
B16091850-010A	1609B57-010C SWMU 10 DUP01	9/19/2016 4:15:00 PM	Soil	Chromium, Hexavalent	09/23/2016	SW7196A [102988]	9/23/2016
B16091850-010A	1609B57-010C SWMU 10 DUP01	9/19/2016 4:15:00 PM	Soil	Total Cyanide	09/23/2016	SW9012 [102985]	9/26/2016
B16091850-011A	1609B57-012H EBO91916	9/19/2016 4:45:00 PM	Aqueous	Cyanide, Total	NA		9/23/2016



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Client: Hall Environmental
Work Order: B16091850
Project: Not Indicated

ANALYTICAL QC SUMMARY REPORT
Prepared by Billings, MT Branch
BatchID: R267573

Date: 03-Oct-16

Run ID :Run Order: SFA-201-B_160923A: 7		SampType: Initial Calibration Verification Standard				Lab ID: ICB		Method: Kelada-01			
Analysis Date: 09/23/16 10:11		Units: mg/L		Prep Info:				Prep Method:			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.0991	0.0050	0.1	0	99	90	110				
Associated samples: B16091850-011A											

Run ID :Run Order: SFA-201-B_160923A: 8		SampType: Method Blank		Lab ID: ICB		Method: Kelada-01					
Analysis Date: 09/23/16 10:14		Units: mg/L		Prep Info:		Prep Method:					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	ND	0.001									
Associated samples: B16091850-011A											

Run ID :Run Order: SFA-201-B_160923A: 9		SampType: Laboratory Fortified Blank		Lab ID: LFB		Method: Kelada-01					
Analysis Date: 09/23/16 10:16		Units: mg/L		Prep Info: Prep Date: 4/23/2002		Prep Method:					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.104	0.0050	0.1	0	104	90	110				
Associated samples: B16091850-011A											

Run ID :Run Order: SFA-201-B_160923A: 10		SampType: Laboratory Control Sample				Lab ID: LCS1-K4Fe(CN)6		Method: Kelada-01			
Analysis Date: 09/23/16 10:19		Units: mg/L		Prep Info:		Prep Date:		Prep Method:			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.197	0.0050	0.2	0	98	90	110				
Associated samples: B16091850-011A											

Run ID :Run Order: SFA-201-B_160923A: 69		SampType: Continuing Calibration Verification Standard				Lab ID: CCV		Method: Kelada-01			
Analysis Date: 09/23/16 13:31		Units: mg/L		Prep Info:				Prep Date:			
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Cyanide, Total	0.103	0.0050	0.1	0	103	90	110				
Associated samples: B16091850-011A											

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limit N - Analyte concentration was not sufficiently high to calculate RPD
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits A - Analyte concentration greater than four times the spike amount



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Client: Hall Environmental
Work Order: B16091850
Project: Not Indicated

ANALYTICAL QC SUMMARY REPORT
Prepared by Billings, MT Branch
BatchID: R267573

Date: 03-Oct-16

Run ID :Run Order:	SFA-201-B_160923A: 70	SampType: Continuing Calibration Blank	Lab ID: CCB	Method: Kelada-01							
Analysis Date:	09/23/16 13:34	Units: mg/L	Prep Info:	Prep Date:							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.000800	0.0050		0							
Associated samples: B16091850-011A											

Run ID :Run Order: SFA-201-B_160923A: 72		SampType: Sample Matrix Spike		Lab ID: B16091850-011AMS		Method: Kelada-01					
Analysis Date: 09/23/16 13:45		Units: mg/L		Prep Info:		Prep Date:					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.103	0.0050	0.1	0	103	90	110				
Associated samples: B16091850-011A											

Run ID :Run Order: SFA-201-B_160923A: 73		SampType: Sample Matrix Spike Duplicate		Lab ID: B16091850-011AMS		Method: Kelada-01					
Analysis Date: 09/23/16 13:47		Units: mg/L		Prep Info:		Prep Date:					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.104	0.0050	0.1	0	104	90	110	0.1032	0.4	10	
Associated samples: B16091850-011A											

Run ID :Run Order: SFA-201-B_160923A: 83		SampType: Continuing Calibration Verification Standar		Lab ID: CCV		Method: Kelada-01					
Analysis Date: 09/23/16 14:17		Units: mg/L		Prep Info:		Prep Date:					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.101	0.0050	0.1	0	101	90	110				
Associated samples: B16091850-011A											

Run ID :Run Order:	SFA-201-B_160923A: 84	SampType: Continuing Calibration Blank	Lab ID: CCB	Method: Kelada-01							
Analysis Date:	09/23/16 14:20	Units: mg/L	Prep Info:	Prep Date:							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.00290	0.0050	0	0							
Associated samples: B16091850-011A											

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limit N - Analyte concentration was not sufficiently high to calculate RPD
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits A - Analyte concentration greater than four times the spike amount



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Client: Hall Environmental

Work Order: B16091850

Project: Not Indicated

ANALYTICAL QC SUMMARY REPORT

Prepared by Billings, MT Branch

BatchID: R267640

Date: 03-Oct-16

Run ID :Run Order: SFA-201-B_160926A: 7	SampType: Initial Calibration Verification Standard	Lab ID: ICV	Method: Kelada-01								
Analysis Date: 09/26/16 09:56	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.102	0.0050	0.1	0	102	90	110				
Associated samples: B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A											

Run ID :Run Order: SFA-201-B_160926A: 26	SampType: Continuing Calibration Verification Standard	Lab ID: CCV	Method: Kelada-01								
Analysis Date: 09/26/16 10:53	Units: mg/L	Prep Info: Prep Date:	Prep Method:								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.103	0.0050	0.1	0	103	90	110				
Associated samples: B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A											

Run ID :Run Order: SFA-201-B_160926A: 27		SampType: Continuing Calibration Blank		Lab ID: CCB		Method: Kelada-01					
Analysis Date: 09/26/16 10:55		Units: mg/L		Prep Info: Prep Date:		Prep Method:					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.00180	0.0050		0							
Associated samples: B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A											

Run ID :Run Order: SFA-201-B_160926A: 35		SampType: Continuing Calibration Verification Standard		Lab ID: CCV		Method: Kelada-01					
Analysis Date: 09/26/16 11:22		Units: mg/L		Prep Info: Prep Date:		Prep Method:					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.100	0.0050	0.1	0	100	90	110				
Associated samples: B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A											

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits
N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount



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Client: Hall Environmental

Work Order: B16091850

Project: Not Indicated

ANALYTICAL QC SUMMARY REPORT

Prepared by Billings, MT Branch

BatchID: 102985

Date: 03-Oct-16

Run ID :Run Order: SFA-201-B_160926A: 12		SampType: Method Blank		Lab ID: MB-102985		Method: SW9012					
Analysis Date: 09/26/16 10:15		Units: mg/kg		Prep Info: Prep Date: 9/23/2016		Prep Method: SW9010					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	0.05	0.05									
Associated samples: B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A											

Run ID :Run Order: SFA-201-B_160926A: 13	SampType: Laboratory Control Sample		Lab ID: LCS-102985		Method: SW9012						
Analysis Date: 09/26/16 10:18	Units: mg/kg		Prep Info: Prep Date: 9/23/2016		Prep Method: SW9010						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	4.64	0.25	4.998	0.05271	92	60	140				
Associated samples: B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A											

Run ID :Run Order: SFA-201-B_160926A: 16		SampType: Sample Matrix Spike		Lab ID: B16091850-001AMS		Method: SW9012					
Analysis Date: 09/26/16 10:26		Units: mg/kg		Prep Info: Prep Date: 9/23/2016		Prep Method: SW9010					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	4.25	0.25	4.784	0	89	50	150				
Associated samples: B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A											

Run ID :Run Order: SFA-201-B_160926A: 17												SampType: Sample Matrix Spike Duplicate				Lab ID: B16091850-001AMS				Method: SW9012			
Analysis Date: 09/26/16 10:28												Units: mg/kg				Prep Info: Prep Date: 9/23/2016				Prep Method: SW9010			
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC		LowLimit		HighLimit		RPD Ref Val		%RPD		RPDLimit		Qual	
Cyanide, Total		4.20		0.25		4.802		0		87		50		150		4.246		1.1		30			
Associated samples: B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A																							

Run ID :Run Order: SFA-201-B_160926A: 29		SampType: Sample Matrix Spike		Lab ID: B16091850-010AMS		Method: SW9012					
Analysis Date: 09/26/16 11:06		Units: mg/kg		Prep Info: Prep Date: 9/23/2016		Prep Method: SW9010					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cyanide, Total	4.76	0.25	5.04	0.06278	93	50	150				
Associated samples: B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A											

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limit	N - Analyte concentration was not sufficiently high to calculate RPD
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	A - Analyte concentration greater than four times the spike amount



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Client: Hall Environmental
Work Order: B16091850
Project: Not Indicated

ANALYTICAL QC SUMMARY REPORT

Prepared by Billings, MT Branch

BatchID: 102985

Date: 03-Oct-16

Run ID :Run Order: SFA-201-B_160926A: 30	Sample Type: Sample Matrix Spike Duplicate	Lab ID: B16091850-010AMSD	Method: SW9012
Analysis Date: 09/26/16 11:09	Units: mg/kg	Prep Info: Prep Date: 9/23/2016	Prep Method: SW9010
Analyte	Result	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Cyanide, Total	4.75	94	50 150 4.761 0.2 30
Associated samples: B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A			

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limit
R - RPD outside accepted recovery limits

N - Analyte concentration was not sufficiently high to calculate RPD
A - Analyte concentration greater than four times the spike amount



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Client: Hall Environmental
Work Order: B16091850
Project: Not Indicated

ANALYTICAL QC SUMMARY REPORT

Prepared by Billings, MT Branch

BatchID: 102988

Date: 03-Oct-16

Run ID :Run Order: SPEC_160923B: 5	SampType: Method Blank	Lab ID: MB-102988	Method: SW7196A								
Analysis Date: 09/23/16 16:15	Units: mg/kg	Prep Info: Prep Date: 9/23/2016	Prep Method: Water Extraction								
Analyte	Result	QOL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	ND	0.01									
Associated samples: B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A											

Run ID :Run Order: SPEC_160923B: 6	SampType: Laboratory Control Sample	Lab ID: LCS-102988	Method: SW7196A								
Analysis Date: 09/23/16 16:15	Units: mg/kg	Prep Info: Prep Date: 9/23/2016	Prep Method: Water Extraction								
Analyte	Result	QOL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	0.643	1.0	1	0	64	50	150				
Associated samples: B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A											

Run ID :Run Order: SPEC_160923B: 16		SampType: Sample Matrix Spike		Lab ID: B16091850-009AMS		Method: SW7196A					
Analysis Date: 09/23/16 16:15		Units: mg/kg		Prep Info: Prep Date:		Prep Method:					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	1.21	1.0	1	0.2042	100	70	130				
Associated samples: B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A											

Run ID :Run Order: SPEC_160923B: 17	SampType: Sample Matrix Spike Duplicate				Lab ID: B16091850-009AMS		Method: SW7196A				
Analysis Date: 09/23/16 16:15	Units: mg/kg		Prep Info:		Prep Date:		Prep Method:				
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	1.17	1.0	1	0.2042	97	70	130	1.208	3.0	20	
Associated samples: B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A											

Run ID :Run Order: SPEC_160923B: 19	SampType: Sample Duplicate	Lab ID: B16091850-010ADUP	Method: SW7196A								
Analysis Date: 09/23/16 16:15	Units: mg/kg	Prep Info: Prep Date: 9/23/2016	Prep Method: Water Extraction								
Analyte	Result	QOL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	0.487	1.0		0				0.432		30	
Associated samples: B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A											

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limit	N - Analyte concentration was not sufficiently high to calculate RPD
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	A - Analyte concentration greater than four times the spike amount



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Client: Hall Environmental
Work Order: B16091850
Project: Not Indicated

ANALYTICAL QC SUMMARY REPORT

Prepared by Billings, MT Branch

BatchID: 102988

Date: 03-Oct-16

Run ID :Run Order: SPEC_160923B: 20 SampType: Sample Matrix Spike Lab ID: B16091850-010APRESPIKEMS Method: SW7196A

Analysis Date: 09/23/16 16:15 Units: mg/kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	1.30	1.0	1	0.432	87	70	130				

Associated samples: B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A

Run ID :Run Order: SPEC_160923B: 21 SampType: Sample Matrix Spike Duplicate Lab ID: B16091850-010APRESPIKEMSD Method: SW7196A

Analysis Date: 09/23/16 16:15 Units: mg/kg

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent - Soluble	1.04	1.0	1	0.432	60	70	130	1.3	23	20	SR

Associated samples: B16091850-001A, B16091850-002A, B16091850-003A, B16091850-004A, B16091850-005A, B16091850-006A, B16091850-007A, B16091850-008A, B16091850-009A, B16091850-010A

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limit N - Analyte concentration was not sufficiently high to calculate RPD
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits A - Analyte concentration greater than four times the spike amount

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-C	SampType:	MBLK	TestCode:	EPA Method 200.7: Metals					
Client ID:	PBW	Batch ID:	C37552	RunNo:	37552					
Prep Date:		Analysis Date:	9/29/2016	SeqNo:	1168348	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS-C	SampType:	LCS	TestCode:	EPA Method 200.7: Metals					
Client ID:	LCSW	Batch ID:	C37552	RunNo:	37552					
Prep Date:		Analysis Date:	9/29/2016	SeqNo:	1168350	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	101	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.7	85	115			
Cadmium	0.50	0.0020	0.5000	0	101	85	115			
Chromium	0.49	0.0060	0.5000	0	98.4	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.3	85	115			
Iron	0.49	0.020	0.5000	0	97.9	85	115			
Manganese	0.50	0.0020	0.5000	0	99.2	85	115			
Nickel	0.48	0.010	0.5000	0	96.3	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Vanadium	0.50	0.050	0.5000	0	100	85	115			
Zinc	0.48	0.010	0.5000	0	96.5	85	115			

Sample ID	LLCS-C	SampType:	LCSLL	TestCode:	EPA Method 200.7: Metals					
Client ID:	BatchQC	Batch ID:	C37552	RunNo:	37552					
Prep Date:		Analysis Date:	9/29/2016	SeqNo:	1168351	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0023	0.0020	0.002000	0	114	50	150			
Beryllium	0.0021	0.0020	0.002000	0	106	50	150			
Cadmium	0.0020	0.0020	0.002000	0	98.5	50	150			J
Chromium	0.0051	0.0060	0.006000	0	84.5	50	150			J
Cobalt	0.0068	0.0060	0.006000	0	112	50	150			
Iron	0.020	0.020	0.02000	0	102	50	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	LLLCS-C		SampType: LCSLL		TestCode: EPA Method 200.7: Metals					
Client ID:	BatchQC		Batch ID: C37552		RunNo: 37552					
Prep Date:			Analysis Date: 9/29/2016		SeqNo: 1168351		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	0.0020	0.0020	0.002000	0	101	50	150			
Nickel	0.0048	0.010	0.005000	0	96.4	50	150			J
Silver	0.0053	0.0050	0.005000	0	107	50	150			
Vanadium	0.010	0.050	0.01000	0	101	50	150			J
Zinc	0.0051	0.010	0.005000	0	102	50	150			J

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-B	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	B37552	RunNo:	37552					
Prep Date:		Analysis Date:	9/29/2016	SeqNo:	1168337	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS-B	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	B37552	RunNo:	37552					
Prep Date:		Analysis Date:	9/29/2016	SeqNo:	1168344	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	0.50	0.0020	0.5000	0	101	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.7	85	115			
Cadmium	0.51	0.0020	0.5000	0	101	85	115			
Chromium	0.49	0.0060	0.5000	0	98.0	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.2	85	115			
Iron	0.49	0.020	0.5000	0	97.4	85	115			
Manganese	0.49	0.0020	0.5000	0	98.8	85	115			
Nickel	0.48	0.010	0.5000	0	96.0	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Vanadium	0.50	0.050	0.5000	0	101	85	115			
Zinc	0.48	0.010	0.5000	0	96.2	85	115			

Sample ID	LLCS-B	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	B37552	RunNo:	37552					
Prep Date:		Analysis Date:	9/29/2016	SeqNo:	1168346	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	0.0027	0.0020	0.002000	0	135	50	150			
Beryllium	0.0020	0.0020	0.002000	0	99.0	50	150			J
Cadmium	0.0022	0.0020	0.002000	0	110	50	150			
Chromium	0.0053	0.0060	0.006000	0	87.7	50	150			J
Cobalt	0.0063	0.0060	0.006000	0	104	50	150			
Iron	0.021	0.020	0.02000	0	105	50	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	LLLCS-B		SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC		Batch ID: B37552		RunNo: 37552					
Prep Date:			Analysis Date: 9/29/2016		SeqNo: 1168346		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	0.0021	0.0020	0.002000	0	104	50	150			
Nickel	0.0052	0.010	0.005000	0	105	50	150			J
Silver	0.0051	0.0050	0.005000	0	102	50	150			
Vanadium	0.0097	0.050	0.01000	0	96.6	50	150			J
Zinc	0.0049	0.010	0.005000	0	98.2	50	150			J

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Metals					
Client ID:	LCSW		Batch ID: A37522		RunNo: 37522					
Prep Date:			Analysis Date: 9/27/2016		SeqNo: 1167021		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.023	0.0010	0.02500	0	90.7	85	115			
Lead	0.012	0.00050	0.01250	0	92.4	85	115			
Selenium	0.023	0.0010	0.02500	0	91.1	85	115			

Sample ID	LLCS		SampType: LCSLL		TestCode: EPA 200.8: Metals					
Client ID:	BatchQC		Batch ID: A37522		RunNo: 37522					
Prep Date:			Analysis Date: 9/27/2016		SeqNo: 1167023		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.0010	0.0010	0.001000	0	100	50	150			
Lead	0.00049	0.00050	0.0005000	0	97.8	50	150			J
Selenium	0.00097	0.0010	0.001000	0	97.4	50	150			J

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Metals					
Client ID:	PBW	Batch ID: A37522			RunNo: 37522					
Prep Date:		Analysis Date: 9/27/2016			SeqNo: 1167024		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Metals					
Client ID:	LCSW		Batch ID: A37587		RunNo: 37587					
Prep Date:			Analysis Date: 9/29/2016		SeqNo: 1169883		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.4	85	115			

Sample ID	LCSLL		SampType: LCSLL		TestCode: EPA 200.8: Metals					
Client ID:	BatchQC		Batch ID: A37587		RunNo: 37587					
Prep Date:			Analysis Date: 9/29/2016		SeqNo: 1169884		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00076	0.0010	0.001000	0	75.5	50	150			J

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Metals					
Client ID:	PBW	Batch ID:	A37587	RunNo:	37587					
Prep Date:		Analysis Date:	9/29/2016	SeqNo:	1169886	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS			SampType: LCS		TestCode: EPA 200.8: Dissolved Metals				
Client ID:	LCSW			Batch ID: B37425		RunNo: 37425				
Prep Date:				Analysis Date: 9/22/2016		SeqNo: 1163315		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.023	0.0010	0.02500	0	92.1	85	115			
Arsenic	0.023	0.0010	0.02500	0	90.1	85	115			
Lead	0.012	0.00050	0.01250	0	93.2	85	115			
Selenium	0.023	0.0010	0.02500	0	90.3	85	115			

Sample ID	LLCS	SampType: LCSLL			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC	Batch ID: B37425			RunNo: 37425					
Prep Date:		Analysis Date: 9/22/2016			SeqNo: 1163316		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00067	0.0010	0.001000	0	66.5	50	150			J
Arsenic	0.00091	0.0010	0.001000	0	91.5	50	150			J
Lead	0.00052	0.00050	0.0005000	0	104	50	150			
Selenium	0.00092	0.0010	0.001000	0	91.9	50	150			J

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: B37425			RunNo: 37425					
Prep Date:		Analysis Date: 9/22/2016			SeqNo: 1163317		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	1609B57-012FMS	SampType:	MS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	EB091916	Batch ID:	27692	RunNo:	37503					
Prep Date:	9/26/2016	Analysis Date:	9/27/2016	SeqNo:	1166110	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0057	0.00020	0.005000	.00006867	112	75	125			

Sample ID	1609B57-012FMSD	SampType:	MSD	TestCode:	EPA Method 245.1: Mercury					
Client ID:	EB091916	Batch ID:	27692	RunNo:	37503					
Prep Date:	9/26/2016	Analysis Date:	9/27/2016	SeqNo:	1166111	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0058	0.00020	0.005000	.00006867	115	75	125	2.35	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType: mblk			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID: R37390			RunNo: 37390					
Prep Date:		Analysis Date: 9/21/2016			SeqNo: 1162083		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID	LCS		SampType: lcs		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW		Batch ID: R37390		RunNo: 37390					
Prep Date:			Analysis Date: 9/21/2016		SeqNo: 1162084		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.54	0.10	0.5000	0	108	90	110			
Chloride	4.8	0.50	5.000	0	96.8	90	110			
Sulfate	9.9	0.50	10.00	0	98.7	90	110			

Sample ID	1609B57-012EMS		SampType: ms		TestCode: EPA Method 300.0: Anions					
Client ID:	EB091916		Batch ID: R37390		RunNo: 37390					
Prep Date:			Analysis Date: 9/21/2016		SeqNo: 1162126		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.55	0.10	0.5000	0	109	74.5	121			
Chloride	4.8	0.50	5.000	0.1061	93.4	81.9	117			
Sulfate	9.7	0.50	10.00	0	96.8	83	118			

Sample ID	1609B57-012EMSD		SampType: msd		TestCode: EPA Method 300.0: Anions					
Client ID:	EB091916		Batch ID: R37390		RunNo: 37390					
Prep Date:			Analysis Date: 9/21/2016		SeqNo: 1162127		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.55	0.10	0.5000	0	111	74.5	121	1.41	20	
Chloride	4.8	0.50	5.000	0.1061	94.3	81.9	117	0.932	20	
Sulfate	9.8	0.50	10.00	0	97.6	83	118	0.813	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS-27652		SampType: LCS			TestCode: EPA Method 8015M/D: Diesel Range Organics				
Client ID:	LCSS		Batch ID: 27652			RunNo: 37433				
Prep Date:	9/22/2016		Analysis Date: 9/23/2016			SeqNo: 1163639		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	90.4	62.6	124			
Surr: DNOP	4.0		5.000		79.7	70	130			

Sample ID	MB-27652		SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range Organics				
Client ID:	PBS		Batch ID: 27652			RunNo: 37433				
Prep Date:	9/22/2016		Analysis Date: 9/23/2016			SeqNo: 1163640		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	9.4		10.00		94.0	70	130			

Sample ID	LCS-27685		SampType: LCS			TestCode: EPA Method 8015M/D: Diesel Range Organics				
Client ID:	LCSS		Batch ID: 27685			RunNo: 37494				
Prep Date:	9/26/2016		Analysis Date: 9/27/2016			SeqNo: 1166208		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	96.7	62.6	124			
Surr: DNOP	4.5		5.000		90.9	70	130			

Sample ID	MB-27685		SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range Organics				
Client ID:	PBS		Batch ID: 27685			RunNo: 37494				
Prep Date:	9/26/2016		Analysis Date: 9/27/2016			SeqNo: 1166209		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.0		10.00		90.1	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	1609B57-012CMS	SampType:	MS	TestCode:	EPA Method 8015M/D: Diesel Range					
Client ID:	EB091916	Batch ID:	27667	RunNo:	37473					
Prep Date:	9/23/2016	Analysis Date:	9/26/2016	SeqNo:	1165386	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.7	1.0	5.000	0	115	79.6	148			
Surr: DNOP	0.55		0.5000		109	77.1	144			

Sample ID	1609B57-012CMSD	SampType:	MSD	TestCode:	EPA Method 8015M/D: Diesel Range					
Client ID:	EB091916	Batch ID:	27667	RunNo:	37473					
Prep Date:	9/23/2016	Analysis Date:	9/26/2016	SeqNo:	1165387	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.8	1.0	5.000	0	116	79.6	148	1.10	20	
Surr: DNOP	0.54		0.5000		107	77.1	144	0	0	

Sample ID	LCS-27667	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW	Batch ID:	27667	RunNo:	37473					
Prep Date:	9/23/2016	Analysis Date:	9/26/2016	SeqNo:	1165395	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.5	1.0	5.000	0	110	63.2	155			
Surr: DNOP	0.53		0.5000		107	77.1	144			

Sample ID	MB-27667	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range					
Client ID:	PBW	Batch ID:	27667	RunNo:	37473					
Prep Date:	9/23/2016	Analysis Date:	9/26/2016	SeqNo:	1165396	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.1		1.000		108	77.1	144			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: Volatiles					
Client ID:	LCSS	Batch ID:	S37464	RunNo:	37464					
Prep Date:		Analysis Date:	9/23/2016	SeqNo:	1164933	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	107	70	130			
Toluene	0.96	0.050	1.000	0	96.0	70	130			
Chlorobenzene	0.93	0.050	1.000	0	93.2	70	130			
1,1-Dichloroethene	0.92	0.050	1.000	0	92.2	70	130			
Trichloroethene (TCE)	0.86	0.050	1.000	0	86.2	70	130			
Surr: Dibromofluoromethane	0.48		0.5000		96.0	70	130			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		94.9	70	130			
Surr: Toluene-d8	0.48		0.5000		97.0	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.6	70	130			

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: Volatiles					
Client ID:	PBS	Batch ID:	S37464	RunNo:	37464					
Prep Date:		Analysis Date:	9/23/2016	SeqNo:	1164934	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	0.0048	0.050								J
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	0.028	0.15								J
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: Volatiles					
Client ID:	PBS	Batch ID: S37464			RunNo: 37464					
Prep Date:		Analysis Date: 9/23/2016			SeqNo: 1164934	Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: Volatiles					
Client ID:	PBS	Batch ID:	S37464	RunNo:	37464					
Prep Date:		Analysis Date:	9/23/2016	SeqNo:	1164934	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.50		0.5000		101	70	130			
Surr: 1,2-Dichloroethane-d4	0.51		0.5000		101	70	130			
Surr: Toluene-d8	0.46		0.5000		92.2	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		95.5	70	130			

Sample ID	1609b57-004ams	SampType:	MS	TestCode:	EPA Method 8260B: Volatiles					
Client ID:	SWMU 10-24 (6-8')	Batch ID:	S37464	RunNo:	37464					
Prep Date:		Analysis Date:	9/23/2016	SeqNo:	1164936	Units:	mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	15	0.36	14.59	0	104	49.2	155			
Toluene	14	0.73	14.59	0.2464	93.8	52	154			
Chlorobenzene	14	0.73	14.59	0	98.5	53.2	150			
1,1-Dichloroethene	14	0.73	14.59	0	94.8	34.2	163			
Trichloroethene (TCE)	13	0.73	14.59	0	92.5	48.2	151			
Surr: Dibromofluoromethane	7.5		7.294		103	70	130			
Surr: 1,2-Dichloroethane-d4	7.7		7.294		106	70	130			
Surr: Toluene-d8	6.8		7.294		92.6	70	130			
Surr: 4-Bromofluorobenzene	5.8		7.294		79.1	70	130			

Sample ID	1609b57-004amsd	SampType:	MSD	TestCode:	EPA Method 8260B: Volatiles					
Client ID:	SWMU 10-24 (6-8')	Batch ID:	S37464	RunNo:	37464					
Prep Date:		Analysis Date:	9/23/2016	SeqNo:	1164937	Units:	mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	15	0.36	14.59	0	103	49.2	155	0.929	20	
Toluene	13	0.73	14.59	0.2464	87.1	52	154	7.26	20	
Chlorobenzene	13	0.73	14.59	0	91.0	53.2	150	7.91	20	
1,1-Dichloroethene	13	0.73	14.59	0	88.1	34.2	163	7.35	20	
Trichloroethene (TCE)	13	0.73	14.59	0	86.8	48.2	151	6.39	20	
Surr: Dibromofluoromethane	7.6		7.294		104	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	8.0		7.294		110	70	130	0	0	
Surr: Toluene-d8	6.7		7.294		91.6	70	130	0	0	
Surr: 4-Bromofluorobenzene	5.9		7.294		80.2	70	130	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	100ng lcs		SampType: LCS		TestCode: EPA Method 8260B: Volatiles					
Client ID:	LCSS		Batch ID: S37484		RunNo: 37484					
Prep Date:			Analysis Date: 9/26/2016		SeqNo: 1165573		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	111	70	130			
Toluene	0.99	0.050	1.000	0	98.5	70	130			
Chlorobenzene	0.96	0.050	1.000	0	95.8	70	130			
1,1-Dichloroethene	1.1	0.050	1.000	0	107	70	130			
Trichloroethene (TCE)	0.91	0.050	1.000	0	91.1	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		103	70	130			
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		99.3	70	130			
Surr: Toluene-d8	0.48		0.5000		95.0	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		99.3	70	130			

Sample ID	rb2	SampType: MBLK			TestCode: EPA Method 8260B: Volatiles					
Client ID:	PBS	Batch ID: S37484			RunNo: 37484					
Prep Date:		Analysis Date: 9/26/2016			SeqNo: 1165574		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	0.022	0.15								J
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	rb2	SampType:	MBLK	TestCode:	EPA Method 8260B: Volatiles					
Client ID:	PBS	Batch ID:	S37484	RunNo:	37484					
Prep Date:		Analysis Date:	9/26/2016	SeqNo:	1165574	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID rb2	SampType: MBLK			TestCode: EPA Method 8260B: Volatiles						
Client ID: PBS	Batch ID: S37484			RunNo: 37484						
Prep Date:	Analysis Date: 9/26/2016			SeqNo: 1165574		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.54		0.5000		108	70	130			
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		101	70	130			
Surr: Toluene-d8	0.48		0.5000		95.5	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.1	70	130			

Sample ID 100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: Volatiles						
Client ID: LCSS	Batch ID: S37515			RunNo: 37515						
Prep Date:	Analysis Date: 9/27/2016			SeqNo: 1166836		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.025	1.000	0	116	70	130			
Toluene	0.95	0.050	1.000	0	94.9	70	130			
Chlorobenzene	0.92	0.050	1.000	0	92.4	70	130			
1,1-Dichloroethene	1.1	0.050	1.000	0	106	70	130			
Trichloroethene (TCE)	0.97	0.050	1.000	0	97.3	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		101	70	130			
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		104	70	130			
Surr: Toluene-d8	0.46		0.5000		91.8	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		95.5	70	130			

Sample ID rb	SampType: MBLK			TestCode: EPA Method 8260B: Volatiles						
Client ID: PBS	Batch ID: S37515			RunNo: 37515						
Prep Date:	Analysis Date: 9/27/2016			SeqNo: 1166837		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0051	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: Volatiles					
Client ID:	PBS	Batch ID: S37515			RunNo: 37515					
Prep Date:		Analysis Date: 9/27/2016			SeqNo: 1166837	Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	0.030	0.15								J
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: Volatiles					
Client ID:	PBS	Batch ID: S37515			RunNo: 37515					
Prep Date:		Analysis Date: 9/27/2016			SeqNo: 1166837	Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.58		0.5000		116	70	130			
Surr: 1,2-Dichloroethane-d4	0.54		0.5000		108	70	130			
Surr: Toluene-d8	0.45		0.5000		89.1	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		92.9	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-27629	SampType:	MBLK	TestCode:	Method 8260B/5035LOW: VOLATILES					
Client ID:	PBS	Batch ID:	27629	RunNo:	37389					
Prep Date:	9/21/2016	Analysis Date:	9/21/2016	SeqNo:	1162057	Units:	µg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	2.00								
Toluene	ND	2.00								
Ethylbenzene	ND	2.00								
Methyl tert-butyl ether (MTBE)	ND	2.00								
1,2,4-Trimethylbenzene	ND	2.00								
1,3,5-Trimethylbenzene	ND	2.00								
1,2-Dichloroethane (EDC)	ND	2.00								
1,2-Dibromoethane (EDB)	ND	2.00								
Naphthalene	ND	2.00								
1-Methylnaphthalene	0.360	4.00								J
2-Methylnaphthalene	ND	4.00								
Acetone	ND	10.0								
Bromobenzene	ND	2.00								
Bromodichloromethane	ND	2.00								
Bromoform	ND	2.00								
Bromomethane	ND	3.00								
2-Butanone	ND	10.0								
Carbon disulfide	ND	10.0								
Carbon tetrachloride	ND	2.00								
Chlorobenzene	ND	2.00								
Chloroethane	ND	2.00								
Chloroform	ND	2.00								
Chloromethane	ND	2.00								
2-Chlorotoluene	ND	2.00								
4-Chlorotoluene	ND	2.00								
cis-1,2-DCE	ND	2.00								
cis-1,3-Dichloropropene	ND	2.00								
1,2-Dibromo-3-chloropropane	ND	2.00								
Dibromochloromethane	ND	2.00								
Dibromomethane	ND	2.00								
1,2-Dichlorobenzene	ND	2.00								
1,3-Dichlorobenzene	ND	2.00								
1,4-Dichlorobenzene	ND	2.00								
Dichlorodifluoromethane	ND	2.00								
1,1-Dichloroethane	ND	2.00								
1,1-Dichloroethene	ND	2.00								
1,2-Dichloropropane	ND	2.00								
1,3-Dichloropropane	ND	2.00								
2,2-Dichloropropane	ND	2.00								

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-27629		SampType: MBLK			TestCode: Method 8260B/5035LOW: VOLATILES				
Client ID:	PBS		Batch ID: 27629			RunNo: 37389				
Prep Date:	9/21/2016		Analysis Date: 9/21/2016			SeqNo: 1162057 Units: µg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	2.00								
Hexachlorobutadiene	ND	2.00								
2-Hexanone	ND	10.0								
Isopropylbenzene	ND	2.00								
4-Isopropyltoluene	ND	2.00								
4-Methyl-2-pentanone	ND	10.0								
Methylene chloride	ND	3.00								
n-Butylbenzene	ND	2.00								
n-Propylbenzene	ND	2.00								
sec-Butylbenzene	ND	2.00								
Styrene	0.320	2.00								J
tert-Butylbenzene	ND	2.00								
1,1,1,2-Tetrachloroethane	ND	2.00								
1,1,2,2-Tetrachloroethane	ND	2.00								
Tetrachloroethene (PCE)	ND	2.00								
trans-1,2-DCE	ND	2.00								
trans-1,3-Dichloropropene	ND	2.00								
1,2,3-Trichlorobenzene	ND	2.00								
1,2,4-Trichlorobenzene	ND	2.00								
1,1,1-Trichloroethane	ND	2.00								
1,1,2-Trichloroethane	ND	2.00								
Trichloroethene (TCE)	ND	2.00								
Trichlorofluoromethane	ND	2.00								
1,2,3-Trichloropropane	ND	2.00								
Vinyl chloride	ND	2.00								
Xylenes, Total	ND	2.00								
Surr: 1,2-Dichloroethane-d4	10.2		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	10.2		10.00		102	70	130			
Surr: Dibromofluoromethane	10.1		10.00		101	70	130			
Surr: Toluene-d8	9.98		10.00		99.8	70	130			

Sample ID	LCS-27629		SampType: LCS			TestCode: Method 8260B/5035LOW: VOLATILES				
Client ID:	LCSS		Batch ID: 27629			RunNo: 37389				
Prep Date:	9/21/2016		Analysis Date: 9/21/2016			SeqNo: 1162061 Units: µg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	9.90	2.00	10.00	0	99.0	70	130			
Toluene	9.97	2.00	10.00	0	99.7	70	130			
Chlorobenzene	10.1	2.00	10.00	0	101	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS-27629		SampType: LCS		TestCode: Method 8260B/5035LOW: VOLATILES					
Client ID:	LCSS		Batch ID: 27629		RunNo: 37389					
Prep Date:	9/21/2016		Analysis Date: 9/21/2016		SeqNo: 1162061		Units: µg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	9.83	2.00	10.00	0	98.3	68	129			
Trichloroethene (TCE)	9.94	2.00	10.00	0	99.4	70	130			
Surr: 1,2-Dichloroethane-d4	10.4		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	10.2		10.00		102	70	130			
Surr: Dibromofluoromethane	10.3		10.00		103	70	130			
Surr: Toluene-d8	9.91		10.00		99.1	70	130			

Sample ID	LCSD-27629		SampType: LCSD		TestCode: Method 8260B/5035LOW: VOLATILES					
Client ID:	LCSS02		Batch ID: 27629		RunNo: 37389					
Prep Date:	9/21/2016		Analysis Date: 9/21/2016		SeqNo: 1162068		Units: µg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	10.1	2.00	10.00	0	101	70	130	1.80	20	
Toluene	10.0	2.00	10.00	0	100	70	130	0.600	20	
Chlorobenzene	10.1	2.00	10.00	0	101	70	130	0.199	20	
1,1-Dichloroethene	9.92	2.00	10.00	0	99.2	68	129	0.911	20	
Trichloroethene (TCE)	10.0	2.00	10.00	0	100	70	130	0.802	20	
Surr: 1,2-Dichloroethane-d4	10.5		10.00		105	70	130	0	0	
Surr: 4-Bromofluorobenzene	10.0		10.00		100	70	130	0	0	
Surr: Dibromofluoromethane	10.2		10.00		102	70	130	0	0	
Surr: Toluene-d8	9.88		10.00		98.8	70	130	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	100ng lcs		SampType: LCS			TestCode: EPA Method 8260B: VOLATILES				
Client ID:	LCSW		Batch ID: W37464			RunNo: 37464				
Prep Date:	Analysis Date: 9/23/2016			SeqNo: 1164806		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	19	1.0	20.00	0	96.0	70	130			
Chlorobenzene	19	1.0	20.00	0	93.2	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	92.2	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	86.2	70	130			
Surr: 1,2-Dichloroethane-d4	9.5		10.00		94.9	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.6	70	130			
Surr: Dibromofluoromethane	9.6		10.00		96.0	70	130			
Surr: Toluene-d8	9.7		10.00		97.0	70	130			

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: W37464			RunNo: 37464					
Prep Date:		Analysis Date: 9/23/2016			SeqNo: 1164807		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	0.11	1.0								J
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	0.42	1.0								J
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	0.24	4.0								J
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	0.17	1.0								J
Chloroethane	0.27	2.0								J
Chloroform	ND	1.0								
Chloromethane	0.50	3.0								J
2-Chlorotoluene	ND	1.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: W37464			RunNo: 37464					
Prep Date:	Analysis Date: 9/23/2016			SeqNo: 1164807		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	0.48	1.0								J
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID: PBW	Batch ID: W37464			RunNo: 37464						
Prep Date:	Analysis Date: 9/23/2016			SeqNo: 1164807		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	9.5		10.00		95.5	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	9.2		10.00		92.2	70	130			

Sample ID 1609b57-012ams	SampType: MS			TestCode: EPA Method 8260B: VOLATILES						
Client ID: EB091916	Batch ID: W37464			RunNo: 37464						
Prep Date:	Analysis Date: 9/23/2016			SeqNo: 1164930		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	106	70	130			
Toluene	19	1.0	20.00	0	95.9	70	130			
Chlorobenzene	19	1.0	20.00	0	96.6	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	91.7	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	87.4	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	10		10.00		104	70	130			
Surr: Toluene-d8	9.6		10.00		96.0	70	130			

Sample ID 1609b57-012amsd	SampType: MSD			TestCode: EPA Method 8260B: VOLATILES						
Client ID: EB091916	Batch ID: W37464			RunNo: 37464						
Prep Date:	Analysis Date: 9/23/2016			SeqNo: 1164931		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	103	70	130	2.78	20	
Toluene	18	1.0	20.00	0	92.0	70	130	4.12	20	
Chlorobenzene	18	1.0	20.00	0	90.3	70	130	6.82	20	
1,1-Dichloroethene	18	1.0	20.00	0	88.0	70	130	4.17	20	
Trichloroethene (TCE)	17	1.0	20.00	0	85.4	70	130	2.28	20	
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130	0	0	
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130	0	0	
Surr: Dibromofluoromethane	10		10.00		104	70	130	0	0	
Surr: Toluene-d8	9.5		10.00		95.3	70	130	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-27700	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBS	Batch ID:	27700	RunNo:	37545					
Prep Date:	9/26/2016	Analysis Date:	9/28/2016	SeqNo:	1168037	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	0.11	0.50								J
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	0.077	0.40								J
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3'-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-27700	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBS	Batch ID:	27700	RunNo:	37545					
Prep Date:	9/26/2016	Analysis Date:	9/28/2016	SeqNo:	1168037	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.6		3.330		77.4	35	97.9			
Surr: Phenol-d5	2.5		3.330		74.9	37.3	105			
Surr: 2,4,6-Tribromophenol	2.6		3.330		77.8	35.6	118			
Surr: Nitrobenzene-d5	1.0		1.670		62.6	41.2	107			
Surr: 2-Fluorobiphenyl	1.1		1.670		65.3	41.9	119			
Surr: 4-Terphenyl-d14	0.90		1.670		53.9	15	132			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-27700		SampType: LCS			TestCode: EPA Method 8270C: Semivolatiles				
Client ID:	LCSS		Batch ID: 27700			RunNo: 37577				
Prep Date:	9/26/2016		Analysis Date: 9/29/2016			SeqNo: 1169435		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.7	0.20	1.670	0	99.8	45.8	99.8			S
4-Chloro-3-methylphenol	3.3	0.50	3.330	0	99.1	51.5	103			
2-Chlorophenol	3.2	0.20	3.330	0	96.3	46.5	105			
1,4-Dichlorobenzene	1.6	0.20	1.670	0	98.8	45.5	103			
2,4-Dinitrotoluene	1.6	0.50	1.670	0	92.9	36	87.2			S
N-Nitrosodi-n-propylamine	1.6	0.20	1.670	0	94.1	47.3	104			
4-Nitrophenol	3.1	0.25	3.330	0	93.5	47.3	95.3			
Pentachlorophenol	3.1	0.40	3.330	0	91.8	38.7	89.3			S
Phenol	3.5	0.20	3.330	0	105	47.8	106			
Pyrene	1.7	0.20	1.670	0	101	33.4	105			
1,2,4-Trichlorobenzene	1.7	0.20	1.670	0	103	50.4	115			
Surr: 2-Fluorophenol	2.8		3.330		84.3	35	97.9			
Surr: Phenol-d5	3.0		3.330		91.3	37.3	105			
Surr: 2,4,6-Tribromophenol	3.0		3.330		91.2	35.6	118			
Surr: Nitrobenzene-d5	1.3		1.670		77.5	41.2	107			
Surr: 2-Fluorobiphenyl	1.3		1.670		78.5	41.9	119			
Surr: 4-Terphenyl-d14	1.2		1.670		68.9	15	132			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-27668	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	27668	RunNo:	37545					
Prep Date:	9/23/2016	Analysis Date:	9/28/2016	SeqNo:	1168035	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	5.0	20								J
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	2.9	10								J
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-27668		SampType:	MBLK		TestCode:	EPA Method 8270C: Semivolatiles			
Client ID:	PBW		Batch ID:	27668		RunNo:	37545			
Prep Date:	9/23/2016		Analysis Date:	9/28/2016		SeqNo:	1168035	Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	120		200.0		58.5	15	123			
Surr: Phenol-d5	81		200.0		40.6	4.13	124			
Surr: 2,4,6-Tribromophenol	150		200.0		74.1	18.4	134			
Surr: Nitrobenzene-d5	67		100.0		67.1	28.8	134			
Surr: 2-Fluorobiphenyl	52		100.0		52.4	35.9	125			
Surr: 4-Terphenyl-d14	64		100.0		64.2	15	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-27668		SampType: LCS			TestCode: EPA Method 8270C: Semivolatiles				
Client ID:	LCSW		Batch ID: 27668			RunNo: 37545				
Prep Date:	9/23/2016		Analysis Date: 9/28/2016			SeqNo: 1168036		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	71	10	100.0	0	71.3	35	113			
4-Chloro-3-methylphenol	170	10	200.0	0	83.3	40.7	114			
2-Chlorophenol	150	10	200.0	0	72.9	37.6	113			
1,4-Dichlorobenzene	60	10	100.0	0	60.2	37.7	106			
2,4-Dinitrotoluene	71	10	100.0	0	70.6	37	91			
N-Nitrosodi-n-propylamine	79	10	100.0	0	78.8	45.4	105			
4-Nitrophenol	120	10	200.0	0	61.2	33.4	104			
Pentachlorophenol	140	20	200.0	0	68.9	29.5	94.9			
Phenol	120	10	200.0	0	62.3	30.6	119			
Pyrene	75	10	100.0	0	74.8	26.2	120			
1,2,4-Trichlorobenzene	66	10	100.0	0	66.4	39.9	125			
Surr: 2-Fluorophenol	140		200.0		68.6	15	123			
Surr: Phenol-d5	120		200.0		60.9	4.13	124			
Surr: 2,4,6-Tribromophenol	160		200.0		80.3	18.4	134			
Surr: Nitrobenzene-d5	67		100.0		66.7	28.8	134			
Surr: 2-Fluorobiphenyl	60		100.0		60.1	35.9	125			
Surr: 4-Terphenyl-d14	57		100.0		57.0	15	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-27711	SampType:	MBLK	TestCode:	EPA Method 7471: Mercury					
Client ID:	PBS	Batch ID:	27711	RunNo:	37501					
Prep Date:	9/26/2016	Analysis Date:	9/27/2016	SeqNo:	1166033	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	LCS-27711	SampType:	LCS	TestCode:	EPA Method 7471: Mercury					
Client ID:	LCSS	Batch ID:	27711	RunNo:	37501					
Prep Date:	9/26/2016	Analysis Date:	9/27/2016	SeqNo:	1166034	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	105	80	120			

Sample ID	1609B57-001BMS	SampType:	MS	TestCode:	EPA Method 7471: Mercury					
Client ID:	SWMU 10-23 (2-2.5')	Batch ID:	27711	RunNo:	37501					
Prep Date:	9/26/2016	Analysis Date:	9/27/2016	SeqNo:	1166036	Units:	mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.21	0.037	0.1855	0.007182	108	75	125			

Sample ID	1609B57-001BMSD	SampType:	MSD	TestCode:	EPA Method 7471: Mercury					
Client ID:	SWMU 10-23 (2-2.5')	Batch ID:	27711	RunNo:	37501					
Prep Date:	9/26/2016	Analysis Date:	9/27/2016	SeqNo:	1166037	Units:	mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.20	0.037	0.1871	0.007182	104	75	125	2.51	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-27709	SampType:	MBLK	TestCode:	EPA Method 6010B: Soil Metals					
Client ID:	PBS	Batch ID:	27709	RunNo:	37544					
Prep Date:	9/26/2016	Analysis Date:	9/28/2016	SeqNo:	1167783	Units:	mg/Kg			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Manganese	0.066	0.10								J
Nickel	0.20	0.50								J
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								

Sample ID	LCS-27709	SampType:	LCS	TestCode:	EPA Method 6010B: Soil Metals					
Client ID:	LCSS	Batch ID:	27709	RunNo:	37544					
Prep Date:	9/26/2016	Analysis Date:	9/28/2016	SeqNo:	1167784	Units:	mg/Kg			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	22	2.5	25.00	0	88.9	80	120			
Arsenic	21	2.5	25.00	0	82.9	80	120			
Barium	22	0.10	25.00	0	88.3	80	120			
Beryllium	23	0.15	25.00	0	90.1	80	120			
Cadmium	23	0.10	25.00	0	90.9	80	120			
Chromium	22	0.30	25.00	0	86.0	80	120			
Manganese	22	0.10	25.00	0	89.3	80	120			
Nickel	22	0.50	25.00	0	86.4	80	120			
Selenium	22	2.5	25.00	0	89.7	80	120			
Silver	4.7	0.25	5.000	0	93.2	80	120			
Vanadium	23	2.5	25.00	0	90.8	80	120			

Sample ID	MB-27709	SampType:	MBLK	TestCode:	EPA Method 6010B: Soil Metals					
Client ID:	PBS	Batch ID:	27709	RunNo:	37544					
Prep Date:	9/26/2016	Analysis Date:	9/28/2016	SeqNo:	1167951	Units:	mg/Kg			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	ND	0.30								
Iron	ND	2.5								
Lead	ND	0.25								
Zinc	0.39	2.5								J

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS-27709		SampType: LCS		TestCode: EPA Method 6010B: Soil Metals					
Client ID:	LCSS		Batch ID: 27709		RunNo: 37544					
Prep Date:	9/26/2016		Analysis Date: 9/28/2016		SeqNo: 1167952		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	23	0.30	25.00	0	92.8	80	120			
Iron	25	2.5	25.00	0	98.4	80	120			
Lead	23	0.25	25.00	0	91.8	80	120			
Zinc	23	2.5	25.00	0	93.0	80	120			

Sample ID	1609B57-001BMS	SampType: MS		TestCode: EPA Method 6010B: Soil Metals						
Client ID:	SWMU 10-23 (2-2.5')	Batch ID: 27709		RunNo: 37544						
Prep Date:	9/26/2016	Analysis Date: 9/28/2016		SeqNo: 1167955		Units: mg/Kg-dry				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	13	5.5	27.64	0	48.0	75	125			S
Arsenic	20	5.5	27.64	0	70.9	75	125			S
Barium	230	0.22	27.64	222.0	39.3	75	125			S
Beryllium	23	0.33	27.64	1.115	79.2	75	125			
Cadmium	23	0.22	27.64	0	83.2	75	125			
Chromium	36	0.66	27.64	14.41	78.1	75	125			
Cobalt	28	0.66	27.64	6.815	76.2	75	125			
Lead	23	0.55	27.64	2.558	72.9	75	125			S
Manganese	340	0.22	27.64	451.2	-407	75	125			S
Nickel	32	1.1	27.64	11.88	73.0	75	125			S
Selenium	17	5.5	27.64	0	60.5	75	125			S
Silver	4.5	0.55	5.528	0	81.4	75	125			
Vanadium	46	5.5	27.64	23.24	80.8	75	125			
Zinc	42	5.5	27.64	21.23	74.9	75	125			S

Sample ID	1609B57-001BMSD	SampType: MSD			TestCode: EPA Method 6010B: Soil Metals					
Client ID:	SWMU 10-23 (2-2.5')	Batch ID: 27709			RunNo: 37544					
Prep Date:	9/26/2016	Analysis Date: 9/28/2016			SeqNo: 1167956		Units: mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	13	5.6	28.07	0	48.1	75	125	1.72	20	S
Arsenic	22	5.6	28.07	0	78.8	75	125	12.1	20	
Barium	300	0.22	28.07	222.0	295	75	125	26.7	20	RS
Beryllium	25	0.34	28.07	1.115	83.5	75	125	6.49	20	
Cadmium	25	0.22	28.07	0	87.7	75	125	6.77	20	
Chromium	39	0.67	28.07	14.41	87.5	75	125	7.94	20	
Cobalt	30	0.67	28.07	6.815	82.9	75	125	7.59	20	
Lead	24	0.56	28.07	2.558	75.0	75	125	3.94	20	
Manganese	400	0.22	28.07	451.2	-195	75	125	15.7	20	S
Nickel	35	1.1	28.07	11.88	82.7	75	125	9.06	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	1609B57-001BMSD	SampType:	MSD	TestCode:	EPA Method 6010B: Soil Metals					
Client ID:	SWMU 10-23 (2-2.5')	Batch ID:	27709	RunNo:	37544					
Prep Date:	9/26/2016	Analysis Date:	9/28/2016	SeqNo:	1167956	Units:	mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	17	5.6	28.07	0	59.2	75	125	0.758	20	S
Silver	4.8	0.56	5.614	0	86.0	75	125	7.05	20	
Vanadium	49	5.6	28.07	23.24	92.5	75	125	7.68	20	
Zinc	45	5.6	28.07	21.23	86.2	75	125	8.03	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	LCSS	Batch ID:	R37464	RunNo:	37464					
Prep Date:		Analysis Date:	9/23/2016	SeqNo:	1164944	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.9	62.9	123			
Surr: BFB	490		500.0		98.8	70	130			

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	PBS	Batch ID:	R37464	RunNo:	37464					
Prep Date:		Analysis Date:	9/23/2016	SeqNo:	1164945	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	460		500.0		92.4	70	130			

Sample ID	1609B57-001BMS	SampType:	MS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	SWMU 10-23 (2-2.5')	Batch ID:	R37464	RunNo:	37464					
Prep Date:		Analysis Date:	9/23/2016	SeqNo:	1164946	Units:	mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	17	3.6	18.11	0.5795	90.6	52.3	132			
Surr: BFB	370		362.2		102	70	130			

Sample ID	1609B57-001BMSD	SampType:	MSD	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	SWMU 10-23 (2-2.5')	Batch ID:	R37464	RunNo:	37464					
Prep Date:		Analysis Date:	9/23/2016	SeqNo:	1164947	Units:	mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	16	3.6	18.11	0.5795	85.4	52.3	132	5.70	20	
Surr: BFB	380		362.2		104	70	130	0	0	

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	PBS	Batch ID:	G37576	RunNo:	37576					
Prep Date:		Analysis Date:	9/29/2016	SeqNo:	1169458	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	480		500.0		95.9	70	130			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	LCSS	Batch ID:	G37576	RunNo:	37576					
Prep Date:		Analysis Date:	9/29/2016	SeqNo:	1169460	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	LCSS	Batch ID:	G37576	RunNo:	37576					
Prep Date:		Analysis Date:	9/29/2016	SeqNo:	1169460	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	99.4	62.9	123			
Surr: BFB	510		500.0		102	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609B57

19-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	2.5ug gro lcs	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID: G37464			RunNo: 37464					
Prep Date:		Analysis Date: 9/23/2016			SeqNo: 1164962		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0	96.9	75.4	118			
Surr: BFB	9.9		10.00		98.8	70	130			

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID: G37464			RunNo: 37464					
Prep Date:		Analysis Date: 9/23/2016			SeqNo: 1164963		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	9.2		10.00		92.4	70	130			

Sample ID	1609B57-012BMS		SampType: MS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	EB091916		Batch ID: G37464		RunNo: 37464					
Prep Date:			Analysis Date: 9/23/2016		SeqNo: 1164964		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0.02660	86.8	53.8	128			
Surr: BFB	9.7		10.00		97.1	70	130			

Sample ID	1609B57-012BMSD		SampType: MSD		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	EB091916		Batch ID: G37464		RunNo: 37464					
Prep Date:			Analysis Date: 9/23/2016		SeqNo: 1164965		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.45	0.050	0.5000	0.02660	84.7	53.8	128	2.33	20	
Surr: BFB	10		10.00		103	70	130	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified



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

Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1609B57

RcptNo: 1

Received by/date: AJ 09/20/16

Logged By: Michelle Garcia 9/20/2016 4:17:00 PM

Michelle Garcia

Completed By: Michelle Garcia 9/21/2016 11:07:18 AM

Michelle Garcia

Reviewed By: AJ 09/21/16

Chain of Custody

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

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°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: 3
(2 or >12 unless noted)

Adjusted? NO

Checked by: LC

Special Handling (if applicable)

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

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

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.2	Good	Yes			

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Chain-of-Custody Record									
Client: WESTERN REFINING SW, INC.									
GALLUP REFINERY									
Billing Address: 92 GIANT CROSSING RD									
GALLUP, NM 87301									
Phone #: 505-722-0217									
Email or Fax#: ED.RIEGE@WNR.COM									
VQC Package: ☒ Level 4 (Full Validation)									
Standard NELAP ☒ Other ☐									
EDD (Type) EXCEL									
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.			
19-16	1140	SOIL	GWMU 10-23(2-2.5')	JARS-3	NEAT	-001			
				VIALS-2	MEOH				
				VIALS-2	GOBI				
	1155		GWMU 10-23(15-16')	JARS-3	NEAT	-002			
				VIALS-2	MEOH				
				VIALS-2	GOBI				
	1255		GWMU 10-24(2-2.5')	JARS-3	NEAT	-003			
				VIALS-2	MEOH				
				VIALS-2	GOBI				
	1310		GWMU 10-24(6-8')	JARS-3	NEAT	-004			
				VIALS-2	MEOH				
				VIALS-2	GOBI				
Relinquished by: [Signature]				Received by: [Signature]					
Date:	Time:	Date:		Time:					
9/10	0630	9/10		215					
Date:	Time:	Date:		Time:					
10/16	1617	10/16		1617					

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.

Turn-Around Time:

ient: WESTERN REFINING SW, INC.
GALLUP REFINERY
ailing Address: 92 GIANT CROSSING RD
GALLUP, NM 87301
one #: 505-722-0217
nail or Fax#: ED.RIEGE@WNR.COM

Y/QC Package: _____

Standard ☒ Level 4 (Full Validation)

Accreditation

NELAP ☐ Other _____

EDD (Type) **EXCEL**

Date	Time	Matrix	Sample Request ID

9/16	1645	WATER	EB091916

A blank sheet of graph paper featuring a uniform grid of squares. The grid consists of 10 vertical columns and 8 horizontal rows. On the right side of the page, there are four arrows pointing horizontally to the right, aligned with the midlines of the second, third, fourth, and fifth rows from the top. These arrows indicate the direction for drawing the coordinate axes.

te:	Time:	Relinquished by:
01/16/06 30		[Signature]
te:	Time:	Relinquished by:
01/16/06	1617	[Signature]

Received by: <i>[Signature]</i>	Date <i>9/16/16</i>	Time <i>2:00</i>
Received by: <i>[Signature]</i>	Date <i>09/16/16</i>	Time <i>1617</i>

If necessary, samples submitted to Fall Environmental may be subco



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

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

Analysis Request

[illegible]

Remarks:

WESTERN REFINING SOUTHWEST, INC.
GALLUP REFINERY - SWMU 10
METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

WESTERN REFINING SOUTHWEST, INC.
GALLUP REFINERY - SWMU 10
METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES
AND WATER QA/QC SAMPLES
TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
~~Chromium VI~~	~~SW-846 Method 3060A~~
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

~~87~~ - 9/20/16

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES
AND WATER QA/QC SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0



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

October 06, 2016

Ed Riege

Western Refining Company

Rt. 3 Box 7

Gallup, NM 87301

TEL: (505) 722-0231

FAX

RE: SWMU 10

OrderNo.: 1609C66

Dear Ed Riege:

Hall Environmental Analysis Laboratory received 2 sample(s) on 9/21/2016 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 1609C66

Date Reported: 10/6/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-25-GW

Project: SWMU 10

Collection Date: 9/21/2016 8:50:00 AM

Lab ID: 1609C66-001

Matrix: AQUEOUS

Received Date: 9/21/2016 4:15:00 PM

CAS#	Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE								Analyst: TOM
TPH-DRO	Diesel Range Organics (DRO)	20	0.69	1.0		mg/L	1	9/26/2016 4:19:48 PM
TPH-MRO	Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	9/26/2016 4:19:48 PM
117-84-0	Surr: DNOP	119		0.7.1-144		%Rec	1	9/26/2016 4:19:48 PM
EPA METHOD 300.0: ANIONS								Analyst: MRA
16984-48-8	Fluoride	ND	0.25	0.50		mg/L	5	9/22/2016 11:32:06 AM
16887-00-6	Chloride	1800	10	100		mg/L	200	9/26/2016 10:29:25 PM
14808-79-8	Sulfate	110	0.71	2.5		mg/L	5	9/22/2016 11:32:06 AM
EPA METHOD 200.7: DISSOLVED METALS								Analyst: ELS
7440-39-3	Barium	1.4	0.0066	0.010		mg/L	5	9/29/2016 10:02:57 AM
7440-41-7	Beryllium	ND	0.00031	0.0020		mg/L	1	9/29/2016 10:01:03 AM
7440-43-9	Cadmium	ND	0.00075	0.0020		mg/L	1	9/29/2016 10:01:03 AM
7440-47-3	Chromium	ND	0.0018	0.0060		mg/L	1	9/29/2016 10:01:03 AM
7440-48-4	Cobalt	0.0049	0.00074	0.0060	J	mg/L	1	9/29/2016 10:01:03 AM
7439-89-6	Iron	0.23	0.020	0.020		mg/L	1	9/29/2016 10:01:03 AM
7439-96-5	Manganese	2.1	0.0016	0.010	*	mg/L	5	9/29/2016 10:02:57 AM
7440-02-0	Nickel	0.076	0.0024	0.010		mg/L	1	9/29/2016 10:01:03 AM
7440-22-4	Silver	ND	0.0028	0.0050		mg/L	1	9/29/2016 10:01:03 AM
7440-62-2	Vanadium	0.0030	0.0013	0.050	J	mg/L	1	9/29/2016 10:01:03 AM
7440-66-6	Zinc	0.0049	0.0028	0.010	J	mg/L	1	9/29/2016 10:01:03 AM
EPA METHOD 200.7: METALS								Analyst: ELS
7440-39-3	Barium	1.1	0.0066	0.010		mg/L	5	10/4/2016 5:40:05 PM
7440-41-7	Beryllium	0.00043	0.00036	0.0020	J	mg/L	1	10/4/2016 5:38:13 PM
7440-43-9	Cadmium	ND	0.0015	0.0020		mg/L	1	10/4/2016 5:38:13 PM
7440-47-3	Chromium	ND	0.0027	0.0060		mg/L	1	10/4/2016 5:38:13 PM
7440-48-4	Cobalt	0.0033	0.0017	0.0060	J	mg/L	1	10/4/2016 5:38:13 PM
7439-89-6	Iron	1.9	0.10	0.10	*	mg/L	5	10/4/2016 5:40:05 PM
7439-96-5	Manganese	2.1	0.0016	0.010	*	mg/L	5	10/4/2016 5:40:05 PM
7440-02-0	Nickel	0.059	0.0031	0.010		mg/L	1	10/4/2016 5:38:13 PM
7440-22-4	Silver	ND	0.0028	0.0050		mg/L	1	10/4/2016 5:38:13 PM
7440-62-2	Vanadium	0.0068	0.0013	0.050	J	mg/L	1	10/4/2016 5:38:13 PM
7440-66-6	Zinc	0.0097	0.0027	0.010	J	mg/L	1	10/4/2016 5:38:13 PM
EPA 200.8: DISSOLVED METALS								Analyst: JLF
7440-36-0	Antimony	ND	0.0024	0.0050		mg/L	5	9/28/2016 5:28:10 PM
7440-38-2	Arsenic	0.017	0.00069	0.0050	*	mg/L	5	9/28/2016 5:28:10 PM
7439-92-1	Lead	ND	0.00017	0.00050		mg/L	1	9/28/2016 5:23:01 PM
7782-49-2	Selenium	0.039	0.0011	0.0050		mg/L	5	9/28/2016 5:28:10 PM
EPA 200.8: METALS								Analyst: JLF

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
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EPA 200.8: METALS								Analyst: JLF
7440-36-0	Antimony	0.00056	0.00047	0.0010	J	mg/L	1	10/3/2016 1:17:40 PM
7440-38-2	Arsenic	0.017	0.0011	0.0050	*	mg/L	5	10/3/2016 2:18:14 PM
7439-92-1	Lead	0.0021	0.00017	0.00050		mg/L	1	10/3/2016 1:17:40 PM
7782-49-2	Selenium	0.041	0.011	0.050	J	mg/L	50	10/3/2016 2:23:22 PM
EPA METHOD 245.1: MERCURY								Analyst: pmf
7439-97-6	Mercury	0.000085	0.000053	0.00020	J	mg/L	1	9/27/2016 3:40:17 PM
EPA METHOD 8270C: SEMIVOLATILES								Analyst: DAM
83-32-9	Acenaphthene	6.5	2.6	10	J	µg/L	1	9/28/2016 2:56:46 PM
208-96-8	Acenaphthylene	ND	2.4	10		µg/L	1	9/28/2016 2:56:46 PM
62-53-3	Aniline	ND	2.4	10		µg/L	1	9/28/2016 2:56:46 PM
120-12-7	Anthracene	ND	2.5	10		µg/L	1	9/28/2016 2:56:46 PM
103-33-3	Azobenzene	ND	2.7	10		µg/L	1	9/28/2016 2:56:46 PM
56-55-3	Benz(a)anthracene	ND	2.6	10		µg/L	1	9/28/2016 2:56:46 PM
50-32-8	Benzo(a)pyrene	ND	2.7	10		µg/L	1	9/28/2016 2:56:46 PM
205-99-2	Benzo(b)fluoranthene	ND	2.9	10		µg/L	1	9/28/2016 2:56:46 PM
191-24-2	Benzo(g,h,i)perylene	ND	2.6	10		µg/L	1	9/28/2016 2:56:46 PM
207-08-9	Benzo(k)fluoranthene	ND	3.0	10		µg/L	1	9/28/2016 2:56:46 PM
65-85-0	Benzoic acid	ND	2.6	20		µg/L	1	9/28/2016 2:56:46 PM
100-51-6	Benzyl alcohol	ND	3.0	10		µg/L	1	9/28/2016 2:56:46 PM
111-91-1	Bis(2-chloroethoxy)methane	ND	2.8	10		µg/L	1	9/28/2016 2:56:46 PM
111-44-4	Bis(2-chloroethyl)ether	ND	2.7	10		µg/L	1	9/28/2016 2:56:46 PM
108-60-1	Bis(2-chloroisopropyl)ether	ND	1.9	10		µg/L	1	9/28/2016 2:56:46 PM
117-81-7	Bis(2-ethylhexyl)phthalate	2.8	2.6	10	J	µg/L	1	9/28/2016 2:56:46 PM
101-55-3	4-Bromophenyl phenyl ether	ND	2.6	10		µg/L	1	9/28/2016 2:56:46 PM
85-68-7	Butyl benzyl phthalate	ND	2.5	10		µg/L	1	9/28/2016 2:56:46 PM
86-74-8	Carbazole	3.2	2.3	10	J	µg/L	1	9/28/2016 2:56:46 PM
59-50-7	4-Chloro-3-methylphenol	ND	2.6	10		µg/L	1	9/28/2016 2:56:46 PM
106-47-8	4-Chloroaniline	ND	2.7	10		µg/L	1	9/28/2016 2:56:46 PM
91-58-7	2-Chloronaphthalene	ND	2.3	10		µg/L	1	9/28/2016 2:56:46 PM
95-57-8	2-Chlorophenol	ND	2.2	10		µg/L	1	9/28/2016 2:56:46 PM
7005-72-3	4-Chlorophenyl phenyl ether	ND	2.6	10		µg/L	1	9/28/2016 2:56:46 PM
218-01-9	Chrysene	ND	2.8	10		µg/L	1	9/28/2016 2:56:46 PM
84-74-2	Di-n-butyl phthalate	ND	2.4	10		µg/L	1	9/28/2016 2:56:46 PM
117-84-0	Di-n-octyl phthalate	ND	2.0	10		µg/L	1	9/28/2016 2:56:46 PM
53-70-3	Dibenz(a,h)anthracene	ND	2.7	10		µg/L	1	9/28/2016 2:56:46 PM
132-64-9	Dibenzofuran	ND	2.5	10		µg/L	1	9/28/2016 2:56:46 PM
95-50-1	1,2-Dichlorobenzene	ND	2.3	10		µg/L	1	9/28/2016 2:56:46 PM
541-73-1	1,3-Dichlorobenzene	ND	2.3	10		µg/L	1	9/28/2016 2:56:46 PM
106-46-7	1,4-Dichlorobenzene	ND	2.4	10		µg/L	1	9/28/2016 2:56:46 PM
91-94-1	3,3'-Dichlorobenzidine	ND	2.4	10		µg/L	1	9/28/2016 2:56:46 PM

Qualifiers:

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R RPD outside accepted recovery limits

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EPA METHOD 8270C: SEMIVOLATILES								Analyst: DAM
84-66-2	Diethyl phthalate	ND	2.7	10	µg/L	1		9/28/2016 2:56:46 PM
131-11-3	Dimethyl phthalate	ND	2.4	10	µg/L	1		9/28/2016 2:56:46 PM
120-83-2	2,4-Dichlorophenol	ND	2.3	20	µg/L	1		9/28/2016 2:56:46 PM
105-67-9	2,4-Dimethylphenol	1100	60	200	µg/L	20		9/29/2016 8:44:29 PM
534-52-1	4,6-Dinitro-2-methylphenol	ND	1.8	20	µg/L	1		9/28/2016 2:56:46 PM
51-28-5	2,4-Dinitrophenol	ND	2.8	20	µg/L	1		9/28/2016 2:56:46 PM
121-14-2	2,4-Dinitrotoluene	ND	3.1	10	µg/L	1		9/28/2016 2:56:46 PM
606-20-2	2,6-Dinitrotoluene	ND	2.7	10	µg/L	1		9/28/2016 2:56:46 PM
206-44-0	Fluoranthene	ND	2.6	10	µg/L	1		9/28/2016 2:56:46 PM
86-73-7	Fluorene	8.7	2.7	10	J µg/L	1		9/28/2016 2:56:46 PM
118-74-1	Hexachlorobenzene	ND	2.6	10	µg/L	1		9/28/2016 2:56:46 PM
87-68-3	Hexachlorobutadiene	ND	2.2	10	µg/L	1		9/28/2016 2:56:46 PM
77-47-4	Hexachlorocyclopentadiene	ND	2.3	10	µg/L	1		9/28/2016 2:56:46 PM
67-72-1	Hexachloroethane	ND	2.4	10	µg/L	1		9/28/2016 2:56:46 PM
193-39-5	Indeno(1,2,3-cd)pyrene	ND	3.0	10	µg/L	1		9/28/2016 2:56:46 PM
78-59-1	Isophorone	ND	2.6	10	µg/L	1		9/28/2016 2:56:46 PM
90-12-0	1-Methylnaphthalene	120	2.9	10	µg/L	1		9/28/2016 2:56:46 PM
91-57-6	2-Methylnaphthalene	180	2.9	10	µg/L	1		9/28/2016 2:56:46 PM
95-48-7	2-Methylphenol	2600	51	200	µg/L	20		9/29/2016 8:44:29 PM
65794-96-9	3+4-Methylphenol	6.2	2.3	10	J µg/L	1		9/28/2016 2:56:46 PM
621-64-7	N-Nitrosodi-n-propylamine	ND	2.4	10	µg/L	1		9/28/2016 2:56:46 PM
62-75-9	N-Nitrosodimethylamine	ND	2.2	10	µg/L	1		9/28/2016 2:56:46 PM
86-30-6	N-Nitrosodiphenylamine	ND	2.3	10	µg/L	1		9/28/2016 2:56:46 PM
91-20-3	Naphthalene	170	2.6	10	µg/L	1		9/28/2016 2:56:46 PM
88-74-4	2-Nitroaniline	ND	2.8	10	µg/L	1		9/28/2016 2:56:46 PM
99-09-2	3-Nitroaniline	ND	2.9	10	µg/L	1		9/28/2016 2:56:46 PM
100-01-6	4-Nitroaniline	ND	2.6	10	µg/L	1		9/28/2016 2:56:46 PM
98-95-3	Nitrobenzene	ND	2.8	10	µg/L	1		9/28/2016 2:56:46 PM
88-75-5	2-Nitrophenol	ND	2.4	10	µg/L	1		9/28/2016 2:56:46 PM
100-02-7	4-Nitrophenol	ND	2.6	10	µg/L	1		9/28/2016 2:56:46 PM
87-86-5	Pentachlorophenol	ND	2.3	20	µg/L	1		9/28/2016 2:56:46 PM
85-01-8	Phenanthrene	5.7	2.6	10	J µg/L	1		9/28/2016 2:56:46 PM
108-95-2	Phenol	ND	2.0	10	µg/L	1		9/28/2016 2:56:46 PM
129-00-0	Pyrene	ND	3.1	10	µg/L	1		9/28/2016 2:56:46 PM
110-86-1	Pyridine	ND	2.2	10	µg/L	1		9/28/2016 2:56:46 PM
120-82-1	1,2,4-Trichlorobenzene	ND	2.6	10	µg/L	1		9/28/2016 2:56:46 PM
95-95-4	2,4,5-Trichlorophenol	ND	2.2	10	µg/L	1		9/28/2016 2:56:46 PM
88-06-2	2,4,6-Trichlorophenol	ND	2.4	10	µg/L	1		9/28/2016 2:56:46 PM
367-12-4	Surr: 2-Fluorophenol	27.4	0	15-123	%Rec	1		9/28/2016 2:56:46 PM
4165-62-2	Surr: Phenol-d5	30.6	0	15-124	%Rec	1		9/28/2016 2:56:46 PM
118-79-6	Surr: 2,4,6-Tribromophenol	50.6	0	8.4-134	%Rec	1		9/28/2016 2:56:46 PM
4165-60-0	Surr: Nitrobenzene-d5	56.4	0	8.8-134	%Rec	1		9/28/2016 2:56:46 PM

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ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank
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EPA METHOD 8270C: SEMIVOLATILES								Analyst: DAM
321-60-8	Surr: 2-Fluorobiphenyl	52.8	0	5.9-125	%Rec	1		9/28/2016 2:56:46 PM
1718-51-0	Surr: 4-Terphenyl-d14	56.1	0	15-146	%Rec	1		9/28/2016 2:56:46 PM
EPA METHOD 8260B: VOLATILES								Analyst: AG
71-43-2	Benzene	320	4.8	50	µg/L	50		9/22/2016 6:04:01 PM
108-88-3	Toluene	140	5.9	50	µg/L	50		9/22/2016 6:04:01 PM
100-41-4	Ethylbenzene	200	5.6	50	µg/L	50		9/22/2016 6:04:01 PM
1634-04-4	Methyl tert-butyl ether (MTBE)	17	11	50	J µg/L	50		9/22/2016 6:04:01 PM
95-63-6	1,2,4-Trimethylbenzene	170	5.5	50	µg/L	50		9/22/2016 6:04:01 PM
108-67-8	1,3,5-Trimethylbenzene	46	5.8	50	J µg/L	50		9/22/2016 6:04:01 PM
107-06-2	1,2-Dichloroethane (EDC)	ND	5.8	50	µg/L	50		9/22/2016 6:04:01 PM
106-93-4	1,2-Dibromoethane (EDB)	ND	5.6	50	µg/L	50		9/22/2016 6:04:01 PM
91-20-3	Naphthalene	200	4.6	100	µg/L	50		9/22/2016 6:04:01 PM
90-12-0	1-Methylnaphthalene	110	10	200	J µg/L	50		9/22/2016 6:04:01 PM
91-57-6	2-Methylnaphthalene	140	7.9	200	J µg/L	50		9/22/2016 6:04:01 PM
67-64-1	Acetone	ND	250	500	µg/L	50		9/22/2016 6:04:01 PM
108-86-1	Bromobenzene	ND	4.9	50	µg/L	50		9/22/2016 6:04:01 PM
75-27-4	Bromodichloromethane	ND	7.0	50	µg/L	50		9/22/2016 6:04:01 PM
75-25-2	Bromoform	ND	5.1	50	µg/L	50		9/22/2016 6:04:01 PM
74-83-9	Bromomethane	ND	39	150	µg/L	50		9/22/2016 6:04:01 PM
78-93-3	2-Butanone	ND	37	500	µg/L	50		9/22/2016 6:04:01 PM
75-15-0	Carbon disulfide	ND	30	500	µg/L	50		9/22/2016 6:04:01 PM
56-23-5	Carbon Tetrachloride	ND	5.4	50	µg/L	50		9/22/2016 6:04:01 PM
108-90-7	Chlorobenzene	ND	5.7	50	µg/L	50		9/22/2016 6:04:01 PM
75-00-3	Chloroethane	ND	9.6	100	µg/L	50		9/22/2016 6:04:01 PM
67-66-3	Chloroform	ND	4.4	50	µg/L	50		9/22/2016 6:04:01 PM
74-87-3	Chloromethane	ND	11	150	µg/L	50		9/22/2016 6:04:01 PM
95-49-8	2-Chlorotoluene	ND	20	50	µg/L	50		9/22/2016 6:04:01 PM
106-43-4	4-Chlorotoluene	ND	6.4	50	µg/L	50		9/22/2016 6:04:01 PM
156-59-2	cis-1,2-DCE	ND	6.2	50	µg/L	50		9/22/2016 6:04:01 PM
10061-01-5	cis-1,3-Dichloropropene	ND	5.3	50	µg/L	50		9/22/2016 6:04:01 PM
96-12-8	1,2-Dibromo-3-chloropropane	ND	12	100	µg/L	50		9/22/2016 6:04:01 PM
124-48-1	Dibromochloromethane	ND	4.3	50	µg/L	50		9/22/2016 6:04:01 PM
74-95-3	Dibromomethane	ND	6.0	50	µg/L	50		9/22/2016 6:04:01 PM
95-50-1	1,2-Dichlorobenzene	ND	20	50	µg/L	50		9/22/2016 6:04:01 PM
541-73-1	1,3-Dichlorobenzene	ND	7.2	50	µg/L	50		9/22/2016 6:04:01 PM
106-46-7	1,4-Dichlorobenzene	ND	7.1	50	µg/L	50		9/22/2016 6:04:01 PM
75-71-8	Dichlorodifluoromethane	ND	18	50	µg/L	50		9/22/2016 6:04:01 PM
75-34-3	1,1-Dichloroethane	ND	5.4	50	µg/L	50		9/22/2016 6:04:01 PM
75-35-4	1,1-Dichloroethene	ND	5.4	50	µg/L	50		9/22/2016 6:04:01 PM
78-87-5	1,2-Dichloropropane	ND	5.5	50	µg/L	50		9/22/2016 6:04:01 PM
142-28-9	1,3-Dichloropropane	ND	7.8	50	µg/L	50		9/22/2016 6:04:01 PM

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EPA METHOD 8260B: VOLATILES								Analyst: AG
594-20-7	2,2-Dichloropropane	ND	8.3	100		µg/L	50	9/22/2016 6:04:01 PM
563-58-6	1,1-Dichloropropene	ND	6.7	50		µg/L	50	9/22/2016 6:04:01 PM
87-68-3	Hexachlorobutadiene	ND	9.9	50		µg/L	50	9/22/2016 6:04:01 PM
591-78-6	2-Hexanone	ND	42	500		µg/L	50	9/22/2016 6:04:01 PM
98-82-8	Isopropylbenzene	24	5.2	50	J	µg/L	50	9/22/2016 6:04:01 PM
99-87-6	4-Isopropyltoluene	ND	7.0	50		µg/L	50	9/22/2016 6:04:01 PM
108-10-1	4-Methyl-2-pentanone	ND	21	500		µg/L	50	9/22/2016 6:04:01 PM
75-09-2	Methylene Chloride	ND	9.4	150		µg/L	50	9/22/2016 6:04:01 PM
104-51-8	n-Butylbenzene	ND	8.0	150		µg/L	50	9/22/2016 6:04:01 PM
103-65-1	n-Propylbenzene	30	6.6	50	J	µg/L	50	9/22/2016 6:04:01 PM
135-98-8	sec-Butylbenzene	12	6.2	50	J	µg/L	50	9/22/2016 6:04:01 PM
100-42-5	Styrene	ND	5.5	50		µg/L	50	9/22/2016 6:04:01 PM
98-06-6	tert-Butylbenzene	ND	5.8	50		µg/L	50	9/22/2016 6:04:01 PM
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.6	50		µg/L	50	9/22/2016 6:04:01 PM
79-34-5	1,1,2,2-Tetrachloroethane	ND	6.4	100		µg/L	50	9/22/2016 6:04:01 PM
127-18-4	Tetrachloroethene (PCE)	ND	7.6	50		µg/L	50	9/22/2016 6:04:01 PM
156-60-5	trans-1,2-DCE	ND	20	50		µg/L	50	9/22/2016 6:04:01 PM
10061-02-6	trans-1,3-Dichloropropene	ND	5.2	50		µg/L	50	9/22/2016 6:04:01 PM
87-61-6	1,2,3-Trichlorobenzene	ND	5.6	50		µg/L	50	9/22/2016 6:04:01 PM
120-82-1	1,2,4-Trichlorobenzene	ND	6.6	50		µg/L	50	9/22/2016 6:04:01 PM
71-55-6	1,1,1-Trichloroethane	ND	4.6	50		µg/L	50	9/22/2016 6:04:01 PM
79-00-5	1,1,2-Trichloroethane	ND	6.4	50		µg/L	50	9/22/2016 6:04:01 PM
79-01-6	Trichloroethene (TCE)	ND	8.8	50		µg/L	50	9/22/2016 6:04:01 PM
75-69-4	Trichlorofluoromethane	ND	10	50		µg/L	50	9/22/2016 6:04:01 PM
96-18-4	1,2,3-Trichloropropane	ND	10	100		µg/L	50	9/22/2016 6:04:01 PM
75-01-4	Vinyl chloride	ND	9.8	50		µg/L	50	9/22/2016 6:04:01 PM
1330-20-7	Xylenes, Total	1200	18	75		µg/L	50	9/22/2016 6:04:01 PM
17060-07-0	Surr: 1,2-Dichloroethane-d4	92.9	0	70-130		%Rec	50	9/22/2016 6:04:01 PM
460-00-4	Surr: 4-Bromofluorobenzene	96.1	0	70-130		%Rec	50	9/22/2016 6:04:01 PM
1868-53-7	Surr: Dibromofluoromethane	82.4	0	70-130		%Rec	50	9/22/2016 6:04:01 PM
2037-26-5	Surr: Toluene-d8	100	0	70-130		%Rec	50	9/22/2016 6:04:01 PM
EPA METHOD 8015D: GASOLINE RANGE								Analyst: AG
TPH-GRO	Gasoline Range Organics (GRO)	8.6	0.75	2.5		mg/L	50	9/22/2016 6:04:01 PM
460-00-4	Surr: BFB	104	0	70-130		%Rec	50	9/22/2016 6:04:01 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609C66

Date Reported: 10/6/2016

CLIENT: Western Refining Company

Client Sample ID: Trip Blank

Project: SWMU 10

Collection Date:

Lab ID: 1609C66-002

Matrix: AQUEOUS

Received Date: 9/21/2016 4:15:00 PM

CAS#	Analyses	Result	MDL	QL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES								Analyst: AG
71-43-2	Benzene	ND	0.096	1.0	µg/L	1		9/22/2016 6:32:49 PM
108-88-3	Toluene	ND	0.12	1.0	µg/L	1		9/22/2016 6:32:49 PM
100-41-4	Ethylbenzene	ND	0.11	1.0	µg/L	1		9/22/2016 6:32:49 PM
1634-04-4	Methyl tert-butyl ether (MTBE)	ND	0.21	1.0	µg/L	1		9/22/2016 6:32:49 PM
95-63-6	1,2,4-Trimethylbenzene	ND	0.11	1.0	µg/L	1		9/22/2016 6:32:49 PM
108-67-8	1,3,5-Trimethylbenzene	ND	0.12	1.0	µg/L	1		9/22/2016 6:32:49 PM
107-06-2	1,2-Dichloroethane (EDC)	ND	0.12	1.0	µg/L	1		9/22/2016 6:32:49 PM
106-93-4	1,2-Dibromoethane (EDB)	ND	0.11	1.0	µg/L	1		9/22/2016 6:32:49 PM
91-20-3	Naphthalene	ND	0.093	2.0	µg/L	1		9/22/2016 6:32:49 PM
90-12-0	1-Methylnaphthalene	ND	0.20	4.0	µg/L	1		9/22/2016 6:32:49 PM
91-57-6	2-Methylnaphthalene	ND	0.16	4.0	µg/L	1		9/22/2016 6:32:49 PM
67-64-1	Acetone	ND	4.9	10	µg/L	1		9/22/2016 6:32:49 PM
108-86-1	Bromobenzene	ND	0.098	1.0	µg/L	1		9/22/2016 6:32:49 PM
75-27-4	Bromodichloromethane	ND	0.14	1.0	µg/L	1		9/22/2016 6:32:49 PM
75-25-2	Bromoform	ND	0.10	1.0	µg/L	1		9/22/2016 6:32:49 PM
74-83-9	Bromomethane	ND	0.78	3.0	µg/L	1		9/22/2016 6:32:49 PM
78-93-3	2-Butanone	ND	0.74	10	µg/L	1		9/22/2016 6:32:49 PM
75-15-0	Carbon disulfide	ND	0.60	10	µg/L	1		9/22/2016 6:32:49 PM
56-23-5	Carbon Tetrachloride	ND	0.11	1.0	µg/L	1		9/22/2016 6:32:49 PM
108-90-7	Chlorobenzene	ND	0.11	1.0	µg/L	1		9/22/2016 6:32:49 PM
75-00-3	Chloroethane	ND	0.19	2.0	µg/L	1		9/22/2016 6:32:49 PM
67-66-3	Chloroform	ND	0.089	1.0	µg/L	1		9/22/2016 6:32:49 PM
74-87-3	Chloromethane	ND	0.21	3.0	µg/L	1		9/22/2016 6:32:49 PM
95-49-8	2-Chlorotoluene	ND	0.40	1.0	µg/L	1		9/22/2016 6:32:49 PM
106-43-4	4-Chlorotoluene	ND	0.13	1.0	µg/L	1		9/22/2016 6:32:49 PM
156-59-2	cis-1,2-DCE	ND	0.12	1.0	µg/L	1		9/22/2016 6:32:49 PM
10061-01-5	cis-1,3-Dichloropropene	ND	0.11	1.0	µg/L	1		9/22/2016 6:32:49 PM
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.23	2.0	µg/L	1		9/22/2016 6:32:49 PM
124-48-1	Dibromochloromethane	ND	0.087	1.0	µg/L	1		9/22/2016 6:32:49 PM
74-95-3	Dibromomethane	ND	0.12	1.0	µg/L	1		9/22/2016 6:32:49 PM
95-50-1	1,2-Dichlorobenzene	ND	0.40	1.0	µg/L	1		9/22/2016 6:32:49 PM
541-73-1	1,3-Dichlorobenzene	ND	0.14	1.0	µg/L	1		9/22/2016 6:32:49 PM
106-46-7	1,4-Dichlorobenzene	ND	0.14	1.0	µg/L	1		9/22/2016 6:32:49 PM
75-71-8	Dichlorodifluoromethane	ND	0.36	1.0	µg/L	1		9/22/2016 6:32:49 PM
75-34-3	1,1-Dichloroethane	ND	0.11	1.0	µg/L	1		9/22/2016 6:32:49 PM
75-35-4	1,1-Dichloroethene	ND	0.11	1.0	µg/L	1		9/22/2016 6:32:49 PM
78-87-5	1,2-Dichloropropane	ND	0.11	1.0	µg/L	1		9/22/2016 6:32:49 PM
142-28-9	1,3-Dichloropropane	ND	0.16	1.0	µg/L	1		9/22/2016 6:32:49 PM
594-20-7	2,2-Dichloropropane	ND	0.17	2.0	µg/L	1		9/22/2016 6:32:49 PM
563-58-6	1,1-Dichloropropene	ND	0.13	1.0	µg/L	1		9/22/2016 6:32:49 PM
87-68-3	Hexachlorobutadiene	ND	0.20	1.0	µg/L	1		9/22/2016 6:32:49 PM
591-78-6	2-Hexanone	ND	0.84	10	µg/L	1		9/22/2016 6:32:49 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609C66

Date Reported: 10/6/2016

CLIENT: Western Refining Company

Client Sample ID: Trip Blank

Project: SWMU 10

Collection Date:

Lab ID: 1609C66-002

Matrix: AQUEOUS

Received Date: 9/21/2016 4:15:00 PM

CAS#	Analyses	Result	MDL	QL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES								Analyst: AG
98-82-8	Isopropylbenzene	ND	0.10	1.0	µg/L	1		9/22/2016 6:32:49 PM
99-87-6	4-Isopropyltoluene	ND	0.14	1.0	µg/L	1		9/22/2016 6:32:49 PM
108-10-1	4-Methyl-2-pentanone	ND	0.43	10	µg/L	1		9/22/2016 6:32:49 PM
75-09-2	Methylene Chloride	ND	0.19	3.0	µg/L	1		9/22/2016 6:32:49 PM
104-51-8	n-Butylbenzene	ND	0.16	3.0	µg/L	1		9/22/2016 6:32:49 PM
103-65-1	n-Propylbenzene	ND	0.13	1.0	µg/L	1		9/22/2016 6:32:49 PM
135-98-8	sec-Butylbenzene	ND	0.12	1.0	µg/L	1		9/22/2016 6:32:49 PM
100-42-5	Styrene	ND	0.11	1.0	µg/L	1		9/22/2016 6:32:49 PM
98-06-6	tert-Butylbenzene	ND	0.12	1.0	µg/L	1		9/22/2016 6:32:49 PM
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.11	1.0	µg/L	1		9/22/2016 6:32:49 PM
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.13	2.0	µg/L	1		9/22/2016 6:32:49 PM
127-18-4	Tetrachloroethene (PCE)	ND	0.15	1.0	µg/L	1		9/22/2016 6:32:49 PM
156-60-5	trans-1,2-DCE	ND	0.40	1.0	µg/L	1		9/22/2016 6:32:49 PM
10061-02-6	trans-1,3-Dichloropropene	ND	0.10	1.0	µg/L	1		9/22/2016 6:32:49 PM
87-61-6	1,2,3-Trichlorobenzene	ND	0.11	1.0	µg/L	1		9/22/2016 6:32:49 PM
120-82-1	1,2,4-Trichlorobenzene	ND	0.13	1.0	µg/L	1		9/22/2016 6:32:49 PM
71-55-6	1,1,1-Trichloroethane	ND	0.091	1.0	µg/L	1		9/22/2016 6:32:49 PM
79-00-5	1,1,2-Trichloroethane	ND	0.13	1.0	µg/L	1		9/22/2016 6:32:49 PM
79-01-6	Trichloroethene (TCE)	ND	0.18	1.0	µg/L	1		9/22/2016 6:32:49 PM
75-69-4	Trichlorofluoromethane	ND	0.20	1.0	µg/L	1		9/22/2016 6:32:49 PM
96-18-4	1,2,3-Trichloropropane	ND	0.20	2.0	µg/L	1		9/22/2016 6:32:49 PM
75-01-4	Vinyl chloride	ND	0.20	1.0	µg/L	1		9/22/2016 6:32:49 PM
1330-20-7	Xylenes, Total	ND	0.37	1.5	µg/L	1		9/22/2016 6:32:49 PM
17060-07-0	Surr: 1,2-Dichloroethane-d4	95.5	0	70-130	%Rec	1		9/22/2016 6:32:49 PM
460-00-4	Surr: 4-Bromofluorobenzene	99.6	0	70-130	%Rec	1		9/22/2016 6:32:49 PM
1868-53-7	Surr: Dibromofluoromethane	97.4	0	70-130	%Rec	1		9/22/2016 6:32:49 PM
2037-26-5	Surr: Toluene-d8	100	0	70-130	%Rec	1		9/22/2016 6:32:49 PM
EPA METHOD 8015D: GASOLINE RANGE								Analyst: AG
TPH-GRO	Gasoline Range Organics (GRO)	0.018	0.015	0.050	J	mg/L	1	9/22/2016 6:32:49 PM
460-00-4	Surr: BFB	103	0	70-130	%Rec	1		9/22/2016 6:32:49 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit



Wet Chemistry by Method 3500Cr C-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		0.000500	1	09/28/2016 11:43	<u>WG911779</u>

C

²Tc³Ss⁴Cn⁵Sr⁶Qc⁷Gl⁸Al⁹Sc

ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L861590

DATE/TIME:

09/29/16 10:48



Wet Chemistry by Method D 7511-09e2

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Cyanide	0.143		0.00500	1	09/26/2016 19:48	WG911531



WG911779

Wet Chemistry by Method 3500Cr C-2011

QUALITY CONTROL SUMMARY

L861590-01

ONE LAB. NATIONWIDE.



Method Blank (MB)

(MB) R3166742-1 09/28/16 10:25

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hexavalent Chromium	U		0.000150	0.000500

L861521-01 Original Sample (OS) • Duplicate (DUP)

(OS) L861521-01 09/28/16 11:26 • (DUP) R3166742-4 09/28/16 11:35

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	U	ND	1	0.000		20

L862074-02 Original Sample (OS) • Duplicate (DUP)

(OS) L862074-02 09/28/16 14:11 • (DUP) R3166742-7 09/28/16 14:19

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3166742-2 09/28/16 10:33 • (LCSD) R3166742-3 09/28/16 10:41

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	0.00200	0.00199	0.00198	100	99.0	90.0-110			0.000	20

L861789-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861789-01 09/28/16 12:21 • (MS) R3166742-5 09/28/16 12:29 • (MSD) R3166742-6 09/28/16 12:38

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	0.0500	ND	0.0502	0.0512	100	102	1	90.0-110			2.00	20

ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L861590

DATE/TIME:

09/29/16 10:48

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

WG911531

Wet Chemistry by Method D 7511-09e2

QUALITY CONTROL SUMMARY

L861590-02

ONE LAB. NATIONWIDE.



Method Blank (MB)

(MB) R3166228-2 09/26/16 17:54

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Cyanide	U	0.0012	0.0012	0.00500

L861341-01 Original Sample (OS) • Duplicate (DUP)

(OS) L861341-01 09/26/16 19:09 • (DUP) R3166228-7 09/26/16 19:12

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Cyanide	ND	0.000	1	0		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCS D)

(LCS) R3166228-3 09/26/16 17:57 • (LCS D) R3166228-4 09/26/16 18:00

Analyte	Spike Amount	LCS Result	LCS Rec.	LCS D Result	LCS D Rec.	Rec. Limits	LCS Qualifier	LCS D Qualifier	RPD	RPD Limits
Cyanide	0.0500	0.0550	110	0.0530	106	84-116			4	20

L861220-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861220-02 09/26/16 18:18 • (MS) R3166228-5 09/26/16 18:30 • (MSD) R3166228-6 09/26/16 18:33

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MSD Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Cyanide	0.100	ND	0.0720	0.0730	72	73	1	64-136			1	20

ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L861590

DATE/TIME:

09/29/16 10:48

1	2	3	4	5	6	7	8	9
	Tc	Ss	Cn	Sr	Qc	Gl	Al	Sc



Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Rec.	Recovery.

Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.



QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609C66

06-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-27858	SampType: MBLK			TestCode: EPA Method 200.7: Metals					
Client ID:	PBW	Batch ID: 27858			RunNo: 37678					
Prep Date:	10/3/2016	Analysis Date: 10/4/2016			SeqNo: 1173403		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	0.00066	0.0020								J
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS-27858	SampType: LCS			TestCode: EPA Method 200.7: Metals						
Client ID:	LCSW	Batch ID: 27858			RunNo: 37678						
Prep Date:	10/3/2016	Analysis Date: 10/4/2016			SeqNo: 1173404		Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	99.1	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Cadmium	0.49	0.0020	0.5000	0	99.0	85	115			
Chromium	0.49	0.0060	0.5000	0	97.4	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.3	85	115			
Iron	0.49	0.020	0.5000	0	98.9	85	115			
Manganese	0.49	0.0020	0.5000	0	97.0	85	115			
Nickel	0.48	0.010	0.5000	0	95.2	85	115			
Silver	0.095	0.0050	0.1000	0	95.0	85	115			
Vanadium	0.51	0.050	0.5000	0	103	85	115			
Zinc	0.50	0.010	0.5000	0	99.0	85	115			

Sample ID	LLLCS-27858	SampType:	LCSLL	TestCode:	EPA Method 200.7: Metals					
Client ID:	BatchQC	Batch ID:	27858	RunNo:	37678					
Prep Date:	10/3/2016	Analysis Date:	10/4/2016	SeqNo:	1173405	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0022	0.0020	0.002000	0	111	50	150			
Beryllium	0.0021	0.0020	0.002000	0	104	50	150			
Cadmium	0.0020	0.0020	0.002000	0	99.5	50	150			J
Chromium	0.0065	0.0060	0.006000	0	108	50	150			
Cobalt	0.0063	0.0060	0.006000	0	105	50	150			
Iron	0.026	0.020	0.02000	0	132	50	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609C66

06-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	LLLCS-27858		SampType: LCSLL		TestCode: EPA Method 200.7: Metals					
Client ID:	BatchQC		Batch ID: 27858		RunNo: 37678					
Prep Date:	10/3/2016		Analysis Date: 10/4/2016		SeqNo: 1173405		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	0.0021	0.0020	0.002000	0	106	50	150			
Nickel	0.0046	0.010	0.005000	0	92.8	50	150			J
Silver	0.0052	0.0050	0.005000	0	104	50	150			
Vanadium	0.010	0.050	0.01000	0	102	50	150			J
Zinc	0.0052	0.010	0.005000	0	105	50	150			J

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609C66

06-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-B	SampType: MBLK			TestCode: EPA Method 200.7: Dissolved Metals						
Client ID:	PBW	Batch ID: B37552			RunNo: 37552						
Prep Date:		Analysis Date: 9/29/2016			SeqNo: 1168337		Units: mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS-B	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals						
Client ID:	LCSW	Batch ID:	B37552	RunNo:	37552						
Prep Date:		Analysis Date:	9/29/2016	SeqNo:	1168344	Units:	mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	0.50	0.0020	0.5000	0	101	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.7	85	115			
Cadmium	0.51	0.0020	0.5000	0	101	85	115			
Chromium	0.49	0.0060	0.5000	0	98.0	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.2	85	115			
Iron	0.49	0.020	0.5000	0	97.4	85	115			
Manganese	0.49	0.0020	0.5000	0	98.8	85	115			
Nickel	0.48	0.010	0.5000	0	96.0	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Vanadium	0.50	0.050	0.5000	0	101	85	115			
Zinc	0.48	0.010	0.5000	0	96.2	85	115			

Sample ID	LLLCS-B	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals						
Client ID:	BatchQC	Batch ID:	B37552	RunNo:	37552						
Prep Date:		Analysis Date:	9/29/2016	SeqNo:	1168346	Units:	mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	0.0027	0.0020	0.002000	0	135	50	150			
Beryllium	0.0020	0.0020	0.002000	0	99.0	50	150			J
Cadmium	0.0022	0.0020	0.002000	0	110	50	150			
Chromium	0.0053	0.0060	0.006000	0	87.7	50	150			J
Cobalt	0.0063	0.0060	0.006000	0	104	50	150			
Iron	0.021	0.020	0.02000	0	105	50	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609C66

06-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	LLLCS-B		SampType: LCSLL			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	BatchQC		Batch ID: B37552			RunNo: 37552				
Prep Date:			Analysis Date: 9/29/2016			SeqNo: 1168346		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	0.0021	0.0020	0.002000	0	104	50	150			
Nickel	0.0052	0.010	0.005000	0	105	50	150			J
Silver	0.0051	0.0050	0.005000	0	102	50	150			
Vanadium	0.0097	0.050	0.01000	0	96.6	50	150			J
Zinc	0.0049	0.010	0.005000	0	98.2	50	150			J

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609C66

06-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-27815		SampType: MBLK		TestCode: EPA 200.8: Metals					
Client ID:	PBW		Batch ID: 27815		RunNo: 37638					
Prep Date:	9/30/2016		Analysis Date: 10/3/2016		SeqNo: 1171503		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	MSLCS-27815		SampType: LCS		TestCode: EPA 200.8: Metals					
Client ID:	LCSW		Batch ID: 27815		RunNo: 37638					
Prep Date:	9/30/2016		Analysis Date: 10/3/2016		SeqNo: 1171504		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.026	0.0010	0.02500	0	105	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.8	85	115			
Lead	0.013	0.00050	0.01250	0	101	85	115			
Selenium	0.025	0.0010	0.02500	0	100	85	115			

Sample ID	MSLLCS-27815		SampType: LCSLL		TestCode: EPA 200.8: Metals					
Client ID:	BatchQC		Batch ID: 27815		RunNo: 37638					
Prep Date:	9/30/2016		Analysis Date: 10/3/2016		SeqNo: 1171505		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	103	50	150			
Arsenic	0.0010	0.0010	0.001000	0	101	50	150			
Lead	0.00050	0.00050	0.0005000	0	101	50	150			
Selenium	0.0010	0.0010	0.001000	0	101	50	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609C66

06-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: B37537		RunNo: 37537					
Prep Date:			Analysis Date: 9/28/2016		SeqNo: 1168521		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Arsenic	0.025	0.0010	0.02500	0	99.5	85	115			
Lead	0.013	0.00050	0.01250	0	101	85	115			
Selenium	0.024	0.0010	0.02500	0	97.5	85	115			

Sample ID LLCS		SampType: LCSLL			TestCode: EPA 200.8: Dissolved Metals					
Client ID: BatchQC		Batch ID: B37537			RunNo: 37537					
Prep Date:		Analysis Date: 9/28/2016			SeqNo: 1168522		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0010	0.0010	0.001000	0	104	50	150			
Arsenic	0.0010	0.0010	0.001000	0	103	50	150			
Lead	0.00053	0.00050	0.0005000	0	106	50	150			
Selenium	0.00098	0.0010	0.001000	0	98.4	50	150			J

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: B37537			RunNo: 37537					
Prep Date:		Analysis Date: 9/28/2016			SeqNo: 1168523		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00070	0.0010								J
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609C66

06-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID MB	SampType: mblk		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R37435		RunNo: 37435							
Prep Date:	Analysis Date: 9/22/2016		SeqNo: 1163735		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID LCS	SampType: lcs		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R37435		RunNo: 37435							
Prep Date:	Analysis Date: 9/22/2016		SeqNo: 1163736		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	10	0.50	10.00	0	100	90	110			

Sample ID 1609C66-001EMS	SampType: ms		TestCode: EPA Method 300.0: Anions							
Client ID: SWMU 10-25-GW	Batch ID: R37435		RunNo: 37435							
Prep Date:	Analysis Date: 9/22/2016		SeqNo: 1163742		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	160	2.5	50.00	106.8	108	83	118			

Sample ID 1609C66-001EMSD	SampType: msd		TestCode: EPA Method 300.0: Anions							
Client ID: SWMU 10-25-GW	Batch ID: R37435		RunNo: 37435							
Prep Date:	Analysis Date: 9/22/2016		SeqNo: 1163743		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	170	2.5	50.00	106.8	117	83	118	2.58	20	

Sample ID MB	SampType: mblk		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R37487		RunNo: 37487							
Prep Date:	Analysis Date: 9/26/2016		SeqNo: 1165787		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID LCS	SampType: lcs		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R37487		RunNo: 37487							
Prep Date:	Analysis Date: 9/26/2016		SeqNo: 1165788		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	97.0	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609C66

06-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS-27667		SampType: LCS			TestCode: EPA Method 8015M/D: Diesel Range				
Client ID:	LCSW		Batch ID: 27667			RunNo: 37473				
Prep Date:	9/23/2016		Analysis Date: 9/26/2016			SeqNo: 1165395		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.5	1.0	5.000	0	110	63.2	155			
Surr: DNOP	0.53		0.5000		107	77.1	144			

Sample ID	MB-27667		SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range				
Client ID:	PBW		Batch ID: 27667			RunNo: 37473				
Prep Date:	9/23/2016		Analysis Date: 9/26/2016			SeqNo: 1165396		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.1		1.000		108	77.1	144			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609C66

06-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: W37409			RunNo: 37409					
Prep Date:		Analysis Date: 9/22/2016			SeqNo: 1162560		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	19	1.0	20.00	0	95.8	70	130			
Chlorobenzene	19	1.0	20.00	0	95.6	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	96.4	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	87.4	70	130			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		99.4	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.7	70	130			
Surr: Toluene-d8	9.7		10.00		97.5	70	130			

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: W37409			RunNo: 37409					
Prep Date:		Analysis Date: 9/22/2016			SeqNo: 1162561		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609C66

06-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	W37409	RunNo:	37409					
Prep Date:		Analysis Date:	9/22/2016	SeqNo:	1162561	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609C66

06-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: W37409			RunNo: 37409					
Prep Date:		Analysis Date: 9/22/2016			SeqNo: 1162561		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.1	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		96.9	70	130			
Surr: Dibromofluoromethane	9.7		10.00		96.6	70	130			
Surr: Toluene-d8	9.5		10.00		95.2	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609C66

06-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	1609c66-001dms	SampType:	MS	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	SWMU 10-25-GW	Batch ID:	27668	RunNo:	37545					
Prep Date:	9/23/2016	Analysis Date:	9/28/2016	SeqNo:	1168031	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	58	10	100.0	6.480	51.1	27.6	123			
4-Chloro-3-methylphenol	130	10	200.0	0	62.8	29.3	126			
2-Chlorophenol	100	10	200.0	0	51.2	15	133			
1,4-Dichlorobenzene	38	10	100.0	0	37.7	17.6	127			
2,4-Dinitrotoluene	56	10	100.0	0	55.8	38.9	98.5			
N-Nitrosodi-n-propylamine	64	10	100.0	0	63.8	25.9	131			
4-Nitrophenol	33	10	200.0	0	16.4	15	102			
Pentachlorophenol	75	20	200.0	0	37.6	15	120			
Phenol	65	10	200.0	0	32.6	15	100			
Pyrene	60	10	100.0	0	59.5	22.8	126			
1,2,4-Trichlorobenzene	41	10	100.0	0	41.0	15	143			
Surr: 2-Fluorophenol	49		200.0		24.7	15	123			
Surr: Phenol-d5	58		200.0		28.8	4.13	124			
Surr: 2,4,6-Tribromophenol	95		200.0		47.6	18.4	134			
Surr: Nitrobenzene-d5	49		100.0		48.8	28.8	134			
Surr: 2-Fluorobiphenyl	43		100.0		43.2	35.9	125			
Surr: 4-Terphenyl-d14	49		100.0		48.8	15	146			

Sample ID	1609c66-001dmsd	SampType:	MSD	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	SWMU 10-25-GW	Batch ID:	27668	RunNo:	37545					
Prep Date:	9/23/2016	Analysis Date:	9/28/2016	SeqNo:	1168032	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	54	10	100.0	6.480	47.4	27.6	123	6.60	31.3	
4-Chloro-3-methylphenol	110	10	200.0	0	55.1	29.3	126	13.1	29	
2-Chlorophenol	90	10	200.0	0	44.8	15	133	13.5	28.4	
1,4-Dichlorobenzene	36	10	100.0	0	36.3	17.6	127	3.89	28.2	
2,4-Dinitrotoluene	49	10	100.0	0	48.6	38.9	98.5	13.8	22.9	
N-Nitrosodi-n-propylamine	59	10	100.0	0	58.7	25.9	131	8.30	28.8	
4-Nitrophenol	18	10	200.0	0	9.01	15	102	58.3	41.5	RS
Pentachlorophenol	46	20	200.0	0	23.0	15	120	47.9	45.1	R
Phenol	55	10	200.0	0	27.5	15	100	17.1	33.9	
Pyrene	56	10	100.0	0	56.4	22.8	126	5.49	33.6	
1,2,4-Trichlorobenzene	38	10	100.0	0	38.4	15	143	6.50	28.2	
Surr: 2-Fluorophenol	33		200.0		16.3	15	123	0	0	
Surr: Phenol-d5	51		200.0		25.7	4.13	124	0	0	
Surr: 2,4,6-Tribromophenol	77		200.0		38.6	18.4	134	0	0	
Surr: Nitrobenzene-d5	46		100.0		45.6	28.8	134	0	0	
Surr: 2-Fluorobiphenyl	37		100.0		37.3	35.9	125	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609C66

06-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	1609c66-001dmsd	SampType:	MSD	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	SWMU 10-25-GW	Batch ID:	27668	RunNo:	37545					
Prep Date:	9/23/2016	Analysis Date:	9/28/2016	SeqNo:	1168032	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	46		100.0		45.9	15	146	0	0	

Sample ID	mb-27668	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	27668	RunNo:	37545					
Prep Date:	9/23/2016	Analysis Date:	9/28/2016	SeqNo:	1168035	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	5.0	20								J
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	2.9	10								J
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609C66

06-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-27668	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	27668	RunNo:	37545					
Prep Date:	9/23/2016	Analysis Date:	9/28/2016	SeqNo:	1168035	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609C66

06-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID mb-27668	SampType: MBLK			TestCode: EPA Method 8270C: Semivolatiles						
Client ID: PBW	Batch ID: 27668			RunNo: 37545						
Prep Date: 9/23/2016	Analysis Date: 9/28/2016			SeqNo: 1168035		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	120		200.0		58.5	15	123			
Surr: Phenol-d5	81		200.0		40.6	4.13	124			
Surr: 2,4,6-Tribromophenol	150		200.0		74.1	18.4	134			
Surr: Nitrobenzene-d5	67		100.0		67.1	28.8	134			
Surr: 2-Fluorobiphenyl	52		100.0		52.4	35.9	125			
Surr: 4-Terphenyl-d14	64		100.0		64.2	15	146			

Sample ID lcs-27668	SampType: LCS			TestCode: EPA Method 8270C: Semivolatiles						
Client ID: LCSW	Batch ID: 27668			RunNo: 37545						
Prep Date: 9/23/2016	Analysis Date: 9/28/2016			SeqNo: 1168036		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	71	10	100.0	0	71.3	35	113			
4-Chloro-3-methylphenol	170	10	200.0	0	83.3	40.7	114			
2-Chlorophenol	150	10	200.0	0	72.9	37.6	113			
1,4-Dichlorobenzene	60	10	100.0	0	60.2	37.7	106			
2,4-Dinitrotoluene	71	10	100.0	0	70.6	37	91			
N-Nitrosodi-n-propylamine	79	10	100.0	0	78.8	45.4	105			
4-Nitrophenol	120	10	200.0	0	61.2	33.4	104			
Pentachlorophenol	140	20	200.0	0	68.9	29.5	94.9			
Phenol	120	10	200.0	0	62.3	30.6	119			
Pyrene	75	10	100.0	0	74.8	26.2	120			
1,2,4-Trichlorobenzene	66	10	100.0	0	66.4	39.9	125			
Surr: 2-Fluorophenol	140		200.0		68.6	15	123			
Surr: Phenol-d5	120		200.0		60.9	4.13	124			
Surr: 2,4,6-Tribromophenol	160		200.0		80.3	18.4	134			
Surr: Nitrobenzene-d5	67		100.0		66.7	28.8	134			
Surr: 2-Fluorobiphenyl	60		100.0		60.1	35.9	125			
Surr: 4-Terphenyl-d14	57		100.0		57.0	15	146			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609C66

06-Oct-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	1609c66-001ams	SampType:	MS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	SWMU 10-25-GW	Batch ID:	R37409	RunNo:	37484					
Prep Date:		Analysis Date:	9/26/2016	SeqNo:	1165543	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	2.5	25.00	8.650	64.1	53.8	128			
Surr: BFB	500		500.0		100	70	130			

Sample ID	1609c66-001amsd	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	SWMU 10-25-GW	Batch ID:	R37409	RunNo:	37484					
Prep Date:		Analysis Date:	9/26/2016	SeqNo:	1165544	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	2.5	25.00	8.650	57.4	53.8	128	7.05	20	
Surr: BFB	500		500.0		99.8	70	130	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified



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

Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1609C66

RcptNo: 1

Received by/date: AT 09/21/16

Logged By: Anne Thorne 9/21/2016 4:15:00 PM

Completed By: Anne Thorne 9/22/2016

Reviewed By: TO 09/22/16

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Client

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°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: 31
(<2 or >12 unless noted)
Adjusted? NO
Checked by: jc

Special Handling (if applicable)

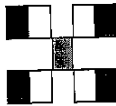
16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

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	2.3	Good	Yes			



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Turn-Around Time: ☐ Standard ☒ Rush

Project Name: SWMU 10

Project #:

Project Manager: ED RIEGE

Sampler: TRACY PAYNE

On loc: ☒ Yes ☐ No

Sample Temperature: 23

Container Type and #

Preservative Type

HEAL No.

1609606

Date

Time

Matrix

Sample Request ID

7/21/16 0850 WATER SWMU 10-25-GW

40 ML
VOA-6

HCL

001

1 LITER
AMBER-2

NEAT

001

250 ML
AMBER 1

NEAT

001

500 ML
PLASTIC-1

HNO3

001

125 ML
PLASTIC-1

HNO3

001

125 ML
PLASTIC-1

H2SO4

001

500 ML
PLASTIC-1

NEAT

001

50 ML
PLASTIC-1

NH42SO4

001

500 ML
PLASTIC-1

NAOH

001

40 ML
VOA-4

HCL

002

7/21/16 — WATER TRIP BLANK

HCL

002

Date: 7/21/16

Time: 1010

Relinquished by: [Signature]

Received by: [Signature]

Date: 7/21/16

Time: 1400

Date: 7/21/16

Time: 1515

Relinquished by: [Signature]

Received by: [Signature]

Date: 7/21/16

Time: 1615

Remarks:

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

WESTERN REFINING SOUTHWEST, INC.
GALLUP REFINERY - SWMU 10
METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES
AND WATER QA/QC SAMPLES
TOTAL METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES
AND WATER QA/QC SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0



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

October 05, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10

OrderNo.: 1505001

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 4/30/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 05, 2015.

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, Inc.

Analytical Report

Lab Order 1505001

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-1-GW

Project: SWMU 10

Collection Date: 4/29/2015 5:10:00 PM

Lab ID: 1505001-001

Matrix: AQUEOUS

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH	
Diesel Range Organics (DRO)	ND	0.91	1.0		mg/L	1	5/1/2015 6:25:02 PM	18985
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/1/2015 6:25:02 PM	18985
Surr: DNOP	109	0	76.5-150		%REC	1	5/1/2015 6:25:02 PM	18985
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	5/4/2015 5:29:47 PM	R25939
Surr: BFB	106	0	80-120		%REC	1	5/4/2015 5:29:47 PM	R25939
EPA METHOD 300.0: ANIONS							Analyst: LGT	
Fluoride	ND	0.58	2.0		mg/L	20	5/1/2015 12:05:38 PM	R25920
Chloride	3600	67	250		mg/L	500	5/6/2015 8:14:26 PM	R26026
Sulfate	340	2.3	10		mg/L	20	5/1/2015 12:05:38 PM	R25920
EPA METHOD 200.7: DISSOLVED METALS							Analyst: JLF	
Barium	0.45	0.00095	0.0020		mg/L	1	5/6/2015 6:49:37 PM	R26030
Beryllium	ND	0.00031	0.0020		mg/L	1	5/6/2015 6:49:37 PM	R26030
Cadmium	ND	0.00097	0.0020		mg/L	1	5/6/2015 6:49:37 PM	R26030
Chromium	ND	0.0018	0.0060		mg/L	1	5/6/2015 6:49:37 PM	R26030
Cobalt	0.0084	0.0013	0.0060		mg/L	1	5/6/2015 6:49:37 PM	R26030
Iron	0.58	0.0073	0.020	*	mg/L	1	5/6/2015 6:49:37 PM	R26030
Manganese	0.93	0.00027	0.0020	*	mg/L	1	5/6/2015 6:49:37 PM	R26030
Nickel	0.21	0.0021	0.010	*	mg/L	1	5/6/2015 6:49:37 PM	R26030
Silver	ND	0.0012	0.0050		mg/L	1	5/6/2015 6:49:37 PM	R26030
Vanadium	ND	0.0015	0.050		mg/L	1	5/6/2015 6:49:37 PM	R26030
Zinc	0.029	0.0028	0.010		mg/L	1	5/6/2015 6:49:37 PM	R26030
EPA METHOD 200.7: METALS							Analyst: JLF	
Barium	0.74	0.00095	0.0020		mg/L	1	5/5/2015 5:25:11 PM	19025
Beryllium	0.0024	0.00031	0.0020		mg/L	1	5/5/2015 5:25:11 PM	19025
Cadmium	ND	0.00097	0.0020		mg/L	1	5/5/2015 5:25:11 PM	19025
Chromium	0.013	0.0022	0.0060		mg/L	1	5/5/2015 5:25:11 PM	19025
Cobalt	0.012	0.0013	0.0060		mg/L	1	5/5/2015 5:25:11 PM	19025
Iron	16	0.36	1.0	*	mg/L	50	5/6/2015 4:49:53 PM	19025
Manganese	1.2	0.0076	0.010	*	mg/L	5	5/6/2015 4:44:00 PM	19025
Nickel	0.19	0.0023	0.010	*	mg/L	1	5/5/2015 5:25:11 PM	19025
Silver	ND	0.0021	0.0050		mg/L	1	5/5/2015 5:25:11 PM	19025
Vanadium	ND	0.0015	0.050		mg/L	1	5/5/2015 5:25:11 PM	19025
Zinc	0.071	0.0036	0.010		mg/L	1	5/6/2015 4:42:01 PM	19025
EPA 200.8: DISSOLVED METALS							Analyst: DBD	
Antimony	ND	0.00029	0.0020		mg/L	2	5/11/2015 2:28:51 PM	R26119
Arsenic	ND	0.0013	0.020		mg/L	20	5/12/2015 4:56:55 PM	R26138

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505001

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-1-GW

Project: SWMU 10

Collection Date: 4/29/2015 5:10:00 PM

Lab ID: 1505001-001

Matrix: AQUEOUS

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: DBD	
Lead	ND	0.000053	0.0020		mg/L	2	5/11/2015 2:28:51 PM	R26119
Selenium	0.030	0.0039	0.020		mg/L	20	5/12/2015 4:56:55 PM	R26138
EPA 200.8: METALS							Analyst: DBD	
Antimony	0.0011	0.00022	0.0010		mg/L	1	5/8/2015 1:27:40 PM	19025
Arsenic	ND	0.0058	0.020		mg/L	20	5/15/2015 12:08:55 PM	19025
Lead	0.017	0.000069	0.0010	*	mg/L	1	5/8/2015 1:27:40 PM	19025
Selenium	ND	0.0097	0.050		mg/L	50	5/15/2015 12:28:41 PM	19025
EPA METHOD 245.1: MERCURY							Analyst: MED	
Mercury	ND	0.000059	0.00020		mg/L	1	5/5/2015 2:20:16 PM	19047
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	1.9	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Acenaphthylene	ND	1.9	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Aniline	ND	1.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Anthracene	ND	1.6	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Azobenzene	ND	2.0	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Benzoic acid	ND	1.0	20		µg/L	1	5/5/2015 9:03:51 PM	18996
Benzyl alcohol	ND	1.2	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/5/2015 9:03:51 PM	18996
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Carbazole	ND	1.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/5/2015 9:03:51 PM	18996
4-Chloroaniline	ND	1.9	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2-Chlorophenol	ND	1.2	10		µg/L	1	5/5/2015 9:03:51 PM	18996
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Chrysene	ND	2.2	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/5/2015 9:03:51 PM	18996

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505001

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-1-GW

Project: SWMU 10

Collection Date: 4/29/2015 5:10:00 PM

Lab ID: 1505001-001

Matrix: AQUEOUS

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Dibenzofuran	ND	1.9	10		µg/L	1	5/5/2015 9:03:51 PM	18996
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/5/2015 9:03:51 PM	18996
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/5/2015 9:03:51 PM	18996
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/5/2015 9:03:51 PM	18996
3,3'-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Diethyl phthalate	ND	1.7	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/5/2015 9:03:51 PM	18996
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/5/2015 9:03:51 PM	18996
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/5/2015 9:03:51 PM	18996
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/5/2015 9:03:51 PM	18996
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Fluoranthene	ND	1.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Fluorene	ND	1.7	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Hexachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Hexachloroethane	ND	1.6	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Isophorone	ND	2.0	10		µg/L	1	5/5/2015 9:03:51 PM	18996
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2-Methylphenol	ND	1.2	10		µg/L	1	5/5/2015 9:03:51 PM	18996
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/5/2015 9:03:51 PM	18996
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/5/2015 9:03:51 PM	18996
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Naphthalene	ND	1.8	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2-Nitroaniline	ND	1.8	10		µg/L	1	5/5/2015 9:03:51 PM	18996
3-Nitroaniline	ND	1.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
4-Nitroaniline	ND	1.2	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Nitrobenzene	ND	1.5	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2-Nitrophenol	ND	1.2	10		µg/L	1	5/5/2015 9:03:51 PM	18996
4-Nitrophenol	ND	1.4	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Pentachlorophenol	ND	1.1	20		µg/L	1	5/5/2015 9:03:51 PM	18996
Phenanthrene	ND	2.0	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Phenol	ND	1.1	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Pyrene	ND	2.3	10		µg/L	1	5/5/2015 9:03:51 PM	18996

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505001

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-1-GW

Project: SWMU 10

Collection Date: 4/29/2015 5:10:00 PM

Lab ID: 1505001-001

Matrix: AQUEOUS

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Pyridine	ND	1.7	10		µg/L	1	5/5/2015 9:03:51 PM	18996
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/5/2015 9:03:51 PM	18996
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/5/2015 9:03:51 PM	18996
Surr: 2-Fluorophenol	33.0	0	14.9-111		%REC	1	5/5/2015 9:03:51 PM	18996
Surr: Phenol-d5	33.2	0	11.3-108		%REC	1	5/5/2015 9:03:51 PM	18996
Surr: 2,4,6-Tribromophenol	40.5	0	15.7-154		%REC	1	5/5/2015 9:03:51 PM	18996
Surr: Nitrobenzene-d5	73.6	0	47.8-106		%REC	1	5/5/2015 9:03:51 PM	18996
Surr: 2-Fluorobiphenyl	68.1	0	21.3-123		%REC	1	5/5/2015 9:03:51 PM	18996
Surr: 4-Terphenyl-d14	69.5	0	14.3-135		%REC	1	5/5/2015 9:03:51 PM	18996
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Benzene	4.7	0.065	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Toluene	ND	0.11	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Methyl tert-butyl ether (MTBE)	6.1	0.17	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Naphthalene	ND	0.22	2.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Acetone	ND	0.94	10		µg/L	1	5/6/2015 12:44:51 PM	R26017
Bromobenzene	ND	0.11	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Bromoform	ND	0.16	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Bromomethane	ND	1.2	3.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
2-Butanone	ND	0.36	10		µg/L	1	5/6/2015 12:44:51 PM	R26017
Carbon disulfide	ND	0.67	10		µg/L	1	5/6/2015 12:44:51 PM	R26017
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Chloroethane	ND	0.10	2.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Chloroform	ND	0.21	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Chloromethane	ND	0.17	3.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/6/2015 12:44:51 PM	R26017

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505001

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-1-GW

Project: SWMU 10

Collection Date: 4/29/2015 5:10:00 PM

Lab ID: 1505001-001

Matrix: AQUEOUS

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Dibromomethane	ND	0.23	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
2-Hexanone	ND	0.48	10		µg/L	1	5/6/2015 12:44:51 PM	R26017
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/6/2015 12:44:51 PM	R26017
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Styrene	ND	0.11	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/6/2015 12:44:51 PM	R26017
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/6/2015 12:44:51 PM	R26017
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%REC	1	5/6/2015 12:44:51 PM	R26017
Surr: 4-Bromofluorobenzene	99.6	0	70-130		%REC	1	5/6/2015 12:44:51 PM	R26017

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505001

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-1-GW

Project: SWMU 10

Collection Date: 4/29/2015 5:10:00 PM

Lab ID: 1505001-001

Matrix: AQUEOUS

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Surr: Dibromofluoromethane	94.8	0	70-130		%REC	1	5/6/2015 12:44:51 PM	R26017
Surr: Toluene-d8	103	0	70-130		%REC	1	5/6/2015 12:44:51 PM	R26017

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505001

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: Trip Blank

Project: SWMU 10

Collection Date:

Lab ID: 1505001-002

Matrix: TRIP BLANK

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: RAA	
Benzene	ND	0.065	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Toluene	ND	0.11	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Naphthalene	ND	0.22	2.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Acetone	ND	0.94	10		µg/L	1	5/7/2015 3:29:51 PM	R26051
Bromobenzene	ND	0.11	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Bromoform	ND	0.16	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Bromomethane	ND	1.2	3.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
2-Butanone	ND	0.36	10		µg/L	1	5/7/2015 3:29:51 PM	R26051
Carbon disulfide	ND	0.67	10		µg/L	1	5/7/2015 3:29:51 PM	R26051
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Chloroethane	ND	0.10	2.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Chloroform	ND	0.21	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Chloromethane	ND	0.17	3.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Dibromomethane	ND	0.23	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/7/2015 3:29:51 PM	R26051

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505001

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: Trip Blank

Project: SWMU 10

Collection Date:

Lab ID: 1505001-002

Matrix: TRIP BLANK

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: RAA	
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
2-Hexanone	ND	0.48	10		µg/L	1	5/7/2015 3:29:51 PM	R26051
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/7/2015 3:29:51 PM	R26051
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Styrene	ND	0.11	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/7/2015 3:29:51 PM	R26051
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/7/2015 3:29:51 PM	R26051
Surr: 1,2-Dichloroethane-d4	125	0	70-130		%REC	1	5/7/2015 3:29:51 PM	R26051
Surr: 4-Bromofluorobenzene	106	0	70-130		%REC	1	5/7/2015 3:29:51 PM	R26051
Surr: Dibromofluoromethane	107	0	70-130		%REC	1	5/7/2015 3:29:51 PM	R26051
Surr: Toluene-d8	93.7	0	70-130		%REC	1	5/7/2015 3:29:51 PM	R26051

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	



12065 Lebanon Rd.
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 05, 2015
Description :
Sample ID : 1505001-001H SWMU 10-1-GW
Collected By :
Collection Date : 04/29/15 17:10

ESC Sample # : L762967-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	0.046	0.0050	mg/l	4500CN E-2011	05/11/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 05/12/15 10:42 Printed: 05/12/15 10:43



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(615) 758-5858
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 05, 2015
Description :
Sample ID : 1505001-001I SWMU 10-1-GW
Collected By :
Collection Date : 04/29/15 17:10

ESC Sample # : L762967-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	3500Cr C-2011	05/11/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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

Reported: 05/12/15 10:42 Printed: 05/12/15 10:43
L762967-02 (CR6ICFFP) - pH=7.53



YOUR LAB OF CHOICE

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762967

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

Tax I.D. 62-0814289

Est. 1970

May 12, 2015

Analyte	Result	Laboratory Blank Units	% Rec	Limit	Batch	Date Analyzed
Cyanide	< .005	mg/l			WG787731	05/11/15 16:24
Hexavalent Chromium	< .0005	mg/l			WG788013	05/11/15 12:19

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Cyanide	mg/l	0.0	0.0	0.0	20	L763281-02	WG787731
Cyanide	mg/l	0.0	0.00700	NA	20	L763288-02	WG787731
Hexavalent Chromium	mg/l	0.000540	0.000510	5.71	20	L762964-02	WG788013
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L763563-02	WG788013

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Cyanide	mg/l	.1	0.0990	99.0	90-110	WG787731
Hexavalent Chromium	mg/l	.002	0.00208	104.	90-110	WG788013

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Cyanide	mg/l	0.0988	0.0990	99.0	90-110	0.202	20	WG787731
Hexavalent Chromium	mg/l	0.00196	0.00208	98.0	90-110	5.94	20	WG788013

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Cyanide	mg/l	0.205	0.0	.2	100.	90-110	L762964-01	WG787731
Hexavalent Chromium	mg/l	0.0566	0.0	.05	110.*	90-110	L763173-02	WG788013

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Cyanide	mg/l	0.188	0.205	94.0	90-110	8.65	20	L762964-01	WG787731
Hexavalent Chromium	mg/l	0.0564	0.0566	113.*	90-110	0.354	20	L763173-02	WG788013

Batch number /Run number / Sample number cross reference

WG787731: R3036222: L762967-01
WG788013: R3036316: L762967-02

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505001

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19025	SampType: MBLK			TestCode: EPA Method 200.7: Metals					
Client ID:	PBW	Batch ID: 19025			RunNo: 25975					
Prep Date:	5/4/2015	Analysis Date: 5/5/2015			SeqNo: 769760		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								

Sample ID	LCS-19025		SampType: LCS		TestCode: EPA Method 200.7: Metals					
Client ID:	LCSW		Batch ID: 19025		RunNo: 25975					
Prep Date:	5/4/2015		Analysis Date: 5/5/2015		SeqNo: 769761		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.5	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.3	85	115			
Cadmium	0.49	0.0020	0.5000	0	97.7	85	115			
Chromium	0.48	0.0060	0.5000	0	96.3	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.0	85	115			
Iron	0.48	0.020	0.5000	0	95.9	85	115			
Manganese	0.47	0.0020	0.5000	0	93.6	85	115			
Nickel	0.47	0.010	0.5000	0	94.5	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Vanadium	0.50	0.050	0.5000	0	99.7	85	115			

Sample ID	MB-19025		SampType: MBLK		TestCode: EPA Method 200.7: Metals					
Client ID:	PBW		Batch ID: 19025		RunNo: 25986					
Prep Date:	5/4/2015		Analysis Date: 5/5/2015		SeqNo: 770113		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	ND	0.010								

Sample ID	LCS-19025		SampType: LCS		TestCode: EPA Method 200.7: Metals					
Client ID:	LCSW		Batch ID: 19025		RunNo: 25986					
Prep Date:	5/4/2015		Analysis Date: 5/5/2015		SeqNo: 770114		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.51	0.010	0.5000	0	102	85	115			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505001

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Metals					
Client ID:	PBW	Batch ID:	R26030	RunNo:	26030					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	771646	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Metals					
Client ID:	LCSW	Batch ID:	R26030	RunNo:	26030					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	771647	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.7	85	115			
Beryllium	0.48	0.0020	0.5000	0	96.6	85	115			
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Chromium	0.48	0.0060	0.5000	0	95.1	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.0	85	115			
Iron	0.49	0.020	0.5000	0	98.8	85	115			
Manganese	0.48	0.0020	0.5000	0	96.8	85	115			
Nickel	0.47	0.010	0.5000	0	93.2	85	115			
Silver	0.096	0.0050	0.1000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.5	85	115			
Zinc	0.46	0.010	0.5000	0	92.0	85	115			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505001

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R26030	RunNo:	26030					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	771648	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R26030	RunNo:	26030					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	771649	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	96.0	85	115			
Beryllium	0.49	0.0020	0.5000	0	97.5	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Chromium	0.49	0.0060	0.5000	0	97.7	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.2	85	115			
Iron	0.50	0.020	0.5000	0	101	85	115			
Manganese	0.49	0.0020	0.5000	0	97.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.7	85	115			
Silver	0.094	0.0050	0.1000	0	93.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.2	85	115			
Zinc	0.47	0.010	0.5000	0	93.8	85	115			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505001

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19025		SampType: MBLK		TestCode: EPA 200.8: Metals					
Client ID:	PBW		Batch ID: 19025		RunNo: 25987					
Prep Date:	5/4/2015		Analysis Date: 5/5/2015		SeqNo: 770247		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.0010								

Sample ID	MB-19025	SampType: MBLK		TestCode: EPA 200.8: Metals						
Client ID:	PBW	Batch ID: 19025		RunNo: 25987						
Prep Date:	5/4/2015	Analysis Date: 5/5/2015		SeqNo: 770248			Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Metals					
Client ID:	LCSW		Batch ID: R26119		RunNo: 26119					
Prep Date:			Analysis Date: 5/11/2015		SeqNo: 774818		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Metals					
Client ID:	LCSW		Batch ID: R26119		RunNo: 26119					
Prep Date:			Analysis Date: 5/11/2015		SeqNo: 774819		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Metals					
Client ID:	PBW	Batch ID: R26119			RunNo: 26119					
Prep Date:		Analysis Date: 5/11/2015			SeqNo: 774821		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								

Sample ID	MB	SampType:	MBLK			TestCode:	EPA 200.8: Metals				
Client ID:	PBW	Batch ID:	R26119			RunNo:	26119				
Prep Date:		Analysis Date:	5/11/2015			SeqNo:	774822	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505001

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Metals					
Client ID:	PBW	Batch ID:	R26119	RunNo:	26119					
Prep Date:		Analysis Date:	5/11/2015	SeqNo:	774822	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA 200.8: Metals					
Client ID:	LCSW	Batch ID:	R26138	RunNo:	26138					
Prep Date:		Analysis Date:	5/12/2015	SeqNo:	775338	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.1	85	115			
Selenium	0.024	0.0010	0.02500	0	95.6	85	115			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Metals					
Client ID:	PBW	Batch ID:	R26138	RunNo:	26138					
Prep Date:		Analysis Date:	5/12/2015	SeqNo:	775342	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA 200.8: Metals					
Client ID:	LCSW	Batch ID:	R26138	RunNo:	26138					
Prep Date:		Analysis Date:	5/12/2015	SeqNo:	775769	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.6	85	115			
Selenium	0.024	0.0010	0.02500	0	96.4	85	115			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Metals					
Client ID:	PBW	Batch ID:	R26138	RunNo:	26138					
Prep Date:		Analysis Date:	5/12/2015	SeqNo:	775770	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505001

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID LCS	SampType: LCS			TestCode: EPA 200.8: Dissolved Metals						
Client ID: LCSW	Batch ID: R26119			RunNo: 26119						
Prep Date:	Analysis Date: 5/11/2015			SeqNo: 774863		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			

Sample ID LCS	SampType: LCS			TestCode: EPA 200.8: Dissolved Metals						
Client ID: LCSW	Batch ID: R26119			RunNo: 26119						
Prep Date:	Analysis Date: 5/11/2015			SeqNo: 774864		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			

Sample ID MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals						
Client ID: PBW	Batch ID: R26119			RunNo: 26119						
Prep Date:	Analysis Date: 5/11/2015			SeqNo: 774865		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								

Sample ID MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals						
Client ID: PBW	Batch ID: R26119			RunNo: 26119						
Prep Date:	Analysis Date: 5/11/2015			SeqNo: 774866		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								

Sample ID LCS	SampType: LCS			TestCode: EPA 200.8: Dissolved Metals						
Client ID: LCSW	Batch ID: R26138			RunNo: 26138						
Prep Date:	Analysis Date: 5/12/2015			SeqNo: 775346		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.1	85	115			
Selenium	0.024	0.0010	0.02500	0	95.6	85	115			

Sample ID MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals						
Client ID: PBW	Batch ID: R26138			RunNo: 26138						
Prep Date:	Analysis Date: 5/12/2015			SeqNo: 775348		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505001

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R26138			RunNo: 26138					
Prep Date:		Analysis Date: 5/12/2015			SeqNo: 775348		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Sample ID	LCS	SampType: LCS			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW	Batch ID: R26138			RunNo: 26138					
Prep Date:		Analysis Date: 5/12/2015			SeqNo: 775777		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.6	85	115			
Selenium	0.024	0.0010	0.02500	0	96.4	85	115			

Sample ID	MB	SampType: MBLK		TestCode: EPA 200.8: Dissolved Metals						
Client ID:	PBW	Batch ID: R26138		RunNo: 26138						
Prep Date:		Analysis Date: 5/12/2015		SeqNo: 775778		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505001

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19047	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	19047	RunNo:	25969					
Prep Date:	5/5/2015	Analysis Date:	5/5/2015	SeqNo:	769643	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-19047	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	19047	RunNo:	25969					
Prep Date:	5/5/2015	Analysis Date:	5/5/2015	SeqNo:	769644	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	101	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505001

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R25920	RunNo:	25920					
Prep Date:		Analysis Date:	5/1/2015	SeqNo:	768219	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Sulfate	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R25920	RunNo:	25920					
Prep Date:		Analysis Date:	5/1/2015	SeqNo:	768220	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	97.4	90	110			
Sulfate	9.7	0.50	10.00	0	97.4	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R25920	RunNo:	25920					
Prep Date:		Analysis Date:	5/1/2015	SeqNo:	768273	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Sulfate	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R25920	RunNo:	25920					
Prep Date:		Analysis Date:	5/1/2015	SeqNo:	768274	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	102	90	110			
Sulfate	9.7	0.50	10.00	0	97.1	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R26026	RunNo:	26026					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	771570	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R26026	RunNo:	26026					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	771571	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.9	0.50	5.000	0	97.9	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505001

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-18985	SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW	Batch ID: 18985			RunNo: 25902					
Prep Date:	4/30/2015	Analysis Date: 5/1/2015			SeqNo: 767854		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.0		1.000		101	76.5	150			

Sample ID	LCS-18985		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 18985		RunNo: 25902					
Prep Date:	4/30/2015		Analysis Date: 5/1/2015		SeqNo: 767970		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.2	1.0	5.000	0	104	60.1	156			
Surr: DNOP	0.52		0.5000		105	76.5	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505001

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5ML RB	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID: R25939			RunNo: 25939					
Prep Date:		Analysis Date: 5/4/2015			SeqNo: 768862		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		88.4	80	120			

Sample ID	2.5UG GRO LCS	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID: R25939			RunNo: 25939					
Prep Date:		Analysis Date: 5/4/2015			SeqNo: 768863		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.2	80	120			
Surr: BFB	18		20.00		91.1	80	120			

Sample ID	1505001-001BMS		SampType: MS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	SWMU 10-1-GW		Batch ID: R25939		RunNo: 25939					
Prep Date:			Analysis Date: 5/4/2015		SeqNo: 768876		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0.02780	87.1	51	131			
Surr: BFB	21		20.00		106	80	120			

Sample ID	1505001-001BMSD		SampType: MSD		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	SWMU 10-1-GW		Batch ID: R25939		RunNo: 25939					
Prep Date:			Analysis Date: 5/4/2015		SeqNo: 768877		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0.02780	85.5	51	131	1.74	20	
Surr: BFB	21		20.00		105	80	120	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505001

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5ml rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R26017			RunNo: 26017					
Prep Date:		Analysis Date: 5/6/2015			SeqNo: 771281		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505001

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5ml rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R26017	RunNo:	26017					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	771281	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		116	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.0	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	9.4		10.00		94.4	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	R26017	RunNo:	26017					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	771283	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	19	1.0	20.00	0	97.1	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505001

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID 100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES						
Client ID: LCSW	Batch ID: R26017			RunNo: 26017						
Prep Date:	Analysis Date: 5/6/2015			SeqNo: 771283		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	25	1.0	20.00	0	123	75.6	144			
Trichloroethene (TCE)	20	1.0	20.00	0	100	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.0	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.9	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID 1505001-001a ms	SampType: MS			TestCode: EPA Method 8260B: VOLATILES						
Client ID: SWMU 10-1-GW	Batch ID: R26017			RunNo: 26017						
Prep Date:	Analysis Date: 5/6/2015			SeqNo: 771288		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	26	1.0	20.00	4.693	104	70	130			
Toluene	20	1.0	20.00	0	99.7	70	130			
Chlorobenzene	20	1.0	20.00	0	98.6	70	130			
1,1-Dichloroethene	24	1.0	20.00	0	121	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	99.9	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		111	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	9.6		10.00		96.1	70	130			
Surr: Toluene-d8	9.8		10.00		97.5	70	130			

Sample ID 1505001-001a msd	SampType: MSD			TestCode: EPA Method 8260B: VOLATILES						
Client ID: SWMU 10-1-GW	Batch ID: R26017			RunNo: 26017						
Prep Date:	Analysis Date: 5/6/2015			SeqNo: 771289		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	26	1.0	20.00	4.693	108	70	130	2.94	20	
Toluene	21	1.0	20.00	0	103	70	130	3.36	20	
Chlorobenzene	20	1.0	20.00	0	102	70	130	3.71	20	
1,1-Dichloroethene	25	1.0	20.00	0	127	70	130	4.50	20	
Trichloroethene (TCE)	20	1.0	20.00	0	99.5	70	130	0.436	20	
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130	0	0	
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130	0	0	
Surr: Dibromofluoromethane	10		10.00		101	70	130	0	0	
Surr: Toluene-d8	10		10.00		101	70	130	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505001

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	100ng lcs		SampType: LCS		TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW		Batch ID: R26051		RunNo: 26051					
Prep Date:			Analysis Date: 5/7/2015		SeqNo: 772391		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	106	70	130			
Toluene	21	1.0	20.00	0	105	70	130			
Chlorobenzene	20	1.0	20.00	0	102	70	130			
1,1-Dichloroethene	24	1.0	20.00	0	122	75.6	144			
Trichloroethene (TCE)	20	1.0	20.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.5	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	9.9		10.00		98.9	70	130			

Sample ID	5ml rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R26051			RunNo: 26051					
Prep Date:		Analysis Date: 5/7/2015			SeqNo: 772398		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505001

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5ml rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R26051			RunNo: 26051					
Prep Date:		Analysis Date: 5/7/2015			SeqNo: 772398		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505001

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5ml rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R26051	RunNo:	26051					
Prep Date:		Analysis Date:	5/7/2015	SeqNo:	772398	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		119	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.5	70	130			
Surr: Dibromofluoromethane	9.7		10.00		97.2	70	130			
Surr: Toluene-d8	9.9		10.00		98.9	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505001

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-18996	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	18996	RunNo:	25988					
Prep Date:	5/1/2015	Analysis Date:	5/5/2015	SeqNo:	770336	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505001

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-18996	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	18996	RunNo:	25988					
Prep Date:	5/1/2015	Analysis Date:	5/5/2015	SeqNo:	770336	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	170		200.0		86.6	14.9	111			
Surr: Phenol-d5	170		200.0		85.6	11.3	108			
Surr: 2,4,6-Tribromophenol	170		200.0		83.0	15.7	154			
Surr: Nitrobenzene-d5	86		100.0		86.0	47.8	106			
Surr: 2-Fluorobiphenyl	86		100.0		86.3	21.3	123			
Surr: 4-Terphenyl-d14	76		100.0		75.5	14.3	135			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505001

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-18996		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSW		Batch ID: 18996		RunNo: 25988					
Prep Date:	5/1/2015		Analysis Date: 5/5/2015		SeqNo: 770337		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	78	10	100.0	0	77.9	47.8	99.7			
4-Chloro-3-methylphenol	180	10	200.0	0	88.1	58.1	103			
2-Chlorophenol	150	10	200.0	0	73.7	49.5	96.8			
1,4-Dichlorobenzene	75	10	100.0	0	75.1	40.4	89.4			
2,4-Dinitrotoluene	71	10	100.0	0	71.0	38.6	91.3			
N-Nitrosodi-n-propylamine	81	10	100.0	0	81.3	53.9	95.6			
4-Nitrophenol	160	10	200.0	0	80.1	26.4	108			
Pentachlorophenol	140	20	200.0	0	72.3	36.5	86.6			
Phenol	160	10	200.0	0	81.8	29.3	108			
Pyrene	77	10	100.0	0	77.1	45.7	100			
1,2,4-Trichlorobenzene	77	10	100.0	0	77.0	39.3	94.5			
Surr: 2-Fluorophenol	160		200.0		80.1	14.9	111			
Surr: Phenol-d5	180		200.0		88.0	11.3	108			
Surr: 2,4,6-Tribromophenol	210		200.0		105	15.7	154			
Surr: Nitrobenzene-d5	82		100.0		82.0	47.8	106			
Surr: 2-Fluorobiphenyl	85		100.0		84.9	21.3	123			
Surr: 4-Terphenyl-d14	94		100.0		94.2	14.3	135			

Sample ID	Icsd-18996		SampType: LCSD		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS02		Batch ID: 18996		RunNo: 25988					
Prep Date:	5/1/2015		Analysis Date: 5/5/2015		SeqNo: 770338		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	88	10	100.0	0	87.9	47.8	99.7	12.0	28.2	
4-Chloro-3-methylphenol	210	10	200.0	0	103	58.1	103	15.2	24.4	
2-Chlorophenol	150	10	200.0	0	74.5	49.5	96.8	1.08	28.1	
1,4-Dichlorobenzene	72	10	100.0	0	72.0	40.4	89.4	4.19	31.2	
2,4-Dinitrotoluene	84	10	100.0	0	83.9	38.6	91.3	16.6	44.4	
N-Nitrosodi-n-propylamine	90	10	100.0	0	89.6	53.9	95.6	9.67	24.2	
4-Nitrophenol	190	10	200.0	0	95.2	26.4	108	17.2	36.6	
Pentachlorophenol	170	20	200.0	0	85.2	36.5	86.6	16.3	29.5	
Phenol	170	10	200.0	0	82.7	29.3	108	1.08	30	
Pyrene	89	10	100.0	0	89.0	45.7	100	14.3	31	
1,2,4-Trichlorobenzene	80	10	100.0	0	80.4	39.3	94.5	4.35	24	
Surr: 2-Fluorophenol	160		200.0		78.4	14.9	111	0	0	
Surr: Phenol-d5	180		200.0		88.9	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	220		200.0		112	15.7	154	0	0	
Surr: Nitrobenzene-d5	89		100.0		88.8	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	89		100.0		89.1	21.3	123	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505001

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Icsd-18996		SampType: LCSD		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS02		Batch ID: 18996		RunNo: 25988					
Prep Date:	5/1/2015		Analysis Date: 5/5/2015		SeqNo: 770338		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	97		100.0		96.6	14.3	135	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit



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

Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1505001

RcptNo: 1

Received by/date:

Logged By: Lindsay Mangin

4/30/2015 3:50:00 PM

Completed By: Lindsay Mangin

5/1/2015 6:02:51 AM

Reviewed By:

Chain of Custody

1. Custody seals intact on sample bottles?
2. Is Chain of Custody complete?
3. How was the sample delivered?

Yes ☒

No ☐

Not Present ☐

Yes ☒

No ☐

Not Present ☐

Client

Log In

4. Was an attempt made to cool the samples?
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ?
6. Sample(s) in proper container(s)?
7. Sufficient sample volume for indicated test(s)?
8. Are samples (except VOA and ONG) properly preserved?
9. Was preservative added to bottles?
10. VOA vials have zero headspace?
11. Were any sample containers received broken?
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody)
13. Are matrices correctly identified on Chain of Custody?
14. Is it clear what analyses were requested?
15. Were all holding times able to be met?
(If no, notify customer for authorization.)

Yes ☒

No ☐

NA ☐

Yes ☒

No ☐

NA ☐

Yes ☒

No ☐

Yes ☒

No ☐

Yes ☒

No ☐

Yes ☐

No ☒

NA ☐

Yes ☒

No ☐

No VOA Vials ☐

Yes ☐

No ☒

of preserved bottles checked for pH:

Adjusted?

Checked by:

Special Handling (if applicable)

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

Yes ☐

No ☐

NA ☒

Person Notified:

Date

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			

WESTERN REFINING SOUTHWEST, INC.
GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES TOTAL
METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0



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

October 05, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10

OrderNo.: 1505002

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 4/30/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 09, 2015.

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, Inc.

Analytical Report

Lab Order 1505002

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB02

Project: SWMU 10

Collection Date: 4/29/2015 7:05:00 PM

Lab ID: 1505002-001

Matrix: AQUEOUS

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH	
Diesel Range Organics (DRO)	ND	0.91	1.0		mg/L	1	5/1/2015 6:46:18 PM	18985
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/1/2015 6:46:18 PM	18985
Surr: DNOP	106	0	76.5-150		%REC	1	5/1/2015 6:46:18 PM	18985
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	5/4/2015 8:54:20 PM	R25939
Surr: BFB	86.0	0	80-120		%REC	1	5/4/2015 8:54:20 PM	R25939
EPA METHOD 300.0: ANIONS							Analyst: LGT	
Fluoride	ND	0.029	0.10		mg/L	1	5/1/2015 12:18:03 PM	R25920
Chloride	0.20	0.13	0.50	J	mg/L	1	5/1/2015 12:18:03 PM	R25920
Sulfate	ND	0.11	0.50		mg/L	1	5/1/2015 12:18:03 PM	R25920
EPA METHOD 200.7: DISSOLVED METALS							Analyst: JLF	
Barium	ND	0.00095	0.0020		mg/L	1	5/6/2015 6:53:49 PM	R26030
Beryllium	ND	0.00031	0.0020		mg/L	1	5/6/2015 6:53:49 PM	R26030
Cadmium	ND	0.00097	0.0020		mg/L	1	5/6/2015 6:53:49 PM	R26030
Chromium	ND	0.0018	0.0060		mg/L	1	5/6/2015 6:53:49 PM	R26030
Cobalt	ND	0.0013	0.0060		mg/L	1	5/6/2015 6:53:49 PM	R26030
Iron	0.030	0.0073	0.020		mg/L	1	5/6/2015 6:53:49 PM	R26030
Manganese	0.00060	0.00027	0.0020	J	mg/L	1	5/6/2015 6:53:49 PM	R26030
Nickel	ND	0.0021	0.010		mg/L	1	5/6/2015 6:53:49 PM	R26030
Silver	ND	0.0012	0.0050		mg/L	1	5/6/2015 6:53:49 PM	R26030
Vanadium	ND	0.0015	0.050		mg/L	1	5/6/2015 6:53:49 PM	R26030
Zinc	0.023	0.0028	0.010		mg/L	1	5/6/2015 6:53:49 PM	R26030
EPA METHOD 200.7: METALS							Analyst: JLF	
Barium	ND	0.00095	0.0020		mg/L	1	5/4/2015 2:08:10 PM	R25943
Beryllium	ND	0.00031	0.0020		mg/L	1	5/4/2015 2:08:10 PM	R25943
Cadmium	ND	0.00097	0.0020		mg/L	1	5/4/2015 2:08:10 PM	R25943
Chromium	ND	0.0022	0.0060		mg/L	1	5/4/2015 2:08:10 PM	R25943
Cobalt	ND	0.0013	0.0060		mg/L	1	5/4/2015 2:08:10 PM	R25943
Iron	ND	0.0073	0.020		mg/L	1	5/4/2015 2:08:10 PM	R25943
Manganese	ND	0.0015	0.0020		mg/L	1	5/4/2015 2:08:10 PM	R25943
Nickel	ND	0.0023	0.010		mg/L	1	5/4/2015 2:08:10 PM	R25943
Silver	ND	0.0021	0.0050		mg/L	1	5/4/2015 2:08:10 PM	R25943
Vanadium	ND	0.0015	0.050		mg/L	1	5/4/2015 2:08:10 PM	R25943
Zinc	ND	0.0036	0.010		mg/L	1	5/4/2015 2:08:10 PM	R25943
EPA 200.8: DISSOLVED METALS							Analyst: DBD	
Antimony	0.00040	0.00014	0.0010	J	mg/L	1	5/12/2015 2:28:40 PM	R26138
Arsenic	ND	0.000065	0.0010		mg/L	1	5/12/2015 2:28:40 PM	R26138

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505002

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB02

Project: SWMU 10

Collection Date: 4/29/2015 7:05:00 PM

Lab ID: 1505002-001

Matrix: AQUEOUS

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: DBD	
Lead	0.000073	0.000026	0.0010	J	mg/L	1	5/12/2015 2:28:40 PM	R26138
Selenium	ND	0.00019	0.0010		mg/L	1	5/12/2015 2:28:40 PM	R26138
EPA 200.8: METALS							Analyst: DBD	
Antimony	0.00061	0.00022	0.0010	J	mg/L	1	5/12/2015 2:48:30 PM	R26138
Arsenic	ND	0.00044	0.0010		mg/L	1	5/12/2015 2:48:30 PM	R26138
Lead	ND	0.000069	0.00050		mg/L	1	5/12/2015 2:48:30 PM	R26138
Selenium	ND	0.00019	0.0010		mg/L	1	5/12/2015 2:48:30 PM	R26138
EPA METHOD 245.1: MERCURY							Analyst: MED	
Mercury	ND	0.000059	0.00020		mg/L	1	5/5/2015 2:22:03 PM	19047
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	1.9	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Acenaphthylene	ND	1.9	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Aniline	ND	1.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Anthracene	ND	1.6	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Azobenzene	ND	2.0	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Benzoic acid	ND	1.0	20		µg/L	1	5/5/2015 9:31:26 PM	18996
Benzyl alcohol	ND	1.2	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/5/2015 9:31:26 PM	18996
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Carbazole	ND	1.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/5/2015 9:31:26 PM	18996
4-Chloroaniline	ND	1.9	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2-Chlorophenol	ND	1.2	10		µg/L	1	5/5/2015 9:31:26 PM	18996
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Chrysene	ND	2.2	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/5/2015 9:31:26 PM	18996

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505002

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB02

Project: SWMU 10

Collection Date: 4/29/2015 7:05:00 PM

Lab ID: 1505002-001

Matrix: AQUEOUS

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Dibenzofuran	ND	1.9	10		µg/L	1	5/5/2015 9:31:26 PM	18996
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/5/2015 9:31:26 PM	18996
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/5/2015 9:31:26 PM	18996
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/5/2015 9:31:26 PM	18996
3,3'-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Diethyl phthalate	ND	1.7	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/5/2015 9:31:26 PM	18996
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/5/2015 9:31:26 PM	18996
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/5/2015 9:31:26 PM	18996
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/5/2015 9:31:26 PM	18996
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Fluoranthene	ND	1.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Fluorene	ND	1.7	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Hexachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Hexachloroethane	ND	1.6	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Isophorone	ND	2.0	10		µg/L	1	5/5/2015 9:31:26 PM	18996
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2-Methylphenol	ND	1.2	10		µg/L	1	5/5/2015 9:31:26 PM	18996
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/5/2015 9:31:26 PM	18996
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/5/2015 9:31:26 PM	18996
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Naphthalene	ND	1.8	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2-Nitroaniline	ND	1.8	10		µg/L	1	5/5/2015 9:31:26 PM	18996
3-Nitroaniline	ND	1.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
4-Nitroaniline	ND	1.2	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Nitrobenzene	ND	1.5	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2-Nitrophenol	ND	1.2	10		µg/L	1	5/5/2015 9:31:26 PM	18996
4-Nitrophenol	ND	1.4	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Pentachlorophenol	ND	1.1	20		µg/L	1	5/5/2015 9:31:26 PM	18996
Phenanthrene	ND	2.0	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Phenol	ND	1.1	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Pyrene	ND	2.3	10		µg/L	1	5/5/2015 9:31:26 PM	18996

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505002

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB02

Project: SWMU 10

Collection Date: 4/29/2015 7:05:00 PM

Lab ID: 1505002-001

Matrix: AQUEOUS

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Pyridine	ND	1.7	10		µg/L	1	5/5/2015 9:31:26 PM	18996
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/5/2015 9:31:26 PM	18996
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/5/2015 9:31:26 PM	18996
Surr: 2-Fluorophenol	94.3	0	14.9-111		%REC	1	5/5/2015 9:31:26 PM	18996
Surr: Phenol-d5	86.2	0	11.3-108		%REC	1	5/5/2015 9:31:26 PM	18996
Surr: 2,4,6-Tribromophenol	105	0	15.7-154		%REC	1	5/5/2015 9:31:26 PM	18996
Surr: Nitrobenzene-d5	108	0	47.8-106	S	%REC	1	5/5/2015 9:31:26 PM	18996
Surr: 2-Fluorobiphenyl	105	0	21.3-123		%REC	1	5/5/2015 9:31:26 PM	18996
Surr: 4-Terphenyl-d14	93.3	0	14.3-135		%REC	1	5/5/2015 9:31:26 PM	18996
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Benzene	ND	0.065	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Toluene	ND	0.11	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Naphthalene	ND	0.22	2.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Acetone	3.8	0.94	10	J	µg/L	1	5/6/2015 2:35:04 PM	R26017
Bromobenzene	ND	0.11	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Bromoform	ND	0.16	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Bromomethane	ND	1.2	3.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
2-Butanone	ND	0.36	10		µg/L	1	5/6/2015 2:35:04 PM	R26017
Carbon disulfide	ND	0.67	10		µg/L	1	5/6/2015 2:35:04 PM	R26017
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Chloroethane	ND	0.10	2.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Chloroform	ND	0.21	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Chloromethane	ND	0.17	3.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/6/2015 2:35:04 PM	R26017

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505002

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB02

Project: SWMU 10

Collection Date: 4/29/2015 7:05:00 PM

Lab ID: 1505002-001

Matrix: AQUEOUS

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Dibromomethane	ND	0.23	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
2-Hexanone	ND	0.48	10		µg/L	1	5/6/2015 2:35:04 PM	R26017
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/6/2015 2:35:04 PM	R26017
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Styrene	ND	0.11	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/6/2015 2:35:04 PM	R26017
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/6/2015 2:35:04 PM	R26017
Surr: 1,2-Dichloroethane-d4	112	0	70-130		%REC	1	5/6/2015 2:35:04 PM	R26017
Surr: 4-Bromofluorobenzene	98.6	0	70-130		%REC	1	5/6/2015 2:35:04 PM	R26017

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505002

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB02

Project: SWMU 10

Collection Date: 4/29/2015 7:05:00 PM

Lab ID: 1505002-001

Matrix: AQUEOUS

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Surr: Dibromofluoromethane	105	0	70-130		%REC	1	5/6/2015 2:35:04 PM	R26017
Surr: Toluene-d8	98.7	0	70-130		%REC	1	5/6/2015 2:35:04 PM	R26017

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		



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1-800-767-5859
Fax (615) 758-5859
Tax I.D. 62-0814289
Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 05, 2015
Description :
Sample ID : 1505002-001H SWMU 10 EB02
Collected By :
Collection Date : 04/29/15 19:05

ESC Sample # : L762969-01
Site ID :
Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.0050	mg/l	4500CN E-2011	05/11/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit (PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
Reported: 05/12/15 08:17 Printed: 05/12/15 08:18



YOUR LAB OF CHOICE

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762969

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

Tax I.D. 62-0814289

Est. 1970

May 12, 2015

Analyte	Result	Units	Laboratory Blank % Rec	Limit	Batch	Date Analyzed
Cyanide	< .005	mg/l			WG787731	05/11/15 16:24

Analyte	Units	Result	Duplicate Duplicate	RPD	Limit	Ref Samp	Batch
Cyanide	mg/l	0.0	0.0	0.0	20	L763281-02	WG787731
Cyanide	mg/l	0.0	0.00700	NA	20	L763288-02	WG787731

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Cyanide	mg/l	.1	0.0990	99.0	90-110	WG787731

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Cyanide	mg/l	0.0988	0.0990	99.0	90-110	0.202	20	WG787731

Analyte	Units	MS Res	Matrix Spike Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Cyanide	mg/l	0.205	0.0	.2	100.	90-110	L762964-01	WG787731

Analyte	Units	MSD	Matrix Spike Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Cyanide	mg/l	0.188	0.205	94.0	90-110	8.65	20	L762964-01	WG787731

Batch number /Run number / Sample number cross reference

WG787731: R3036222: L762969-01

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

* Performance of this Analyte is outside of established criteria.

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505002

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Metals					
Client ID:	PBW	Batch ID:	R25943	RunNo:	25943					
Prep Date:		Analysis Date:	5/4/2015	SeqNo:	768973	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Metals					
Client ID:	LCSW	Batch ID:	R25943	RunNo:	25943					
Prep Date:		Analysis Date:	5/4/2015	SeqNo:	768974	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	0.48	0.0020	0.5000	0	95.3	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.1	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.6	85	115			
Chromium	0.48	0.0060	0.5000	0	96.2	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.4	85	115			
Iron	0.47	0.020	0.5000	0	94.4	85	115			
Manganese	0.47	0.0020	0.5000	0	93.7	85	115			
Nickel	0.47	0.010	0.5000	0	93.6	85	115			
Silver	0.090	0.0050	0.1000	0	90.4	85	115			
Vanadium	0.50	0.050	0.5000	0	99.4	85	115			
Zinc	0.47	0.010	0.5000	0	93.5	85	115			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Metals					
Client ID:	PBW	Batch ID:	R26030	RunNo:	26030					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	771646	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	ND	0.0020								
Beryllium	0.00038	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505002

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID MB	SampType: MBLK		TestCode: EPA Method 200.7: Metals							
Client ID: PBW	Batch ID: R26030		RunNo: 26030							
Prep Date:	Analysis Date: 5/6/2015		SeqNo: 771646		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 200.7: Metals							
Client ID: LCSW	Batch ID: R26030		RunNo: 26030							
Prep Date:	Analysis Date: 5/6/2015		SeqNo: 771647		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.7	85	115			
Beryllium	0.48	0.0020	0.5000	0	96.6	85	115			
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Chromium	0.48	0.0060	0.5000	0	95.1	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.0	85	115			
Iron	0.49	0.020	0.5000	0	98.8	85	115			
Manganese	0.48	0.0020	0.5000	0	96.8	85	115			
Nickel	0.47	0.010	0.5000	0	93.2	85	115			
Silver	0.096	0.0050	0.1000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.5	85	115			
Zinc	0.46	0.010	0.5000	0	92.0	85	115			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505002

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB		SampType:	MBLK		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	PBW		Batch ID:	R25943		RunNo:	25943			
Prep Date:			Analysis Date:	5/4/2015		SeqNo:	768975	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS		SampType:	LCS		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	LCSW		Batch ID:	R25943		RunNo:	25943			
Prep Date:			Analysis Date:	5/4/2015		SeqNo:	768976	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.50	0.0020	0.5000	0	99.0	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.3	85	115			
Chromium	0.48	0.0060	0.5000	0	96.1	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.7	85	115			
Iron	0.48	0.020	0.5000	0	95.1	85	115			
Manganese	0.47	0.0020	0.5000	0	93.5	85	115			
Nickel	0.47	0.010	0.5000	0	93.8	85	115			
Silver	0.090	0.0050	0.1000	0	90.4	85	115			
Vanadium	0.50	0.050	0.5000	0	99.6	85	115			
Zinc	0.48	0.010	0.5000	0	96.7	85	115			

Sample ID	MB		SampType:	MBLK		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	PBW		Batch ID:	R26030		RunNo:	26030			
Prep Date:			Analysis Date:	5/6/2015		SeqNo:	771648	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505002

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R26030	RunNo:	26030					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	771648	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R26030	RunNo:	26030					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	771649	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	96.0	85	115			
Beryllium	0.49	0.0020	0.5000	0	97.5	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Chromium	0.49	0.0060	0.5000	0	97.7	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.2	85	115			
Iron	0.50	0.020	0.5000	0	101	85	115			
Manganese	0.49	0.0020	0.5000	0	97.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.7	85	115			
Silver	0.094	0.0050	0.1000	0	93.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.2	85	115			
Zinc	0.47	0.010	0.5000	0	93.8	85	115			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505002

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID LCS	SampType: LCS				TestCode: EPA 200.8: Metals					
Client ID: LCSW	Batch ID: R26138				RunNo: 26138					
Prep Date:	Analysis Date: 5/12/2015				SeqNo: 775338		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	101	85	115			
Arsenic	0.025	0.0010	0.02500	0	98.1	85	115			
Lead	0.013	0.00050	0.01250	0	104	85	115			
Selenium	0.024	0.0010	0.02500	0	95.6	85	115			

Sample ID MB	SampType: MBLK				TestCode: EPA 200.8: Metals					
Client ID: PBW	Batch ID: R26138				RunNo: 26138					
Prep Date:	Analysis Date: 5/12/2015				SeqNo: 775342		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID LCS	SampType: LCS				TestCode: EPA 200.8: Metals					
Client ID: LCSW	Batch ID: R26138				RunNo: 26138					
Prep Date:	Analysis Date: 5/12/2015				SeqNo: 775769		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.6	85	115			
Lead	0.013	0.00050	0.01250	0	103	85	115			
Selenium	0.024	0.0010	0.02500	0	96.4	85	115			

Sample ID MB	SampType: MBLK				TestCode: EPA 200.8: Metals					
Client ID: PBW	Batch ID: R26138				RunNo: 26138					
Prep Date:	Analysis Date: 5/12/2015				SeqNo: 775770		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505002

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS	SampType: LCS			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW	Batch ID: R26138			RunNo: 26138					
Prep Date:		Analysis Date: 5/12/2015			SeqNo: 775346		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.025	0.0010	0.02500	0	101	85	115			
Arsenic	0.025	0.0010	0.02500	0	98.1	85	115			
Lead	0.013	0.00050	0.01250	0	104	85	115			
Selenium	0.024	0.0010	0.02500	0	95.6	85	115			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R26138			RunNo: 26138					
Prep Date:		Analysis Date: 5/12/2015			SeqNo: 775348		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	LCS	SampType: LCS			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW	Batch ID: R26138			RunNo: 26138					
Prep Date:		Analysis Date: 5/12/2015			SeqNo: 775777		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.6	85	115			
Lead	0.013	0.00050	0.01250	0	103	85	115			
Selenium	0.024	0.0010	0.02500	0	96.4	85	115			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R26138			RunNo: 26138					
Prep Date:		Analysis Date: 5/12/2015			SeqNo: 775778		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505002

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19047	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	19047	RunNo:	25969					
Prep Date:	5/5/2015	Analysis Date:	5/5/2015	SeqNo:	769643	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-19047	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	19047	RunNo:	25969					
Prep Date:	5/5/2015	Analysis Date:	5/5/2015	SeqNo:	769644	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	101	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505002

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R25920		RunNo: 25920							
Prep Date:	Analysis Date: 5/1/2015		SeqNo: 768219		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R25920		RunNo: 25920							
Prep Date:	Analysis Date: 5/1/2015		SeqNo: 768220		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.49	0.10	0.5000	0	97.4	90	110			
Chloride	4.8	0.50	5.000	0	96.8	90	110			
Sulfate	9.7	0.50	10.00	0	97.4	90	110			

Sample ID 1505002-001EMS	SampType: MS		TestCode: EPA Method 300.0: Anions							
Client ID: SWMU 10 EB02	Batch ID: R25920		RunNo: 25920							
Prep Date:	Analysis Date: 5/1/2015		SeqNo: 768236		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	99.3	66.1	113			
Chloride	4.8	0.50	5.000	0.2004	92.7	81.8	112			
Sulfate	9.4	0.50	10.00	0	94.5	88.3	114			

Sample ID 1505002-001EMSD	SampType: MSD		TestCode: EPA Method 300.0: Anions							
Client ID: SWMU 10 EB02	Batch ID: R25920		RunNo: 25920							
Prep Date:	Analysis Date: 5/1/2015		SeqNo: 768237		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	100	66.1	113	0.902	20	
Chloride	4.9	0.50	5.000	0.2004	93.5	81.8	112	0.817	20	
Sulfate	9.5	0.50	10.00	0	95.1	88.3	114	0.637	20	

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R25920		RunNo: 25920							
Prep Date:	Analysis Date: 5/1/2015		SeqNo: 768273		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505002

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS	SampType: LCS			TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID: R25920			RunNo: 25920					
Prep Date:		Analysis Date: 5/1/2015			SeqNo: 768274		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	102	90	110			
Chloride	4.9	0.50	5.000	0	97.0	90	110			
Sulfate	9.7	0.50	10.00	0	97.1	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505002

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-18985	SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW	Batch ID: 18985			RunNo: 25902					
Prep Date:	4/30/2015	Analysis Date: 5/1/2015			SeqNo: 767854		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.0		1.000		101	76.5	150			

Sample ID	LCS-18985		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 18985		RunNo: 25902					
Prep Date:	4/30/2015		Analysis Date: 5/1/2015		SeqNo: 767970		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.2	1.0	5.000	0	104	60.1	156			
Surr: DNOP	0.52		0.5000		105	76.5	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505002

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R25939	RunNo:	25939					
Prep Date:		Analysis Date:	5/4/2015	SeqNo:	768862	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		88.4	80	120			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R25939	RunNo:	25939					
Prep Date:		Analysis Date:	5/4/2015	SeqNo:	768863	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.2	80	120			
Surr: BFB	18		20.00		91.1	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505002

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5ml rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R26017			RunNo: 26017					
Prep Date:		Analysis Date: 5/6/2015			SeqNo: 771281		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505002

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5ml rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R26017	RunNo:	26017					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	771281	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		116	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.0	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	9.4		10.00		94.4	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	R26017	RunNo:	26017					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	771283	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	19	1.0	20.00	0	97.1	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505002

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R26017			RunNo: 26017					
Prep Date:		Analysis Date: 5/6/2015			SeqNo: 771283		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	25	1.0	20.00	0	123	75.6	144			
Trichloroethene (TCE)	20	1.0	20.00	0	100	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.0	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.9	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505002

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-18996		SampType: MBLK		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	PBW		Batch ID: 18996		RunNo: 25988					
Prep Date:	5/1/2015		Analysis Date: 5/5/2015		SeqNo: 770336		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505002

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-18996		SampType: MBLK			TestCode: EPA Method 8270C: Semivolatiles				
Client ID:	PBW		Batch ID: 18996			RunNo: 25988				
Prep Date:	5/1/2015		Analysis Date: 5/5/2015			SeqNo: 770336	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	170		200.0		86.6	14.9	111			
Surr: Phenol-d5	170		200.0		85.6	11.3	108			
Surr: 2,4,6-Tribromophenol	170		200.0		83.0	15.7	154			
Surr: Nitrobenzene-d5	86		100.0		86.0	47.8	106			
Surr: 2-Fluorobiphenyl	86		100.0		86.3	21.3	123			
Surr: 4-Terphenyl-d14	76		100.0		75.5	14.3	135			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505002

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-18996		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSW		Batch ID: 18996		RunNo: 25988					
Prep Date:	5/1/2015		Analysis Date: 5/5/2015		SeqNo: 770337		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	78	10	100.0	0	77.9	47.8	99.7			
4-Chloro-3-methylphenol	180	10	200.0	0	88.1	58.1	103			
2-Chlorophenol	150	10	200.0	0	73.7	49.5	96.8			
1,4-Dichlorobenzene	75	10	100.0	0	75.1	40.4	89.4			
2,4-Dinitrotoluene	71	10	100.0	0	71.0	38.6	91.3			
N-Nitrosodi-n-propylamine	81	10	100.0	0	81.3	53.9	95.6			
4-Nitrophenol	160	10	200.0	0	80.1	26.4	108			
Pentachlorophenol	140	20	200.0	0	72.3	36.5	86.6			
Phenol	160	10	200.0	0	81.8	29.3	108			
Pyrene	77	10	100.0	0	77.1	45.7	100			
1,2,4-Trichlorobenzene	77	10	100.0	0	77.0	39.3	94.5			
Surr: 2-Fluorophenol	160		200.0		80.1	14.9	111			
Surr: Phenol-d5	180		200.0		88.0	11.3	108			
Surr: 2,4,6-Tribromophenol	210		200.0		105	15.7	154			
Surr: Nitrobenzene-d5	82		100.0		82.0	47.8	106			
Surr: 2-Fluorobiphenyl	85		100.0		84.9	21.3	123			
Surr: 4-Terphenyl-d14	94		100.0		94.2	14.3	135			

Sample ID	Icsd-18996		SampType: LCSD		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS02		Batch ID: 18996		RunNo: 25988					
Prep Date:	5/1/2015		Analysis Date: 5/5/2015		SeqNo: 770338		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	88	10	100.0	0	87.9	47.8	99.7	12.0	28.2	
4-Chloro-3-methylphenol	210	10	200.0	0	103	58.1	103	15.2	24.4	
2-Chlorophenol	150	10	200.0	0	74.5	49.5	96.8	1.08	28.1	
1,4-Dichlorobenzene	72	10	100.0	0	72.0	40.4	89.4	4.19	31.2	
2,4-Dinitrotoluene	84	10	100.0	0	83.9	38.6	91.3	16.6	44.4	
N-Nitrosodi-n-propylamine	90	10	100.0	0	89.6	53.9	95.6	9.67	24.2	
4-Nitrophenol	190	10	200.0	0	95.2	26.4	108	17.2	36.6	
Pentachlorophenol	170	20	200.0	0	85.2	36.5	86.6	16.3	29.5	
Phenol	170	10	200.0	0	82.7	29.3	108	1.08	30	
Pyrene	89	10	100.0	0	89.0	45.7	100	14.3	31	
1,2,4-Trichlorobenzene	80	10	100.0	0	80.4	39.3	94.5	4.35	24	
Surr: 2-Fluorophenol	160		200.0		78.4	14.9	111	0	0	
Surr: Phenol-d5	180		200.0		88.9	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	220		200.0		112	15.7	154	0	0	
Surr: Nitrobenzene-d5	89		100.0		88.8	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	89		100.0		89.1	21.3	123	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505002

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Icsd-18996		SampType: LCSD		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS02		Batch ID: 18996		RunNo: 25988					
Prep Date:	5/1/2015		Analysis Date: 5/5/2015		SeqNo: 770338		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	97		100.0		96.6	14.3	135	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1505002

RcptNo: 1

Received by/date:

Logged By: Lindsay Mangin

4/30/2015 3:50:00 PM

Completed By: Lindsay Mangin

5/1/2015 6:28:50 AM

Reviewed By:

Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☒

No ☐

Not Present ☐

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Client

Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°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: 21
Adjusted? <2 or >2 unless noted
Checked by:

Special Handling (if applicable)

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

Yes ☐

No ☐

NA ☒

Person Notified:

Date

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

**METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES TOTAL
METALS ANALYSIS AND DISSOLVED METALS ANALYSIS**

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0



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

November 05, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10

OrderNo.: 1505003

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 4/30/2015 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109



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

Case Narrative

WO#: 1505003

Date: 11/5/2015

CLIENT: Western Refining Company

Project: SWMU 10

Analytical Notes Regarding Hexavalent Chromium:

This report is an addendum to the original report, with an updated value for hexavalent chromium. The original result of 5.7 mg/kg, for sample SWMU 10-5 (0-2'), was in question because of previous suspected false positive results. An alternate laboratory was used for the analysis. Sample SWMU 10-5 (0-2') is less than 1.0mg/kg from the alternate laboratory.



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College Station, TX 888.690.2218 • Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

ANALYTICAL SUMMARY REPORT

August 24, 2015

Hall Environmental

4901 Hawkins St NE Ste D

Albuquerque, NM 87109-4372

Work Order: B15080963

Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 1 sample for Hall Environmental on 8/11/2015 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B15080963-001	1505003-001C, SWMU 10-5 (0-2 Feet)	04/29/15 12:00	08/11/15	Solid	Chromium, Hexavalent Water Extraction for Hex Chromium

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:


Corporate Quality Assurance Officer

Digitally signed by
Andy Valkenburg
Date: 2015.08.24 14:42:19 -06:00



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College Station, TX 888.690.2218 • Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

CLIENT: Hall Environmental
Project: Not Indicated
Work Order: B15080963

Report Date: 08/24/15

CASE NARRATIVE

Level IV reporting was requested. Included with the analysis reports are instrument data reports for all analysis associated with the instrument calibration, QC sample analysis, and sample analysis. Copies of the detailed laboratory records for the analyses are sorted by method, instrument, and then analysis time. All analytical data is within method QA/QC specifications except as noted on analyses and/or QC summary reports, or in this narrative. The detailed report format with the instrument data identifies which QC batch ID and sequence QC are associated with each analysis result for a sample.

Inclusion of the raw data will be found with the attached data files. The results of this Analytical Report relate only to the items submitted for analysis. Only the raw data associated with parameters listed on this report should be validated.



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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Client Sample ID: 1505003-001C, SWMU 10-5 (0-2 Feet)
Project: Not Indicated
Matrix: Solid

Lab ID: B15080963-001
Collection Date: 04/29/15 12:00
Date Received: 08/11/15
Report Date: 08/24/15

Analyses	Result	Units	QUAL	RL	MCL	Method	Analysis Date / By	Prep Date	Prep Method	RunID	Run Order	BatchID
METALS, WATER EXTRACTABLE Chromium, Hexavalent - Soluble	ND	mg/kg		1	SW7196A		08/12/15 15:00 / ma	08/12/15 11:30	Water Extr	SPEC_150812C	6	92222

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



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College Station, TX 888.890.2218 • Gillette, WY 866.886.7175 • Helena, MT 877.472.0711

Client: Hall Environmental
Work Order: B15080963
Project: Not Indicated

ANALYTICAL QC SUMMARY REPORT
Prepared by Billings, MT Branch
BatchID: 92222

Date: 24-Aug-15

Run ID :Run Order: SPEC_150812C: 5 SampType: Method Blank Lab ID: MB-92222 Method: SW7196A
Analysis Date: 08/12/15 15:00 Units: mg/kg Prep Info: Prep Date: 8/12/2015 Prep Method: Water Extraction
Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chromium, Hexavalent - Soluble ND 0.01
Associated samples: B15080963-001A

Run ID :Run Order: SPEC_150812C: 7 SampType: Sample Matrix Spike Lab ID: B15080963-001AMS Method: SW7196A
Analysis Date: 08/12/15 15:00 Units: mg/kg Prep Info: Prep Date: Prep Method:
Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chromium, Hexavalent - Soluble 0.751 1.0 1 0 75 70 130
Associated samples: B15080963-001A

Run ID :Run Order: SPEC_150812C: 8 SampType: Sample Matrix Spike Duplicate Lab ID: B15080963-001AMSD Method: SW7196A
Analysis Date: 08/12/15 15:00 Units: mg/kg Prep Info: Prep Date: Prep Method:
Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chromium, Hexavalent - Soluble 0.713 1.0 1 0 71 70 130 0.7512 20
Associated samples: B15080963-001A

Run ID :Run Order: SPEC_150812C: 9 SampType: Sample Duplicate Lab ID: B15080963-001ADUP Method: SW7196A
Analysis Date: 08/12/15 15:00 Units: mg/kg Prep Info: Prep Date: 8/12/2015 Prep Method: Water Extraction
Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chromium, Hexavalent - Soluble ND 1.0 0 0 0 0 30
Associated samples: B15080963-001A

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limit N - Analyte concentration was not sufficiently high to calculate RPD
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits A - Analyte concentration greater than four times the spike amount



Work Order Receipt Checklist

Hall Environmental

B15080963

Login completed by: Randa Nees

Date Received: 8/11/2015

Reviewed by: BL2000\tedwards

Received by: jrjz

Reviewed Date: 8/12/2015

Carrier name: Return-UPS NDA

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☒	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☒	Not Applicable ☐
Container/Temp Blank temperature:	1.8°C Blue Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☒
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☒

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as -dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

None



CHAIN OF CUSTODY RECORD

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

SUB CONTRACTOR: Bil-Energy		COMPANY: Energy Laboratories		PHONE: (800) 735-4489	FAX: (406) 252-6069
ADDRESS: 1120 South 27th Street		ACCOUNT #:		EMAIL:	
CITY, STATE, ZIP: Billings, MT 59107					
ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE
1	1505003-001C	SWMU 10-5 (0-2')	80ZGU	Soil	4/29/2015 12:00:00 PM
			# CONTAINERS	1	
			LEVEL	4	
ANALYTICAL COMMENTS 15080913-001					

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

Relinquished By:		Date: 8/10/2015	Time: 3:06 PM	Received By:	Date: 8/10/2015	Time: 3:06 PM
Relinquished By:		Date: 8/10/2015	Time: 3:06 PM	Received By:	Date: 8/10/2015	Time: 3:06 PM
Relinquished By:		Date: 8/10/2015	Time: 3:06 PM	Received By:	Date: 8/10/2015	Time: 3:06 PM
TAT: Standard		RUSH		Next BD ☐		2nd BD ☐
				3rd BD ☐		
REPORT TRANSMITTAL DESIRED: ☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE						
FOR LAB USE ONLY						
Temp of samples 1.3 °C Attempt to Cool? BLUE ICE						
Comments: RTN UPS W/TA / SEALON COOLER						

Energy Laboratories Inc

ANALYTICAL RUN Summary

24-Aug-15

Run ID SPEC_150812C

Run Start Date: 8/12/2015 3:00:00 P

Analyst: Mark A Spitzer

Ical:

Column ID:

Comments:

Seq No	Lab ID	Test Code	Sample Type	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist				
9781583	CCB	CR-HEX-W	CCB		8/12/2015 3:00:0	1	R247670		0	0					
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Chromium, Hexavalent	A	mg/L	0.0002	0.0002		0	0	0.000557	0.01	0	0%	0	0	0	0%

Seq No	Lab ID	Test Code	Sample Type	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist				
9781584	CCV	CR-HEX-W	CCV		8/12/2015 3:00:0	1	R247670		0	0					
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Chromium, Hexavalent	A	mg/L	0.1059	0.1059		0.1	0	0.000557	0.01	0	106%	90	110	0%	

Seq No	Lab ID	Test Code	Sample Type	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist				
9781585	MB-R247670	CR-HEX-W	MBLK		8/12/2015 3:00:0	1	R247670		0	0					
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Chromium, Hexavalent	A	mg/L	0.0002	0		0	0	0.004	0.01	0	0%	0	0	0	0%

Seq No	Lab ID	Test Code	Sample Type	File ID	Analysis Date	DF	Batch ID	Prep Date	SPKref	RPDref	pmoist				
9781586	LCS-R247670	CR-HEX-W	LCS		8/12/2015 3:00:0	1	R247670		1E+07	0					
Analyte	T	Units	RAW	Final	Text	Spike	SPKref	MDL	PQL	UQL	%REC	LOW	HIGH	%RPD	Q
Chromium, Hexavalent	A	mg/L	0.0988	0.0988		0.1	0	0.004	0.01	0	99%	85	115	0%	

Hexavalent Chromium (Cr6+) in Soil and Water SM3500-Cr B

Analyst: MAS

Analysis Date: 11/5/14

Time: 3:30 PM

Calibration Standard: ME406020
Calibration Date Used: new calibration

Reference Std: MA4225B
Color Reagent: Me191020B

[illegible]

Hexavalent Chromium (Cr6+) in Soil and Water SM3500-Cr B

Analyst: MAS Analysis Date: 8/12/15 Time: 3:00 PM
Instrument: Spec
Calibration Standard: ME150226B Reference Std: ME150226A
Calibration Date Used: 11-5-14 Color Reagent: ME150812C

[illegible]

PREP BATCH REPORT

Prep Code: CR-HEX-S-WATER-EX Technician: Mark A Spitzer Prep Start Date: 8/12/2015 11:30:29 A
 Prep Batch 92222 Prep Temp NA °C Batch Units: G Prep End Date: 8/12/2015 2:49:00 PM

Sample ID	Matrix	pH	Initial Samp Amt	Sol Added	Sol Recovered	Final Vol (mL)	Factor	Balance	Prep Start Date	Prep End Date
MB-92222			100	0	0	100	1		8/12/2015	8/12/2015
B15080963-001A	Solid		10	0	0	100	9.95024876		8/12/2015	8/12/2015
B15080963-001ADUP	Solid		10	0	0	100	9.98003992		8/12/2015	8/12/2015

Energy Laboratories Inc

Standard LOG

Standard ID: ME150226A
Standard Name: HEX Cr 1.0 mg/L QCS
Date Prepared: 2/26/2015
Date Expires: 2/26/2016
Department: ME
Vendor:
Lot Number:
Balance ID:
Type: Secondary
BY: Mark A Spitzer
Status: New
Comments:

<u>Stock Source</u>	Base Units	Final Volume:	250 mL
ETC0311 Cr 6+ Stock Ref Solution	ug/mL	Amount Added	5 mL
<u>Analyses</u>	CAS	Conc:	ug/mL
A Chromium, Hexavalent	18540-29-9		0

Energy Laboratories Inc

Standard LOG

Standard ID: ME150226B
Standard Name: HEX Cr 1.0 mg/L STD
Date Prepared: 2/26/2015
Date Expires: 2/26/2016
Department: ME
Vendor:
Lot Number:
Balance ID:

Type: Secondary
BY: Mark A Spitzer
Status: Open

Comments:

<u>Stock Source</u>	Base Units	Final Volume:	Amount Added
ETC0310 CR6+ STOCK	ug/mL	250 mL	0.5 mL
<u>Analyses</u>	CAS	Conc:	ug/mL
A Chromium, Hexavalent	18540-29-9		0

Energy Laboratories Inc

Standard LOG

Standard ID: ME150812C
Standard Name: Hex chrome color reagent
Date Prepared: 8/12/2015
Date Expires: 8/12/2016
Department: ME
Vendor:
Lot Number:
Balance ID: 4-place Balance
Comments: Diluted to 40 mL in acetone

Type:
BY: Mark A Spitzer

Status: Open

Chemical / Solvent Used	Bottle No	Amt	Units
1,5-Diphenylcarbohydrazide	1925	0.2	g

Final Volume: 40 mL

Stock Source

Base Units

Amount Added

Analyses

CAS

Conc: ug/mL

Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1505003

RcptNo: 1

Received by/date:

[Signature] 04/30/15

Logged By: Lindsay Mangin

4/30/2015 3:50:00 PM

[Signature]

Completed By: Lindsay Mangin

5/1/2015 6:34:19 AM

[Signature]

Reviewed By:

[Signature] 05/10/15

Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☒

No ☐

Not Present ☐

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Client

Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of >0° 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	1.4	Good	Yes			

Chain-of-Custody Record

Client: **WESTERN REFINING SW, INC**

GALLUP REFINERY

Mailing Address: **92 GIANT CROSSING RD**

GALLUP, NM 87301

Phone #: **505-722-0231**

email or Fax#: **CHERYL.L.JOHNSON@WNR.COM**

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other

☒ EDD (Type) **EXCEL**

Project Manager:

CHERYL JOHNSON

Sampler: **TRACY PAYNE**

Sample Temperature: **77°F**

HEAT NO. **505-722-0231**

Preservative Type

Container Type and #

Sample Request ID

Time

Date

Matrix

Time

Date

Matrix

Time

Date

Matrix

Time

Date

Matrix

Time

Date

Matrix

Time

Date

Matrix

Time

Date

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

SWMU 10

Project #:

Analysis Request

TPH Method 8015B (Gas/Diesel)

TPH (Method 418.1)

EDB (Method 504.1)

8310 (PNA or PAH)

RCRA 8 Metals

Anions (F, Cl, NO₃, NO₂, PO₄, SO₄)

8081 Pesticides / 8082 PCB's

8260B (VOA)

8270 (Semi-VOA)

METALS AND CYANIDE

(SEE ATTACHED SHEET)

Air Bubbles (Y or N)

Remarks:

Received by: **CHERYL JOHNSON**

Date: **04/30/15**

Time: **0800**

Relinquished by: **CHERYL JOHNSON**

Date: **04/30/15**

Time: **1530**

Relinquished by: **CHERYL JOHNSON**

Date: **04/30/15**

Time: **1530**

Relinquished by: **CHERYL JOHNSON**

Date: **04/30/15**

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Time: **1530**

Relinquished by: **CHERYL JOHNSON**

Date: **04/30/15**

Time: **1530**

Relinquished by: **CHERYL JOHNSON**

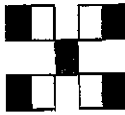
Date: **04/30/15**

Time: **1530**

Relinquished by: **CHERYL JOHNSON**

Date: **04/30/15**

Time: **1530**



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

TPH Method 8015B (Gas/Diesel)

TPH (Method 418.1)

EDB (Method 504.1)

8310 (PNA or PAH)

RCRA 8 Metals

Anions (F, Cl, NO₃, NO₂, PO₄, SO₄)

8081 Pesticides / 8082 PCB's

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Date: **04/30/15**

Time: **1530**

Relinquished by: **CHERYL JOHNSON**

Date: **04/30/15**

Time: **1530**



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

October 08, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10

OrderNo.: 1505003

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 4/30/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 09, 2015.

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#: 1505003
Date: 10/8/2015

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding EPA Method 8015 and 8270:
The surrogates with "S" flags are unrecoverable due to sample dilution and matrix interferences.

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505003

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5 (0-2')

Project: SWMU 10

Collection Date: 4/29/2015 12:00:00 PM

Lab ID: 1505003-001

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	7700	540	980		mg/Kg-dr	100	5/5/2015 2:49:11 PM	19040
Motor Oil Range Organics (MRO)	5900	4900	4900		mg/Kg-dr	100	5/5/2015 2:49:11 PM	19040
Surr: DNOP	0	0	57.9-140	S	%REC	100	5/5/2015 2:49:11 PM	19040
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	16	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.53	0.0071	0.080		mg/Kg-dr	2	5/6/2015 4:02:26 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Arsenic	2.6	0.34	2.9	J	mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Barium	500	0.069	0.23		mg/Kg-dr	2	5/7/2015 1:22:33 PM	19080
Beryllium	0.99	0.0086	0.17		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Chromium	54	0.070	0.35		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Cobalt	6.7	0.044	0.35		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Iron	18000	70	290		mg/Kg-dr	100	5/7/2015 11:03:43 AM	19080
Lead	4.9	0.13	0.29		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Manganese	870	0.34	0.58		mg/Kg-dr	5	5/8/2015 2:30:37 PM	19080
Nickel	14	0.15	0.58		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Vanadium	26	0.039	2.9		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
Zinc	150	0.75	2.9		mg/Kg-dr	1	5/7/2015 1:21:01 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	1.5	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Acenaphthylene	ND	1.2	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Aniline	ND	1.0	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Anthracene	ND	1.0	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Azobenzene	ND	1.3	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Benz(a)anthracene	ND	0.95	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Benzo(a)pyrene	ND	1.4	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Benzo(b)fluoranthene	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Benzo(g,h,i)perylene	ND	1.4	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Benzo(k)fluoranthene	ND	1.4	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Benzoic acid	ND	0.69	6.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Benzyl alcohol	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Bis(2-chloroethoxy)methane	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505003

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5 (0-2')

Project: SWMU 10

Collection Date: 4/29/2015 12:00:00 PM

Lab ID: 1505003-001

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Bis(2-chloroethyl)ether	ND	1.2	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.92	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Bis(2-ethylhexyl)phthalate	ND	1.4	6.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
4-Bromophenyl phenyl ether	ND	1.3	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Butyl benzyl phthalate	ND	1.5	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Carbazole	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
4-Chloro-3-methylphenol	ND	1.2	6.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
4-Chloroaniline	ND	1.1	6.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2-Chloronaphthalene	ND	1.3	3.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2-Chlorophenol	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
4-Chlorophenyl phenyl ether	ND	1.8	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Chrysene	ND	1.2	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Di-n-butyl phthalate	ND	1.4	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Di-n-octyl phthalate	ND	1.3	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Dibenz(a,h)anthracene	ND	1.3	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Dibenzofuran	ND	1.3	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
1,2-Dichlorobenzene	ND	1.2	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
1,3-Dichlorobenzene	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
1,4-Dichlorobenzene	ND	1.3	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
3,3'-Dichlorobenzidine	ND	0.93	3.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Diethyl phthalate	ND	1.4	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Dimethyl phthalate	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2,4-Dichlorophenol	ND	1.2	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2,4-Dimethylphenol	ND	0.95	3.6		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.65	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2,4-Dinitrophenol	ND	0.50	6.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2,4-Dinitrotoluene	ND	1.1	6.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2,6-Dinitrotoluene	ND	1.3	6.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Fluoranthene	ND	1.5	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Fluorene	ND	1.6	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Hexachlorobenzene	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Hexachlorobutadiene	ND	1.2	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Hexachlorocyclopentadiene	ND	0.83	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Hexachloroethane	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Indeno(1,2,3-cd)pyrene	ND	1.4	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Isophorone	ND	1.3	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
1-Methylnaphthalene	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2-Methylnaphthalene	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2-Methylphenol	ND	1.2	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026

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

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	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505003

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5 (0-2')

Project: SWMU 10

Collection Date: 4/29/2015 12:00:00 PM

Lab ID: 1505003-001

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	ND	1.2	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
N-Nitrosodi-n-propylamine	ND	1.2	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
N-Nitrosodiphenylamine	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Naphthalene	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2-Nitroaniline	ND	1.4	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
3-Nitroaniline	ND	1.2	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
4-Nitroaniline	ND	1.1	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Nitrobenzene	ND	1.2	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2-Nitrophenol	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
4-Nitrophenol	ND	1.0	3.0		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Pentachlorophenol	ND	0.75	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Phenanthrene	ND	1.3	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Phenol	ND	1.1	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Pyrene	ND	1.6	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Pyridine	ND	1.0	4.8		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
1,2,4-Trichlorobenzene	ND	1.2	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2,4,5-Trichlorophenol	ND	1.4	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
2,4,6-Trichlorophenol	ND	1.4	2.4		mg/Kg-dr	1	5/8/2015 6:26:16 PM	19026
Surr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/8/2015 6:26:16 PM	19026
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/8/2015 6:26:16 PM	19026
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/8/2015 6:26:16 PM	19026
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/8/2015 6:26:16 PM	19026
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/8/2015 6:26:16 PM	19026
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/8/2015 6:26:16 PM	19026
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	0.014	0.0046	0.031	J	mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Toluene	0.010	0.0037	0.031	J	mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Ethylbenzene	0.016	0.0028	0.031	J	mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Methyl tert-butyl ether (MTBE)	ND	0.0044	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,2,4-Trimethylbenzene	0.063	0.0016	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,3,5-Trimethylbenzene	0.041	0.0020	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,2-Dichloroethane (EDC)	ND	0.012	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,2-Dibromoethane (EDB)	ND	0.0025	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Naphthalene	0.12	0.0074	0.062		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1-Methylnaphthalene	0.51	0.019	0.12		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
2-Methylnaphthalene	0.53	0.020	0.12		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Acetone	ND	0.023	0.47		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Bromobenzene	ND	0.0023	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Bromodichloromethane	ND	0.0025	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505003

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5 (0-2')

Project: SWMU 10

Collection Date: 4/29/2015 12:00:00 PM

Lab ID: 1505003-001

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Bromoform	ND	0.0025	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Bromomethane	ND	0.0060	0.093		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
2-Butanone	ND	0.020	0.31		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Carbon disulfide	ND	0.022	0.31		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Carbon tetrachloride	ND	0.0030	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Chlorobenzene	ND	0.0024	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Chloroethane	ND	0.024	0.062		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Chloroform	ND	0.0032	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Chloromethane	ND	0.0036	0.093		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
2-Chlorotoluene	ND	0.0035	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
4-Chlorotoluene	ND	0.0023	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
cis-1,2-DCE	ND	0.0039	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
cis-1,3-Dichloropropene	ND	0.0022	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,2-Dibromo-3-chloropropane	ND	0.0053	0.062		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Dibromochloromethane	ND	0.0023	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Dibromomethane	ND	0.0033	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,2-Dichlorobenzene	ND	0.0019	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,3-Dichlorobenzene	ND	0.0037	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,4-Dichlorobenzene	ND	0.0039	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Dichlorodifluoromethane	ND	0.0078	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,1-Dichloroethane	ND	0.012	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,1-Dichloroethene	ND	0.0021	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,2-Dichloropropane	ND	0.0017	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,3-Dichloropropane	ND	0.0043	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
2,2-Dichloropropane	ND	0.0045	0.062		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,1-Dichloropropene	ND	0.0046	0.062		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Hexachlorobutadiene	ND	0.0043	0.062		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
2-Hexanone	ND	0.0076	0.31		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Isopropylbenzene	ND	0.0026	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
4-Isopropyltoluene	0.0061	0.0022	0.031	J	mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
4-Methyl-2-pentanone	ND	0.0054	0.31		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Methylene chloride	ND	0.012	0.093		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
n-Butylbenzene	0.0094	0.0027	0.093	J	mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
n-Propylbenzene	0.0051	0.0023	0.031	J	mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
sec-Butylbenzene	ND	0.0044	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Styrene	ND	0.0057	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
tert-Butylbenzene	ND	0.0036	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,1,1,2-Tetrachloroethane	ND	0.0025	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,1,2,2-Tetrachloroethane	ND	0.0038	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505003

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5 (0-2')

Project: SWMU 10

Collection Date: 4/29/2015 12:00:00 PM

Lab ID: 1505003-001

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Tetrachloroethene (PCE)	ND	0.0027	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
trans-1,2-DCE	ND	0.0020	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
trans-1,3-Dichloropropene	ND	0.0056	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,2,3-Trichlorobenzene	ND	0.0066	0.062		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,2,4-Trichlorobenzene	ND	0.0057	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,1,1-Trichloroethane	ND	0.0047	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,1,2-Trichloroethane	ND	0.0037	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Trichloroethene (TCE)	ND	0.0030	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Trichlorofluoromethane	ND	0.0094	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
1,2,3-Trichloropropane	ND	0.0052	0.062		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Vinyl chloride	ND	0.012	0.031		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Xylenes, Total	0.14	0.0086	0.062		mg/Kg-dr	1	5/5/2015 12:59:46 AM	19008
Surr: Dibromofluoromethane	99.5		70-130		%REC	1	5/5/2015 12:59:46 AM	19008
Surr: 1,2-Dichloroethane-d4	93.8		70-130		%REC	1	5/5/2015 12:59:46 AM	19008
Surr: Toluene-d8	95.1		70-130		%REC	1	5/5/2015 12:59:46 AM	19008
Surr: 4-Bromofluorobenzene	81.4		70-130		%REC	1	5/5/2015 12:59:46 AM	19008
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	2.5	0.78	3.1	J	mg/Kg-dr	1	5/5/2015 12:59:46 AM	R25941
Surr: BFB	112	0	67.4-150		%REC	1	5/5/2015 12:59:46 AM	R25941

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505003

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5 (2-4')

Project: SWMU 10

Collection Date: 4/29/2015 12:12:00 PM

Lab ID: 1505003-002

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	780	5.3	9.6		mg/Kg-dr	1	5/5/2015 3:16:02 PM	19040
Motor Oil Range Organics (MRO)	300	48	48		mg/Kg-dr	1	5/5/2015 3:16:02 PM	19040
Surr: DNOP	110	0	57.9-140		%REC	1	5/5/2015 3:16:02 PM	19040
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	31	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.0087	0.0044	0.050	J	mg/Kg-dr	1	5/6/2015 3:33:31 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.9	3.5		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Arsenic	1.9	0.41	3.5	J	mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Barium	190	0.042	0.14		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Beryllium	1.4	0.010	0.21		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Cadmium	ND	0.039	0.14		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Chromium	5.0	0.085	0.42		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Cobalt	2.9	0.053	0.42		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Iron	12000	85	350		mg/Kg-dr	100	5/7/2015 11:05:07 AM	19080
Lead	9.2	0.15	0.35		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Manganese	410	0.17	0.28		mg/Kg-dr	2	5/7/2015 1:25:33 PM	19080
Nickel	4.4	0.18	0.70		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Selenium	ND	2.2	3.5		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Silver	ND	0.042	0.35		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Vanadium	11	0.047	3.5		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
Zinc	22	0.91	3.5		mg/Kg-dr	1	5/7/2015 1:24:03 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.90	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Acenaphthylene	ND	0.75	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Aniline	ND	0.65	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Anthracene	ND	0.63	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Azobenzene	ND	0.83	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Benz(a)anthracene	ND	0.58	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Benzo(a)pyrene	ND	0.83	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Benzo(b)fluoranthene	ND	0.70	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Benzo(g,h,i)perylene	ND	0.84	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Benzo(k)fluoranthene	ND	0.84	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Benzoic acid	ND	0.42	3.7		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Benzyl alcohol	ND	0.66	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Bis(2-chloroethoxy)methane	ND	0.71	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5 (2-4'

Project: SWMU 10

Collection Date: 4/29/2015 12:12:00 PM

Lab ID: 1505003-002

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Bis(2-chloroethyl)ether	ND	0.73	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.57	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.83	3.7		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
4-Bromophenyl phenyl ether	ND	0.79	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Butyl benzyl phthalate	ND	0.90	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Carbazole	ND	0.69	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
4-Chloro-3-methylphenol	ND	0.74	3.7		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
4-Chloroaniline	ND	0.69	3.7		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2-Chloronaphthalene	ND	0.79	1.9		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2-Chlorophenol	ND	0.69	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
4-Chlorophenyl phenyl ether	ND	1.1	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Chrysene	ND	0.74	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Di-n-butyl phthalate	ND	0.84	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Di-n-octyl phthalate	ND	0.83	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Dibenz(a,h)anthracene	ND	0.80	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Dibenzofuran	ND	0.79	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
1,2-Dichlorobenzene	ND	0.71	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
1,3-Dichlorobenzene	ND	0.66	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
1,4-Dichlorobenzene	ND	0.78	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
3,3'-Dichlorobenzidine	ND	0.57	1.9		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Diethyl phthalate	ND	0.84	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Dimethyl phthalate	ND	0.68	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2,4-Dichlorophenol	ND	0.74	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2,4-Dimethylphenol	ND	0.58	2.2		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.40	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2,4-Dinitrophenol	ND	0.31	3.7		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2,4-Dinitrotoluene	ND	0.66	3.7		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2,6-Dinitrotoluene	ND	0.82	3.7		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Fluoranthene	ND	0.90	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Fluorene	ND	1.0	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Hexachlorobenzene	ND	0.70	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Hexachlorobutadiene	ND	0.73	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Hexachlorocyclopentadiene	ND	0.51	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Hexachloroethane	ND	0.66	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.84	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Isophorone	ND	0.79	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
1-Methylnaphthalene	ND	0.69	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2-Methylnaphthalene	ND	0.68	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2-Methylphenol	ND	0.74	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505003

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5 (2-4')

Project: SWMU 10

Collection Date: 4/29/2015 12:12:00 PM

Lab ID: 1505003-002

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	ND	0.77	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
N-Nitrosodi-n-propylamine	ND	0.77	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
N-Nitrosodiphenylamine	ND	0.66	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Naphthalene	ND	0.71	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2-Nitroaniline	ND	0.84	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
3-Nitroaniline	ND	0.71	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
4-Nitroaniline	ND	0.67	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Nitrobenzene	ND	0.76	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2-Nitrophenol	ND	0.67	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
4-Nitrophenol	ND	0.64	1.9		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Pentachlorophenol	ND	0.46	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Phenanthrene	1.1	0.78	1.5	J	mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Phenol	ND	0.66	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Pyrene	ND	0.96	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Pyridine	ND	0.62	3.0		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
1,2,4-Trichlorobenzene	ND	0.76	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2,4,5-Trichlorophenol	ND	0.86	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
2,4,6-Trichlorophenol	ND	0.86	1.5		mg/Kg-dr	1	5/8/2015 6:54:09 PM	19026
Surr: 2-Fluorophenol	92.9		26.4-129		%REC	1	5/8/2015 6:54:09 PM	19026
Surr: Phenol-d5	92.6		34.8-118		%REC	1	5/8/2015 6:54:09 PM	19026
Surr: 2,4,6-Tribromophenol	90.9		26.8-128		%REC	1	5/8/2015 6:54:09 PM	19026
Surr: Nitrobenzene-d5	83.7		35.8-124		%REC	1	5/8/2015 6:54:09 PM	19026
Surr: 2-Fluorobiphenyl	80.1		24.5-139		%REC	1	5/8/2015 6:54:09 PM	19026
Surr: 4-Terphenyl-d14	103		29.4-129		%REC	1	5/8/2015 6:54:09 PM	19026
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	0.040	0.0060	0.040	J	mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Toluene	0.024	0.0048	0.040	J	mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Ethylbenzene	0.030	0.0037	0.040	J	mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Methyl tert-butyl ether (MTBE)	ND	0.0057	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,2,4-Trimethylbenzene	0.11	0.0020	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,3,5-Trimethylbenzene	0.054	0.0026	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,2-Dichloroethane (EDC)	ND	0.016	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,2-Dibromoethane (EDB)	ND	0.0032	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Naphthalene	0.16	0.0096	0.080		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1-Methylnaphthalene	0.63	0.024	0.16		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
2-Methylnaphthalene	0.74	0.026	0.16		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Acetone	ND	0.030	0.60		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Bromobenzene	ND	0.0030	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Bromodichloromethane	ND	0.0033	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505003

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5 (2-4')

Project: SWMU 10

Collection Date: 4/29/2015 12:12:00 PM

Lab ID: 1505003-002

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Bromoform	ND	0.0032	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Bromomethane	ND	0.0078	0.12		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
2-Butanone	ND	0.026	0.40		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Carbon disulfide	ND	0.029	0.40		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Carbon tetrachloride	ND	0.0039	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Chlorobenzene	ND	0.0031	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Chloroethane	ND	0.031	0.080		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Chloroform	ND	0.0042	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Chloromethane	ND	0.0047	0.12		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
2-Chlorotoluene	ND	0.0045	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
4-Chlorotoluene	ND	0.0030	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
cis-1,2-DCE	ND	0.0051	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
cis-1,3-Dichloropropene	ND	0.0028	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,2-Dibromo-3-chloropropane	ND	0.0069	0.080		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Dibromochloromethane	ND	0.0030	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Dibromomethane	ND	0.0042	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,2-Dichlorobenzene	ND	0.0024	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,3-Dichlorobenzene	ND	0.0047	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,4-Dichlorobenzene	ND	0.0050	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Dichlorodifluoromethane	ND	0.010	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,1-Dichloroethane	ND	0.016	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,1-Dichloroethene	ND	0.0028	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,2-Dichloropropane	ND	0.0022	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,3-Dichloropropane	ND	0.0055	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
2,2-Dichloropropane	ND	0.0059	0.080		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,1-Dichloropropene	ND	0.0060	0.080		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Hexachlorobutadiene	ND	0.0056	0.080		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
2-Hexanone	ND	0.0099	0.40		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Isopropylbenzene	0.0046	0.0034	0.040	J	mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
4-Isopropyltoluene	0.0092	0.0029	0.040	J	mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
4-Methyl-2-pentanone	ND	0.0070	0.40		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Methylene chloride	ND	0.016	0.12		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
n-Butylbenzene	0.016	0.0035	0.12	J	mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
n-Propylbenzene	0.010	0.0030	0.040	J	mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
sec-Butylbenzene	ND	0.0057	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Styrene	ND	0.0074	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
tert-Butylbenzene	ND	0.0046	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,1,1,2-Tetrachloroethane	ND	0.0033	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,1,2,2-Tetrachloroethane	ND	0.0049	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505003

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5 (2-4'

Project: SWMU 10

Collection Date: 4/29/2015 12:12:00 PM

Lab ID: 1505003-002

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Tetrachloroethene (PCE)	ND	0.0035	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
trans-1,2-DCE	ND	0.0026	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
trans-1,3-Dichloropropene	ND	0.0072	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,2,3-Trichlorobenzene	ND	0.0086	0.080		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,2,4-Trichlorobenzene	ND	0.0074	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,1,1-Trichloroethane	ND	0.0061	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,1,2-Trichloroethane	ND	0.0048	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Trichloroethene (TCE)	ND	0.0039	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Trichlorofluoromethane	ND	0.012	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
1,2,3-Trichloropropane	ND	0.0067	0.080		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Vinyl chloride	ND	0.016	0.040		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Xylenes, Total	0.15	0.011	0.080		mg/Kg-dr	1	5/5/2015 2:26:08 AM	19008
Surr: Dibromofluoromethane	101		70-130		%REC	1	5/5/2015 2:26:08 AM	19008
Surr: 1,2-Dichloroethane-d4	94.3		70-130		%REC	1	5/5/2015 2:26:08 AM	19008
Surr: Toluene-d8	93.9		70-130		%REC	1	5/5/2015 2:26:08 AM	19008
Surr: 4-Bromofluorobenzene	75.7		70-130		%REC	1	5/5/2015 2:26:08 AM	19008
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	4.7	1.0	4.0		mg/Kg-dr	1	5/5/2015 2:26:08 AM	R25941
Surr: BFB	106	0	67.4-150		%REC	1	5/5/2015 2:26:08 AM	R25941

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505003

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5 (4-6')

Project: SWMU 10

Collection Date: 4/29/2015 12:32:00 PM

Lab ID: 1505003-003

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	3000	54	97		mg/Kg-dr	10	5/7/2015 3:18:58 PM	19040
Motor Oil Range Organics (MRO)	ND	480	480		mg/Kg-dr	10	5/7/2015 3:18:58 PM	19040
Surr: DNOP	0	0	57.9-140	S	%REC	10	5/7/2015 3:18:58 PM	19040
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	50	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.0085	0.0063	0.071	J	mg/Kg-dr	1	5/6/2015 3:35:24 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	2.6	4.9		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Arsenic	1.5	0.57	4.9	J	mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Barium	110	0.058	0.20		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Beryllium	1.8	0.014	0.29		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Cadmium	0.062	0.054	0.20	J	mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Chromium	ND	0.12	0.59		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Cobalt	1.0	0.074	0.59		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Iron	7200	120	490		mg/Kg-dr	100	5/7/2015 11:06:30 AM	19080
Lead	17	0.21	0.49		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Manganese	200	0.11	0.20		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Nickel	0.69	0.25	0.98	J	mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Selenium	ND	3.0	4.9		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Silver	ND	0.058	0.49		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Vanadium	2.3	0.065	4.9	J	mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
Zinc	24	1.3	4.9		mg/Kg-dr	1	5/7/2015 1:26:55 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.24	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Acenaphthylene	ND	0.20	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Aniline	ND	0.17	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Anthracene	ND	0.17	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Azobenzene	ND	0.22	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Benz(a)anthracene	ND	0.16	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Benzo(a)pyrene	ND	0.22	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Benzo(b)fluoranthene	ND	0.19	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Benzo(g,h,i)perylene	ND	0.23	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Benzo(k)fluoranthene	ND	0.23	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Benzoic acid	ND	0.11	1.0		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Benzyl alcohol	ND	0.18	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Bis(2-chloroethoxy)methane	ND	0.19	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505003

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5 (4-6')

Project: SWMU 10

Collection Date: 4/29/2015 12:32:00 PM

Lab ID: 1505003-003

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Bis(2-chloroethyl)ether	ND	0.20	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.15	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.22	1.0		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
4-Bromophenyl phenyl ether	ND	0.21	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Butyl benzyl phthalate	ND	0.24	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Carbazole	ND	0.19	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
4-Chloro-3-methylphenol	ND	0.20	1.0		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
4-Chloroaniline	ND	0.18	1.0		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2-Chloronaphthalene	ND	0.21	0.50		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2-Chlorophenol	ND	0.19	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
4-Chlorophenyl phenyl ether	ND	0.30	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Chrysene	ND	0.20	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Di-n-butyl phthalate	ND	0.23	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Di-n-octyl phthalate	ND	0.22	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Dibenz(a,h)anthracene	ND	0.22	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Dibenzofuran	ND	0.21	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
1,2-Dichlorobenzene	ND	0.19	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
1,3-Dichlorobenzene	ND	0.18	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
1,4-Dichlorobenzene	ND	0.21	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
3,3'-Dichlorobenzidine	ND	0.15	0.50		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Diethyl phthalate	ND	0.23	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Dimethyl phthalate	ND	0.18	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2,4-Dichlorophenol	ND	0.20	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2,4-Dimethylphenol	ND	0.16	0.60		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.11	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2,4-Dinitrophenol	ND	0.083	1.0		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2,4-Dinitrotoluene	ND	0.18	1.0		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2,6-Dinitrotoluene	ND	0.22	1.0		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Fluoranthene	ND	0.24	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Fluorene	1.4	0.27	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Hexachlorobenzene	ND	0.19	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Hexachlorobutadiene	ND	0.20	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Hexachlorocyclopentadiene	ND	0.14	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Hexachloroethane	ND	0.18	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.23	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Isophorone	ND	0.21	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
1-Methylnaphthalene	16	0.93	2.0		mg/Kg-dr	5	5/11/2015 12:27:02 PM	19026
2-Methylnaphthalene	26	0.91	2.0		mg/Kg-dr	5	5/11/2015 12:27:02 PM	19026
2-Methylphenol	ND	0.20	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505003

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5 (4-6')

Project: SWMU 10

Collection Date: 4/29/2015 12:32:00 PM

Lab ID: 1505003-003

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	ND	0.21	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
N-Nitrosodi-n-propylamine	ND	0.21	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
N-Nitrosodiphenylamine	ND	0.18	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Naphthalene	5.8	0.19	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2-Nitroaniline	ND	0.23	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
3-Nitroaniline	ND	0.19	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
4-Nitroaniline	ND	0.18	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Nitrobenzene	ND	0.21	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2-Nitrophenol	ND	0.18	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
4-Nitrophenol	ND	0.17	0.50		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Pentachlorophenol	ND	0.12	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Phenanthrene	3.0	0.21	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Phenol	ND	0.18	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Pyrene	ND	0.26	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Pyridine	ND	0.17	0.80		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
1,2,4-Trichlorobenzene	ND	0.20	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2,4,5-Trichlorophenol	ND	0.23	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
2,4,6-Trichlorophenol	ND	0.23	0.40		mg/Kg-dr	1	5/8/2015 7:22:09 PM	19026
Surr: 2-Fluorophenol	69.4		26.4-129		%REC	1	5/8/2015 7:22:09 PM	19026
Surr: Phenol-d5	71.1		34.8-118		%REC	1	5/8/2015 7:22:09 PM	19026
Surr: 2,4,6-Tribromophenol	46.1		26.8-128		%REC	1	5/8/2015 7:22:09 PM	19026
Surr: Nitrobenzene-d5	40.1		35.8-124		%REC	1	5/8/2015 7:22:09 PM	19026
Surr: 2-Fluorobiphenyl	55.7		24.5-139		%REC	1	5/8/2015 7:22:09 PM	19026
Surr: 4-Terphenyl-d14	88.8		29.4-129		%REC	1	5/8/2015 7:22:09 PM	19026
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	8.0	0.12	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Toluene	7.1	0.094	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Ethylbenzene	14	0.073	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Methyl tert-butyl ether (MTBE)	ND	0.11	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,2,4-Trimethylbenzene	25	0.040	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,3,5-Trimethylbenzene	8.4	0.052	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,2-Dichloroethane (EDC)	ND	0.32	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,2-Dibromoethane (EDB)	ND	0.063	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Naphthalene	26	0.19	1.6		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1-Methylnaphthalene	46	0.48	3.2		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
2-Methylnaphthalene	80	2.6	16		mg/Kg-dr	50	5/5/2015 12:28:54 PM	R25982
Acetone	ND	0.59	12		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Bromobenzene	ND	0.059	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Bromodichloromethane	ND	0.065	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505003

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5 (4-6')

Project: SWMU 10

Collection Date: 4/29/2015 12:32:00 PM

Lab ID: 1505003-003

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Bromoform	ND	0.064	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Bromomethane	ND	0.15	2.4		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
2-Butanone	ND	0.51	7.9		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Carbon disulfide	ND	0.57	7.9		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Carbon tetrachloride	ND	0.077	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Chlorobenzene	ND	0.061	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Chloroethane	ND	0.61	1.6		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Chloroform	ND	0.083	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Chloromethane	ND	0.092	2.4		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
2-Chlorotoluene	ND	0.090	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
4-Chlorotoluene	ND	0.060	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
cis-1,2-DCE	ND	0.10	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
cis-1,3-Dichloropropene	ND	0.055	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,2-Dibromo-3-chloropropane	ND	0.14	1.6		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Dibromochloromethane	ND	0.060	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Dibromomethane	ND	0.084	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,2-Dichlorobenzene	ND	0.048	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,3-Dichlorobenzene	ND	0.093	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,4-Dichlorobenzene	ND	0.099	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Dichlorodifluoromethane	ND	0.20	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,1-Dichloroethane	ND	0.32	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,1-Dichloroethene	ND	0.055	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,2-Dichloropropane	ND	0.044	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,3-Dichloropropane	ND	0.11	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
2,2-Dichloropropane	ND	0.12	1.6		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,1-Dichloropropene	ND	0.12	1.6		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Hexachlorobutadiene	ND	0.11	1.6		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
2-Hexanone	ND	0.20	7.9		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Isopropylbenzene	2.6	0.067	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
4-Isopropyltoluene	1.2	0.056	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
4-Methyl-2-pentanone	ND	0.14	7.9		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Methylene chloride	ND	0.32	2.4		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
n-Butylbenzene	1.9	0.068	2.4	J	mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
n-Propylbenzene	3.8	0.059	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
sec-Butylbenzene	1.2	0.11	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Styrene	ND	0.15	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
tert-Butylbenzene	ND	0.091	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,1,1,2-Tetrachloroethane	ND	0.065	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,1,2,2-Tetrachloroethane	ND	0.096	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505003

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5 (4-6')

Project: SWMU 10

Collection Date: 4/29/2015 12:32:00 PM

Lab ID: 1505003-003

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Tetrachloroethene (PCE)	ND	0.069	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
trans-1,2-DCE	ND	0.052	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
trans-1,3-Dichloropropene	ND	0.14	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,2,3-Trichlorobenzene	ND	0.17	1.6		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,2,4-Trichlorobenzene	ND	0.15	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,1,1-Trichloroethane	ND	0.12	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,1,2-Trichloroethane	ND	0.095	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Trichloroethene (TCE)	ND	0.077	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Trichlorofluoromethane	ND	0.24	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
1,2,3-Trichloropropane	ND	0.13	1.6		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Vinyl chloride	ND	0.32	0.79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Xylenes, Total	54	0.22	1.6		mg/Kg-dr	10	5/5/2015 2:55:01 AM	19008
Surr: Dibromofluoromethane	101		70-130		%REC	10	5/5/2015 2:55:01 AM	19008
Surr: 1,2-Dichloroethane-d4	98.6		70-130		%REC	10	5/5/2015 2:55:01 AM	19008
Surr: Toluene-d8	98.9		70-130		%REC	10	5/5/2015 2:55:01 AM	19008
Surr: 4-Bromofluorobenzene	74.6		70-130		%REC	10	5/5/2015 2:55:01 AM	19008
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	740	20	79		mg/Kg-dr	10	5/5/2015 2:55:01 AM	R25941
Surr: BFB	99.6	0	67.4-150		%REC	10	5/5/2015 2:55:01 AM	R25941

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Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505003

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5 (14-16')

Project: SWMU 10

Collection Date: 4/29/2015 12:50:00 PM

Lab ID: 1505003-004

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	ND	5.5	10		mg/Kg-dr	1	5/5/2015 4:36:28 PM	19040
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	5/5/2015 4:36:28 PM	19040
Surr: DNOP	105	0	57.9-140		%REC	1	5/5/2015 4:36:28 PM	19040
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	49	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.011	0.0060	0.068	J	mg/Kg-dr	1	5/6/2015 3:37:14 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	2.5	4.7		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Arsenic	1.5	0.56	4.7	J	mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Barium	120	0.056	0.19		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Beryllium	1.8	0.014	0.28		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Cadmium	ND	0.053	0.19		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Chromium	2.5	0.11	0.57		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Cobalt	2.3	0.071	0.57		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Iron	10000	110	470		mg/Kg-dr	100	5/7/2015 11:08:10 AM	19080
Lead	16	0.21	0.47		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Manganese	280	0.11	0.19		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Nickel	3.1	0.24	0.94		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Selenium	ND	2.9	4.7		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Silver	ND	0.056	0.47		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Vanadium	7.2	0.063	4.7		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
Zinc	27	1.2	4.7		mg/Kg-dr	1	5/7/2015 1:29:41 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.24	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Acenaphthylene	ND	0.20	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Aniline	ND	0.17	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Anthracene	ND	0.17	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Azobenzene	ND	0.22	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Benz(a)anthracene	ND	0.16	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Benzo(a)pyrene	ND	0.22	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Benzo(b)fluoranthene	ND	0.19	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Benzo(g,h,i)perylene	ND	0.23	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Benzo(k)fluoranthene	ND	0.22	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Benzoic acid	ND	0.11	0.99		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Benzyl alcohol	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Bis(2-chloroethoxy)methane	ND	0.19	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505003

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5 (14-16')

Project: SWMU 10

Collection Date: 4/29/2015 12:50:00 PM

Lab ID: 1505003-004

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Bis(2-chloroethyl)ether	ND	0.20	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.15	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.22	0.99		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
4-Bromophenyl phenyl ether	ND	0.21	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Butyl benzyl phthalate	ND	0.24	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Carbazole	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
4-Chloro-3-methylphenol	ND	0.20	0.99		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
4-Chloroaniline	ND	0.18	0.99		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2-Chloronaphthalene	ND	0.21	0.50		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2-Chlorophenol	ND	0.19	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
4-Chlorophenyl phenyl ether	ND	0.30	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Chrysene	ND	0.20	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Di-n-butyl phthalate	ND	0.22	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Di-n-octyl phthalate	ND	0.22	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Dibenz(a,h)anthracene	ND	0.22	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Dibenzofuran	ND	0.21	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
1,2-Dichlorobenzene	ND	0.19	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
1,3-Dichlorobenzene	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
1,4-Dichlorobenzene	ND	0.21	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
3,3'-Dichlorobenzidine	ND	0.15	0.50		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Diethyl phthalate	ND	0.23	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Dimethyl phthalate	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2,4-Dichlorophenol	ND	0.20	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2,4-Dimethylphenol	ND	0.16	0.60		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.11	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2,4-Dinitrophenol	ND	0.082	0.99		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2,4-Dinitrotoluene	ND	0.18	0.99		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2,6-Dinitrotoluene	ND	0.22	0.99		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Fluoranthene	ND	0.24	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Fluorene	ND	0.27	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Hexachlorobenzene	ND	0.19	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Hexachlorobutadiene	ND	0.20	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Hexachlorocyclopentadiene	ND	0.14	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Hexachloroethane	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.23	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Isophorone	ND	0.21	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
1-Methylnaphthalene	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2-Methylnaphthalene	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2-Methylphenol	ND	0.20	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505003

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5 (14-16')

Project: SWMU 10

Collection Date: 4/29/2015 12:50:00 PM

Lab ID: 1505003-004

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	ND	0.21	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
N-Nitrosodi-n-propylamine	ND	0.21	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
N-Nitrosodiphenylamine	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Naphthalene	ND	0.19	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2-Nitroaniline	ND	0.23	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
3-Nitroaniline	ND	0.19	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
4-Nitroaniline	ND	0.18	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Nitrobenzene	ND	0.20	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2-Nitrophenol	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
4-Nitrophenol	ND	0.17	0.50		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Pentachlorophenol	ND	0.12	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Phenanthrene	ND	0.21	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Phenol	ND	0.18	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Pyrene	ND	0.26	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Pyridine	ND	0.17	0.80		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
1,2,4-Trichlorobenzene	ND	0.20	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2,4,5-Trichlorophenol	ND	0.23	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
2,4,6-Trichlorophenol	ND	0.23	0.40		mg/Kg-dr	1	5/7/2015 7:45:24 PM	19026
Surr: 2-Fluorophenol	63.1		26.4-129		%REC	1	5/7/2015 7:45:24 PM	19026
Surr: Phenol-d5	64.2		34.8-118		%REC	1	5/7/2015 7:45:24 PM	19026
Surr: 2,4,6-Tribromophenol	63.8		26.8-128		%REC	1	5/7/2015 7:45:24 PM	19026
Surr: Nitrobenzene-d5	54.7		35.8-124		%REC	1	5/7/2015 7:45:24 PM	19026
Surr: 2-Fluorobiphenyl	41.2		24.5-139		%REC	1	5/7/2015 7:45:24 PM	19026
Surr: 4-Terphenyl-d14	73.1		29.4-129		%REC	1	5/7/2015 7:45:24 PM	19026
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	0.049	0.010	0.071	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Toluene	0.013	0.0084	0.071	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Ethylbenzene	0.026	0.0065	0.071	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Methyl tert-butyl ether (MTBE)	ND	0.010	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,2,4-Trimethylbenzene	0.17	0.0035	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,3,5-Trimethylbenzene	0.056	0.0046	0.071	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,2-Dichloroethane (EDC)	ND	0.028	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,2-Dibromoethane (EDB)	ND	0.0056	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Naphthalene	0.11	0.017	0.14	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1-Methylnaphthalene	0.38	0.042	0.28		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
2-Methylnaphthalene	0.69	0.046	0.28		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Acetone	ND	0.053	1.1		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Bromobenzene	ND	0.0052	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Bromodichloromethane	ND	0.0058	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505003

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5 (14-16')

Project: SWMU 10

Collection Date: 4/29/2015 12:50:00 PM

Lab ID: 1505003-004

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Bromoform	ND	0.0057	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Bromomethane	ND	0.014	0.21		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
2-Butanone	ND	0.045	0.71		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Carbon disulfide	ND	0.051	0.71		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Carbon tetrachloride	ND	0.0069	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Chlorobenzene	ND	0.0054	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Chloroethane	ND	0.055	0.14		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Chloroform	ND	0.0074	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Chloromethane	ND	0.0082	0.21		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
2-Chlorotoluene	ND	0.0080	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
4-Chlorotoluene	ND	0.0053	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
cis-1,2-DCE	ND	0.0089	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
cis-1,3-Dichloropropene	ND	0.0049	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,2-Dibromo-3-chloropropane	ND	0.012	0.14		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Dibromochloromethane	ND	0.0053	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Dibromomethane	ND	0.0074	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,2-Dichlorobenzene	ND	0.0043	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,3-Dichlorobenzene	ND	0.0083	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,4-Dichlorobenzene	ND	0.0088	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Dichlorodifluoromethane	ND	0.018	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,1-Dichloroethane	ND	0.028	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,1-Dichloroethene	ND	0.0049	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,2-Dichloropropane	ND	0.0039	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,3-Dichloropropane	ND	0.0097	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
2,2-Dichloropropane	ND	0.010	0.14		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,1-Dichloropropene	ND	0.011	0.14		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Hexachlorobutadiene	ND	0.0098	0.14		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
2-Hexanone	ND	0.017	0.71		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Isopropylbenzene	0.013	0.0060	0.071	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
4-Isopropyltoluene	0.020	0.0050	0.071	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
4-Methyl-2-pentanone	ND	0.012	0.71		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Methylene chloride	ND	0.028	0.21		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
n-Butylbenzene	0.038	0.0061	0.21	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
n-Propylbenzene	0.026	0.0053	0.071	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
sec-Butylbenzene	ND	0.010	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Styrene	ND	0.013	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
tert-Butylbenzene	ND	0.0081	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,1,1,2-Tetrachloroethane	ND	0.0058	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,1,2,2-Tetrachloroethane	ND	0.0086	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505003

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5 (14-16'

Project: SWMU 10

Collection Date: 4/29/2015 12:50:00 PM

Lab ID: 1505003-004

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Tetrachloroethene (PCE)	ND	0.0061	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
trans-1,2-DCE	ND	0.0046	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
trans-1,3-Dichloropropene	ND	0.013	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,2,3-Trichlorobenzene	ND	0.015	0.14		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,2,4-Trichlorobenzene	ND	0.013	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,1,1-Trichloroethane	ND	0.011	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,1,2-Trichloroethane	ND	0.0085	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Trichloroethene (TCE)	ND	0.0069	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Trichlorofluoromethane	ND	0.021	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
1,2,3-Trichloropropane	ND	0.012	0.14		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Vinyl chloride	ND	0.028	0.071		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Xylenes, Total	0.11	0.020	0.14	J	mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Surr: Dibromofluoromethane	100		70-130		%REC	1	5/5/2015 12:57:41 PM	R25982
Surr: 1,2-Dichloroethane-d4	89.7		70-130		%REC	1	5/5/2015 12:57:41 PM	R25982
Surr: Toluene-d8	94.0		70-130		%REC	1	5/5/2015 12:57:41 PM	R25982
Surr: 4-Bromofluorobenzene	92.4		70-130		%REC	1	5/5/2015 12:57:41 PM	R25982
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	13	1.8	7.1		mg/Kg-dr	1	5/5/2015 12:57:41 PM	R25982
Surr: BFB	111	0	67.4-150		%REC	1	5/5/2015 12:57:41 PM	R25982

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505003

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5 (22-24')

Project: SWMU 10

Collection Date: 4/29/2015 1:10:00 PM

Lab ID: 1505003-005

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	ND	5.5	10		mg/Kg-dr	1	5/5/2015 5:03:15 PM	19040
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	5/5/2015 5:03:15 PM	19040
Surr: DNOP	110	0	57.9-140		%REC	1	5/5/2015 5:03:15 PM	19040
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	12	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.0039	0.0034	0.039	J	mg/Kg-dr	1	5/6/2015 3:39:05 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.5	2.8		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Arsenic	1.6	0.33	2.8	J	mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Barium	200	0.034	0.11		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Beryllium	0.99	0.0084	0.17		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Chromium	15	0.068	0.34		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Cobalt	7.4	0.043	0.34		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Iron	18000	68	280		mg/Kg-dr	100	5/7/2015 11:09:34 AM	19080
Lead	ND	0.12	0.28		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Manganese	820	0.33	0.57		mg/Kg-dr	5	5/8/2015 2:32:19 PM	19080
Nickel	15	0.15	0.57		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Silver	ND	0.034	0.28		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Vanadium	18	0.038	2.8		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
Zinc	23	0.73	2.8		mg/Kg-dr	1	5/7/2015 1:36:50 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Acenaphthylene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Aniline	ND	0.098	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Anthracene	ND	0.096	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Benz(a)anthracene	ND	0.088	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Benzoic acid	ND	0.064	0.56		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505003

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5 (22-24')

Project: SWMU 10

Collection Date: 4/29/2015 1:10:00 PM

Lab ID: 1505003-005

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Bis(2-chloroethyl)ether	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.086	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.13	0.56		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Carbazole	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
4-Chloro-3-methylphenol	ND	0.11	0.56		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
4-Chloroaniline	ND	0.10	0.56		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2-Chlorophenol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Chrysene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Di-n-butyl phthalate	ND	0.13	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Di-n-octyl phthalate	ND	0.13	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Dibenz(a,h)anthracene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
3,3'-Dichlorobenzidine	ND	0.087	0.28		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Dimethyl phthalate	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2,4-Dichlorophenol	ND	0.11	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2,4-Dimethylphenol	ND	0.088	0.34		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.061	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2,4-Dinitrophenol	ND	0.047	0.56		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2,4-Dinitrotoluene	ND	0.10	0.56		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2,6-Dinitrotoluene	ND	0.12	0.56		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Fluorene	ND	0.15	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Hexachlorobutadiene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Hexachlorocyclopentadiene	ND	0.078	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Isophorone	ND	0.12	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
1-Methylnaphthalene	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2-Methylnaphthalene	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2-Methylphenol	ND	0.11	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505003

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5 (22-24')

Project: SWMU 10

Collection Date: 4/29/2015 1:10:00 PM

Lab ID: 1505003-005

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
4-Nitroaniline	ND	0.10	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Nitrobenzene	ND	0.12	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2-Nitrophenol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
4-Nitrophenol	ND	0.097	0.28		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Pentachlorophenol	ND	0.070	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Pyridine	ND	0.094	0.45		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2,4,5-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
2,4,6-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:13:38 PM	19026
Surr: 2-Fluorophenol	64.5		26.4-129		%REC	1	5/7/2015 8:13:38 PM	19026
Surr: Phenol-d5	62.2		34.8-118		%REC	1	5/7/2015 8:13:38 PM	19026
Surr: 2,4,6-Tribromophenol	75.4		26.8-128		%REC	1	5/7/2015 8:13:38 PM	19026
Surr: Nitrobenzene-d5	56.1		35.8-124		%REC	1	5/7/2015 8:13:38 PM	19026
Surr: 2-Fluorobiphenyl	60.1		24.5-139		%REC	1	5/7/2015 8:13:38 PM	19026
Surr: 4-Terphenyl-d14	95.5		29.4-129		%REC	1	5/7/2015 8:13:38 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.0179	0.000432	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Toluene	0.0112	0.000199	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Ethylbenzene	0.00258	0.000322	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Xylenes, Total	0.00849	0.00114	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000803	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,2,4-Trimethylbenzene	0.00263	0.000501	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,3,5-Trimethylbenzene	0.00179	0.000336	0.00192	J	mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000513	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000229	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Naphthalene	0.000785	0.000626	0.00192	J	mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1-Methylnaphthalene	0.000843	0.000752	0.00383	J	mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
2-Methylnaphthalene	0.000852	0.000749	0.00383	J	mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Acetone	0.00186	0.00120	0.00958	J	mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Bromobenzene	ND	0.000533	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5 (22-24')

Project: SWMU 10

Collection Date: 4/29/2015 1:10:00 PM

Lab ID: 1505003-005

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Bromodichloromethane	ND	0.000259	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Bromoform	ND	0.000496	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Bromomethane	ND	0.00113	0.00287		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
2-Butanone	ND	0.000613	0.00958		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Carbon tetrachloride	ND	0.000347	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Chlorobenzene	ND	0.000194	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Chloroethane	ND	0.00192	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Chloroform	ND	0.000395	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Chloromethane	ND	0.000226	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
2-Chlorotoluene	ND	0.000374	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Carbon disulfide	ND	0.000867	0.00958		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
4-Chlorotoluene	ND	0.000369	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
cis-1,2-DCE	ND	0.000507	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
cis-1,3-Dichloropropene	ND	0.00192	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000563	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Dibromochloromethane	ND	0.000215	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Dibromomethane	ND	0.00109	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,2-Dichlorobenzene	ND	0.000425	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,3-Dichlorobenzene	ND	0.000325	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,4-Dichlorobenzene	ND	0.000301	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Dichlorodifluoromethane	ND	0.000782	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,1-Dichloroethane	ND	0.000447	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,1-Dichloroethene	ND	0.000320	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,2-Dichloropropane	ND	0.000409	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,3-Dichloropropane	ND	0.000298	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
2,2-Dichloropropane	ND	0.000333	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,1-Dichloropropene	ND	0.000351	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Hexachlorobutadiene	ND	0.000387	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Isopropylbenzene	ND	0.000444	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
4-Isopropyltoluene	ND	0.000743	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Methylene chloride	0.000565	0.000473	0.00192	J	mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
n-Butylbenzene	ND	0.000786	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
2-Hexanone	ND	0.000398	0.00958		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
n-Propylbenzene	0.000469	0.000359	0.00192	J	mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
sec-Butylbenzene	0.000766	0.000484	0.00192	J	mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Styrene	ND	0.000317	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
4-Methyl-2-pentanone	ND	0.000809	0.00958		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
tert-Butylbenzene	ND	0.000294	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000312	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505003

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5 (22-24')

Project: SWMU 10

Collection Date: 4/29/2015 1:10:00 PM

Lab ID: 1505003-005

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
1,1,2,2-Tetrachloroethane	ND	0.000421	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Tetrachloroethene (PCE)	ND	0.000380	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
trans-1,2-DCE	ND	0.000310	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
trans-1,3-Dichloropropene	ND	0.000250	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,2,3-Trichlorobenzene	ND	0.000701	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,2,4-Trichlorobenzene	ND	0.000718	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,1,1-Trichloroethane	ND	0.000272	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,1,2-Trichloroethane	ND	0.00192	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Trichloroethene (TCE)	ND	0.000381	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Trichlorofluoromethane	ND	0.000387	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
1,2,3-Trichloropropane	ND	0.000673	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Vinyl chloride	ND	0.000219	0.00192		mg/Kg-dr	1	5/6/2015 6:21:36 PM	19032
Surr: 1,2-Dichloroethane-d4	90.9	0	70-130		%REC	1	5/6/2015 6:21:36 PM	19032
Surr: 4-Bromofluorobenzene	106	0	70-130		%REC	1	5/6/2015 6:21:36 PM	19032
Surr: Dibromofluoromethane	105	0	70-130		%REC	1	5/6/2015 6:21:36 PM	19032
Surr: Toluene-d8	81.3	0	70-130		%REC	1	5/6/2015 6:21:36 PM	19032
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.87	3.5		mg/Kg-dr	1	5/5/2015 8:10:29 PM	R25982
Surr: BFB	106	0	67.4-150		%REC	1	5/5/2015 8:10:29 PM	R25982

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	



12065 Lebanon Rd.
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Est. 1970

REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 05, 2015
Description :
Sample ID : 1505003-001C SWMU 10-5 0-2 FT
Collected By :
Collection Date : 04/29/15 12:00

ESC Sample # : L762976-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium, Hexavalent	5.7	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	140		mV	2580 B-2011	05/10/15	1
pH	8.1	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 05/13/15 11:23 Printed: 05/13/15 11:24

L762976-01 (PH) - 8.1 at 21.0c



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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 05, 2015
Description :
Sample ID : 1505003-002C SWMU 10-5 2-4 FT
Collected By :
Collection Date : 04/29/15 12:12

ESC Sample # : L762976-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	130		mV	2580 B-2011	05/10/15	1
pH	8.5	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit

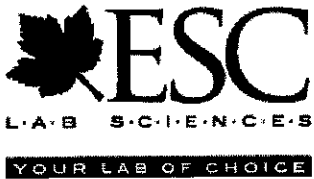
Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762976-02 (PH) - 8.5 at 20.7c



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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762976-03

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505003-003C SWMU 10-5 4-6 FT

Project # :

Collected By :
Collection Date : 04/29/15 12:32

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	140		mV	2580 B-2011	05/10/15	1
pH	8.3	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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

Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762976-03 (PH) - 8.3 at 20.9c



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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 05, 2015
Description :
Sample ID : 1505003-004C SWMU 10-5 14-16 FT
Collected By :
Collection Date : 04/29/15 12:50

ESC Sample # : L762976-04

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	140		mV	2580 B-2011	05/10/15	1
pH	8.3	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762976-04 (PH) - 8.3 at 21.0c



12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859
Tax I.D. 62-0814289
Est. 1970

REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 05, 2015
Description :
Sample ID : 1505003-005C SWMU 10-5 22-24 FT
Collected By :
Collection Date : 04/29/15 13:10

ESC Sample # : L762976-05

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	120		mV	2580 B-2011	05/10/15	1
pH	9.2	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762976-05 (PH) - 9.2 at 20.7c



YOUR LAB OF CHOICE

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762976

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1-800-767-5859
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Tax I.D. 62-0814289

Est. 1970

May 13, 2015

Analyte	Result	Laboratory Blank Units % Rec	Limit	Batch	Date Analyzed
Chromium, Hexavalent	< 2	mg/kg		WG787134	05/09/15 04:55
Cyanide	< .25	mg/kg		WG787733	05/12/15 10:23
Cyanide	< .25	mg/kg		WG787856	05/12/15 12:46

Analyte	Units	Result	Duplicate Duplicate	RPD	Limit	Ref Samp	Batch
pH	su	7.60	7.60	0.656	1	L762972-04	WG787168
pH	su	6.70	6.70	0.449	1	L763354-01	WG787168
Chromium, Hexavalent	mg/kg	0.0	0.0	0.0	20	L762972-07	WG787134
ORP	mV	70.0	70.0	0.0	20	L762970-02	WG787860
ORP	mV	140.	140.	0.0	20	L762978-01	WG787860
Cyanide	mg/kg	0.0	0.0	0.0	20	L762970-02	WG787733
Cyanide	mg/kg	0.0	0.0	0.0	20	L762976-05	WG787733
Cyanide	mg/kg	0.0	0.0	0.0	20	L763578-02	WG787856
Cyanide	mg/kg	0.0	0.0	0.0	20	L763853-01	WG787856

Analyte	Units	Laboratory Control Sample Known Val Result	% Rec	Limit	Batch
pH	su	7.84 7.80	99.5	98.3-101.7	WG787168
Chromium, Hexavalent	mg/kg	59.8 66.4	111.	80-120	WG787134
ORP	mV	100 100.	100.	90-110	WG787860
Cyanide	mg/kg	101 102.	101.	50-150	WG787733
Cyanide	mg/kg	101 108.	107.	50-150	WG787856

Analyte	Units	Laboratory Control Sample Duplicate Result Ref %Rec	Limit	RPD	Limit	Batch
pH	su	7.80 7.80 99.0	98.3-101.7	0.0	20	WG787168
Chromium, Hexavalent	mg/kg	66.6 66.4 111.	80-120	0.301	20	WG787134
ORP	mV	100. 100. 100.	90-110	0.0	20	WG787860
Cyanide	mg/kg	107. 102. 106.	50-150	4.78	20	WG787733

* Performance of this Analyte is outside of established criteria.

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



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Est. 1970

May 13, 2015

Analyte	Laboratory Control Sample Duplicate				Limit	RPD	Limit	Batch
	Units	Result	Ref	%Rec				
Cyanide	mg/kg	112.	108.	111.	50-150	3.64	20	WG787856

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
Chromium, Hexavalent	mg/kg	19.3	0.0	20	96.0	75-125	L762972-07	WG787134
Cyanide	mg/kg	3.27	0.0	3.33	98.0	80-120	L763578-01	WG787856

Analyte	Units	Matrix Spike Duplicate				Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec						
Chromium, Hexavalent	mg/kg	19.5	19.3	97.5		75-125	1.03	20	L762972-07	WG787134
Cyanide	mg/kg	3.18	3.27	95.5		80-120	2.79	20	L763578-01	WG787856

Batch number /Run number / Sample number cross reference

WG787168: R3035796: L762976-01 02 03 04 05
WG787134: R3035910: L762976-01 02 03 04 05
WG787860: R3036066: L762976-01 02 03 04 05
WG787733: R3036388: L762976-01 02 03 05
WG787856: R3036409: L762976-04

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

* Performance of this Analyte is outside of established criteria.

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505003

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19040	SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID: 19040			RunNo: 25952					
Prep Date:	5/4/2015	Analysis Date: 5/5/2015			SeqNo: 769701		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	9.5		10.00		95.4	57.9	140			

Sample ID	LCS-19040		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 19040		RunNo: 25952					
Prep Date:	5/4/2015		Analysis Date: 5/5/2015		SeqNo: 769702		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	102	67.8	130			
Surr: DNOP	4.9		5.000		97.4	57.9	140			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505003

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19008	SampType:	MBLK	TestCode:	EPA Method 8260B: Volatiles					
Client ID:	PBS	Batch ID:	19008	RunNo:	25941					
Prep Date:	5/1/2015	Analysis Date:	5/4/2015	SeqNo:	768949	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0091	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	0.054	0.75								J
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	0.038	0.50								J
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	0.0048	0.050								J
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	0.012	0.050								J
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505003

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19008		SampType:	MBLK		TestCode:	EPA Method 8260B: Volatiles			
Client ID:	PBS		Batch ID:	19008		RunNo:	25941			
Prep Date:	5/1/2015		Analysis Date:	5/4/2015		SeqNo:	768949		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.51		0.5000		102	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.1	70	130			
Surr: Toluene-d8	0.46		0.5000		92.4	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		91.7	70	130			

Sample ID	lcs-19008		SampType:	LCS		TestCode:	EPA Method 8260B: Volatiles			
Client ID:	LCSS		Batch ID:	19008		RunNo:	25941			
Prep Date:	5/1/2015		Analysis Date:	5/4/2015		SeqNo:	768950		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.050	1.000	0	97.5	70	130			
Toluene	0.89	0.050	1.000	0	89.1	70	130			
Chlorobenzene	1.0	0.050	1.000	0	99.7	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505003

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-19008		SampType: LCS			TestCode: EPA Method 8260B: Volatiles				
Client ID:	LCSS		Batch ID: 19008			RunNo: 25941				
Prep Date:	5/1/2015		Analysis Date: 5/4/2015			SeqNo: 768950		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.2	0.050	1.000	0	123	60.6	134			
Trichloroethene (TCE)	0.90	0.050	1.000	0	90.3	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		103	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.7	70	130			
Surr: Toluene-d8	0.44		0.5000		88.0	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.9	70	130			

Sample ID	5mL rb		SampType: MBLK			TestCode: EPA Method 8260B: Volatiles				
Client ID:	PBS		Batch ID: R25982			RunNo: 25982				
Prep Date:			Analysis Date: 5/5/2015			SeqNo: 770974		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0083	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505003

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5mL rb	SampType: MBLK			TestCode: EPA Method 8260B: Volatiles					
Client ID:	PBS	Batch ID: R25982			RunNo: 25982					
Prep Date:		Analysis Date: 5/5/2015			SeqNo: 770974		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.49		0.5000		98.1	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505003

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260B: Volatiles					
Client ID:	PBS	Batch ID:	R25982	RunNo:	25982					
Prep Date:		Analysis Date:	5/5/2015	SeqNo:	770974	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		89.0	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		100	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: Volatiles					
Client ID:	LCSS	Batch ID:	R25982	RunNo:	25982					
Prep Date:		Analysis Date:	5/5/2015	SeqNo:	770975	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	101	70	130			
Toluene	1.1	0.050	1.000	0	105	70	130			
Chlorobenzene	1.0	0.050	1.000	0	102	70	130			
1,1-Dichloroethene	1.2	0.050	1.000	0	116	60.6	134			
Trichloroethene (TCE)	0.92	0.050	1.000	0	92.4	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		99.5	70	130			
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		91.1	70	130			
Surr: Toluene-d8	0.51		0.5000		103	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.2	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505003

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	1505003-005AMS		SampType: MS		TestCode: Method 8260B/5035LOW: VOLATILES					
Client ID:	SWMU 10-5 (22-24')		Batch ID: 19032		RunNo: 26013					
Prep Date:	5/4/2015		Analysis Date: 5/6/2015		SeqNo: 771126		Units: mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0117	0.00223	0.01114	0.01785	-55.6	33.4	127			S
Toluene	0.0118	0.00223	0.01114	0.01116	5.42	24.8	130			S
Chlorobenzene	0.0107	0.00223	0.01114	0	96.5	25.8	132			
1,1-Dichloroethene	0.0121	0.00223	0.01114	0	109	70	130			
Trichloroethene (TCE)	0.0112	0.00223	0.01114	0	101	70	130			
Surr: 1,2-Dichloroethane-d4	0.0232		0.02784		83.3	70	130			
Surr: 4-Bromofluorobenzene	0.0258		0.02784		92.6	70	130			
Surr: Dibromofluoromethane	0.0254		0.02784		91.1	70	130			
Surr: Toluene-d8	0.0263		0.02784		94.3	70	130			

Sample ID	1505003-005amsd		SampType: MSD		TestCode: Method 8260B/5035LOW: VOLATILES					
Client ID:	SWMU 10-5 (22-24')		Batch ID: 19032		RunNo: 26013					
Prep Date:	5/4/2015		Analysis Date: 5/6/2015		SeqNo: 771127		Units: mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0140	0.00226	0.01129	0.01785	-34.0	33.4	127	18.3	20	S
Toluene	0.0133	0.00226	0.01129	0.01116	19.0	24.8	130	12.3	20	S
Chlorobenzene	0.0121	0.00226	0.01129	0	107	25.8	132	12.0	20	
1,1-Dichloroethene	0.0146	0.00226	0.01129	0	129	70	130	18.7	20	
Trichloroethene (TCE)	0.0137	0.00226	0.01129	0	121	70	130	19.9	20	
Surr: 1,2-Dichloroethane-d4	0.0248		0.02823		87.7	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.0272		0.02823		96.3	70	130	0	0	
Surr: Dibromofluoromethane	0.0274		0.02823		97.0	70	130	0	0	
Surr: Toluene-d8	0.0269		0.02823		95.4	70	130	0	0	

Sample ID	lcs-19032		SampType: LCS		TestCode: Method 8260B/5035LOW: VOLATILES					
Client ID:	LCSS		Batch ID: 19032		RunNo: 26013					
Prep Date:	5/4/2015		Analysis Date: 5/6/2015		SeqNo: 771128		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0108	0.00200	0.01000	0	108	70	130			
Toluene	0.00992	0.00200	0.01000	0	99.2	70	130			
Chlorobenzene	0.00872	0.00200	0.01000	0	87.2	70	130			
1,1-Dichloroethene	0.0112	0.00200	0.01000	0	112	70	130			
Trichloroethene (TCE)	0.0105	0.00200	0.01000	0	105	61.6	131			
Surr: 1,2-Dichloroethane-d4	0.0266		0.02500		106	70	130			
Surr: 4-Bromofluorobenzene	0.0221		0.02500		88.5	70	130			
Surr: Dibromofluoromethane	0.0266		0.02500		107	70	130			
Surr: Toluene-d8	0.0248		0.02500		99.4	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505003

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19032	SampType:	MBLK	TestCode:	Method 8260B/5035LOW: VOLATILES					
Client ID:	PBS	Batch ID:	19032	RunNo:	26013					
Prep Date:	5/4/2015	Analysis Date:	5/6/2015	SeqNo:	771129	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	0.000210	0.00200								J
Ethylbenzene	ND	0.00200								
Xylenes, Total	ND	0.00200								
Methyl tert-butyl ether (MTBE)	ND	0.00200								
1,2,4-Trimethylbenzene	ND	0.00200								
1,3,5-Trimethylbenzene	ND	0.00200								
1,2-Dichloroethane (EDC)	ND	0.00200								
1,2-Dibromoethane (EDB)	ND	0.00200								
Naphthalene	ND	0.00200								
1-Methylnaphthalene	ND	0.00400								
2-Methylnaphthalene	ND	0.00400								
Acetone	ND	0.0100								
Bromobenzene	ND	0.00200								
Bromodichloromethane	ND	0.00200								
Bromoform	ND	0.00200								
Bromomethane	ND	0.00300								
2-Butanone	0.000830	0.0100								J
Carbon tetrachloride	ND	0.00200								
Chlorobenzene	ND	0.00200								
Chloroethane	ND	0.00200								
Chloroform	ND	0.00200								
Chloromethane	ND	0.00200								
2-Chlorotoluene	ND	0.00200								
Carbon disulfide	ND	0.0100								
4-Chlorotoluene	ND	0.00200								
cis-1,2-DCE	ND	0.00200								
cis-1,3-Dichloropropene	ND	0.00200								
1,2-Dibromo-3-chloropropane	ND	0.00200								
Dibromochloromethane	ND	0.00200								
Dibromomethane	ND	0.00200								
1,2-Dichlorobenzene	ND	0.00200								
1,3-Dichlorobenzene	ND	0.00200								
1,4-Dichlorobenzene	ND	0.00200								
Dichlorodifluoromethane	ND	0.00200								
1,1-Dichloroethane	ND	0.00200								
1,1-Dichloroethene	ND	0.00200								
1,2-Dichloropropane	ND	0.00200								
1,3-Dichloropropane	ND	0.00200								

Qualifiers:

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D Sample Diluted Due to Matrix
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R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505003

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19032		SampType: MBLK		TestCode: Method 8260B/5035LOW: VOLATILES					
Client ID:	PBS		Batch ID: 19032		RunNo: 26013					
Prep Date:	5/4/2015		Analysis Date: 5/6/2015		SeqNo: 771129		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,2-Dichloropropane	ND	0.00200								
1,1-Dichloropropene	ND	0.00200								
Hexachlorobutadiene	ND	0.00200								
Isopropylbenzene	ND	0.00200								
4-Isopropyltoluene	ND	0.00200								
Methylene chloride	ND	0.00200								
n-Butylbenzene	ND	0.00200								
2-Hexanone	ND	0.0100								
n-Propylbenzene	ND	0.00200								
sec-Butylbenzene	ND	0.00200								
Styrene	ND	0.00200								
4-Methyl-2-pentanone	ND	0.0100								
tert-Butylbenzene	ND	0.00200								
1,1,1,2-Tetrachloroethane	ND	0.00200								
1,1,2,2-Tetrachloroethane	ND	0.00200								
Tetrachloroethene (PCE)	ND	0.00200								
trans-1,2-DCE	ND	0.00200								
trans-1,3-Dichloropropene	ND	0.00200								
1,2,3-Trichlorobenzene	ND	0.00200								
1,2,4-Trichlorobenzene	ND	0.00200								
1,1,1-Trichloroethane	ND	0.00200								
1,1,2-Trichloroethane	ND	0.00200								
Trichloroethene (TCE)	ND	0.00200								
Trichlorofluoromethane	ND	0.00200								
1,2,3-Trichloropropane	ND	0.00200								
Vinyl chloride	ND	0.00200								
Surr: 1,2-Dichloroethane-d4	0.0275		0.02500		110	70	130			
Surr: 4-Bromofluorobenzene	0.0232		0.02500		93.0	70	130			
Surr: Dibromofluoromethane	0.0276		0.02500		110	70	130			
Surr: Toluene-d8	0.0239		0.02500		95.4	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505003

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19026	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBS	Batch ID:	19026	RunNo:	26053					
Prep Date:	5/4/2015	Analysis Date:	5/7/2015	SeqNo:	772520	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3'-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

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D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505003

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19026	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBS	Batch ID:	19026	RunNo:	26053					
Prep Date:	5/4/2015	Analysis Date:	5/7/2015	SeqNo:	772520	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.6		3.330		79.4	26.4	129			
Surr: Phenol-d5	2.7		3.330		80.7	34.8	118			
Surr: 2,4,6-Tribromophenol	2.5		3.330		75.6	26.8	128			
Surr: Nitrobenzene-d5	1.3		1.670		76.1	35.8	124			
Surr: 2-Fluorobiphenyl	1.4		1.670		81.2	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		88.4	29.4	129			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505003

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-19026		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS		Batch ID: 19026		RunNo: 26053					
Prep Date:	5/4/2015		Analysis Date: 5/7/2015		SeqNo: 772521		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.5	0.20	1.670	0	88.6	45.8	114			
4-Chloro-3-methylphenol	2.9	0.50	3.330	0	86.8	52.3	122			
2-Chlorophenol	2.6	0.20	3.330	0	77.2	49.9	115			
1,4-Dichlorobenzene	1.4	0.20	1.670	0	84.4	43.7	107			
2,4-Dinitrotoluene	1.3	0.50	1.670	0	77.6	36	106			
N-Nitrosodi-n-propylamine	1.4	0.20	1.670	0	81.3	39.5	110			
4-Nitrophenol	3.0	0.25	3.330	0	90.2	45.1	121			
Pentachlorophenol	2.5	0.40	3.330	0	73.7	23.7	111			
Phenol	2.9	0.20	3.330	0	86.4	52.7	119			
Pyrene	1.3	0.20	1.670	0	76.9	50.4	116			
1,2,4-Trichlorobenzene	1.6	0.20	1.670	0	98.3	40.1	114			
Surr: 2-Fluorophenol	2.6		3.330		78.7	26.4	129			
Surr: Phenol-d5	2.7		3.330		81.5	34.8	118			
Surr: 2,4,6-Tribromophenol	3.0		3.330		91.3	26.8	128			
Surr: Nitrobenzene-d5	1.4		1.670		83.7	35.8	124			
Surr: 2-Fluorobiphenyl	1.5		1.670		90.8	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		87.3	29.4	129			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505003

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19078		SampType: MBLK		TestCode: EPA Method 7471: Mercury					
Client ID:	PBS		Batch ID: 19078		RunNo: 26010					
Prep Date:	5/6/2015		Analysis Date: 5/6/2015		SeqNo: 771069		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	LCS-19078		SampType: LCS		TestCode: EPA Method 7471: Mercury					
Client ID:	LCSS		Batch ID: 19078		RunNo: 26010					
Prep Date:	5/6/2015		Analysis Date: 5/6/2015		SeqNo: 771070		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	103	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505003

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19080		SampType: MBLK			TestCode: EPA Method 6010B: Soil Metals				
Client ID:	PBS		Batch ID: 19080			RunNo: 26050				
Prep Date:	5/6/2015		Analysis Date: 5/7/2015			SeqNo: 772227 Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	1.1	2.5								J
Lead	0.13	0.25								J
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	0.74	2.5								J

Sample ID	LCS-19080		SampType: LCS			TestCode: EPA Method 6010B: Soil Metals				
Client ID:	LCSS		Batch ID: 19080			RunNo: 26050				
Prep Date:	5/6/2015		Analysis Date: 5/7/2015			SeqNo: 772228 Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	26	2.5	25.00	0	103	80	120			
Arsenic	25	2.5	25.00	0	101	80	120			
Barium	25	0.10	25.00	0	100	80	120			
Beryllium	27	0.15	25.00	0	107	80	120			
Cadmium	25	0.10	25.00	0	101	80	120			
Chromium	25	0.30	25.00	0	102	80	120			
Cobalt	25	0.30	25.00	0	99.2	80	120			
Iron	26	2.5	25.00	0	103	80	120			
Lead	25	0.25	25.00	0	101	80	120			
Manganese	25	0.10	25.00	0	101	80	120			
Nickel	25	0.50	25.00	0	99.2	80	120			
Selenium	25	2.5	25.00	0	99.4	80	120			
Silver	5.4	0.25	5.000	0	107	80	120			
Vanadium	26	2.5	25.00	0	105	80	120			
Zinc	26	2.5	25.00	0	103	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505003

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID 5mL rb	SampType: MBLK			TestCode: EPA Method 8015D Mod: Gasoline Range						
Client ID: PBS	Batch ID: R25941			RunNo: 25941						
Prep Date:	Analysis Date: 5/4/2015			SeqNo: 770909		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	470		500.0		93.3	67.4	150			

Sample ID 2.5ug gro lcs	SampType: LCS			TestCode: EPA Method 8015D Mod: Gasoline Range						
Client ID: LCSS	Batch ID: R25941			RunNo: 25941						
Prep Date:	Analysis Date: 5/4/2015			SeqNo: 770910		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.6	79.9	135			
Surr: BFB	470		500.0		93.3	67.4	150			

Sample ID 1505003-001B MS	SampType: MS			TestCode: EPA Method 8015D Mod: Gasoline Range						
Client ID: SWMU 10-5 (0-2')	Batch ID: R25941			RunNo: 25941						
Prep Date:	Analysis Date: 5/5/2015			SeqNo: 770912		Units: mg/Kg-dry				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	3.1	15.53	2.485	108	65.2	156			
Surr: BFB	340		310.7		109	67.4	150			

Sample ID 1505003-001B MSD	SampType: MSD			TestCode: EPA Method 8015D Mod: Gasoline Range						
Client ID: SWMU 10-5 (0-2')	Batch ID: R25941			RunNo: 25941						
Prep Date:	Analysis Date: 5/5/2015			SeqNo: 770913		Units: mg/Kg-dry				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	18	3.1	15.53	2.485	103	65.2	156	4.31	20	
Surr: BFB	340		310.7		110	67.4	150	0	0	

Sample ID 5mL rb	SampType: MBLK			TestCode: EPA Method 8015D Mod: Gasoline Range						
Client ID: PBS	Batch ID: R25982			RunNo: 25982						
Prep Date:	Analysis Date: 5/5/2015			SeqNo: 771006		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	470		500.0		94.7	67.4	150			

Sample ID 2.5ug gro lcs	SampType: LCS			TestCode: EPA Method 8015D Mod: Gasoline Range						
Client ID: LCSS	Batch ID: R25982			RunNo: 25982						
Prep Date:	Analysis Date: 5/5/2015			SeqNo: 771007		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505003

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	LCSS	Batch ID:	R25982	RunNo:	25982					
Prep Date:		Analysis Date:	5/5/2015	SeqNo:	771007	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.5	79.9	135			
Surr: BFB	460		500.0		92.6	67.4	150			

Sample ID	1505003-005B MS	SampType:	MS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	SWMU 10-5 (22-24')	Batch ID:	R25982	RunNo:	25982					
Prep Date:		Analysis Date:	5/5/2015	SeqNo:	771030	Units:	mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	15	3.5	17.27	0	88.7	65.2	156			
Surr: BFB	380		345.4		111	67.4	150			

Sample ID	1505003-005B MSD	SampType:	MSD	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	SWMU 10-5 (22-24')	Batch ID:	R25982	RunNo:	25982					
Prep Date:		Analysis Date:	5/5/2015	SeqNo:	771031	Units:	mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	14	3.5	17.27	0	83.7	65.2	156	5.75	20	
Surr: BFB	380		345.4		109	67.4	150	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit



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

Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1505003

RcptNo: 1

Received by/date:

Logged By: Lindsay Mangin

4/30/2015 3:50:00 PM

Completed By: Lindsay Mangin

5/1/2015 6:34:19 AM

Reviewed By:

Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☒

No ☐

Not Present ☐

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Client

Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

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

Yes ☒

No ☐

NA ☐

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

Yes ☒

No ☐

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

Yes ☒

No ☐

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

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☐

No ☐

No VOA Vials ☒

11. Were any sample containers received broken?

Yes ☐

No ☒

12. Does paperwork match bottle labels?

Yes ☒

No ☐

(Note discrepancies on chain of custody)

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

Yes ☒

No ☐

(If no, notify customer for authorization.)

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

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

Yes ☐

No ☐

NA ☒

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

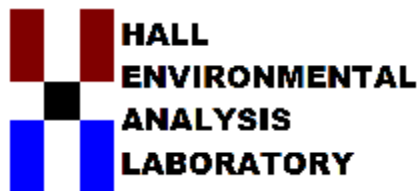
17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			

WESTERN REFINING SOUTHWEST, INC.
GALLUP REFINERY - SWMU 10
METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020



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

October 08, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10

OrderNo.: 1505004

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 4/30/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 11, 2015.

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#: 1505004
Date: 10/8/2015

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding Surrogate "S" Flags:

The surrogates were not recoverable in the following samples due to sample dilution and/or matrix interferences:

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505004

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-4 (0-2')

Project: SWMU 10

Collection Date: 4/29/2015 3:30:00 PM

Lab ID: 1505004-001

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	160	26	47		mg/Kg-dr	5	5/7/2015 7:22:44 PM	19040
Motor Oil Range Organics (MRO)	330	240	240		mg/Kg-dr	5	5/7/2015 7:22:44 PM	19040
Surr: DNOP	114	0	57.9-140		%REC	5	5/7/2015 7:22:44 PM	19040
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	11	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.034	0.0031	0.035	J	mg/Kg-dr	1	5/6/2015 3:40:56 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Arsenic	1.4	0.68	5.7	J	mg/Kg-dr	2	5/7/2015 1:41:14 PM	19081
Barium	460	0.068	0.23		mg/Kg-dr	2	5/7/2015 1:41:14 PM	19081
Beryllium	0.71	0.0085	0.17		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Cadmium	ND	0.032	0.11		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Chromium	14	0.069	0.34		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Cobalt	3.8	0.043	0.34		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Iron	10000	69	290		mg/Kg-dr	100	5/7/2015 11:10:57 AM	19081
Lead	3.8	0.13	0.29		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Manganese	440	0.13	0.23		mg/Kg-dr	2	5/7/2015 1:41:14 PM	19081
Nickel	6.5	0.15	0.57		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Silver	ND	0.034	0.29		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Vanadium	17	0.038	2.9		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
Zinc	29	0.74	2.9		mg/Kg-dr	1	5/7/2015 1:39:46 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.14	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Aniline	ND	0.097	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Anthracene	ND	0.095	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Azobenzene	ND	0.13	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Benz(a)anthracene	ND	0.088	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Benzo(a)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Benzo(b)fluoranthene	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Benzo(g,h,i)perylene	ND	0.13	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Benzo(k)fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Benzoic acid	ND	0.064	0.56		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Benzyl alcohol	ND	0.099	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Bis(2-chloroethoxy)methane	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-4 (0-2')

Project: SWMU 10

Collection Date: 4/29/2015 3:30:00 PM

Lab ID: 1505004-001

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Bis(2-chloroethyl)ether	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.086	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.13	0.56		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Butyl benzyl phthalate	ND	0.14	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
4-Chloro-3-methylphenol	ND	0.11	0.56		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
4-Chloroaniline	ND	0.10	0.56		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
4-Chlorophenyl phenyl ether	ND	0.17	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Di-n-butyl phthalate	ND	0.13	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Di-n-octyl phthalate	ND	0.12	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
1,2-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
1,3-Dichlorobenzene	ND	0.099	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
1,4-Dichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
3,3'-Dichlorobenzidine	ND	0.086	0.28		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Diethyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2,4-Dichlorophenol	ND	0.11	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2,4-Dimethylphenol	ND	0.088	0.34		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.061	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2,4-Dinitrophenol	ND	0.047	0.56		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2,4-Dinitrotoluene	ND	0.10	0.56		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2,6-Dinitrotoluene	ND	0.12	0.56		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Fluoranthene	ND	0.14	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Hexachlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Hexachlorocyclopentadiene	ND	0.078	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Hexachloroethane	ND	0.10	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Isophorone	ND	0.12	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2-Methylphenol	ND	0.11	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505004

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-4 (0-2')

Project: SWMU 10

Collection Date: 4/29/2015 3:30:00 PM

Lab ID: 1505004-001

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	ND	0.12	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
N-Nitrosodi-n-propylamine	ND	0.12	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
N-Nitrosodiphenylamine	ND	0.10	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Naphthalene	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2-Nitroaniline	ND	0.13	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
4-Nitroaniline	ND	0.10	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Nitrobenzene	ND	0.12	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2-Nitrophenol	ND	0.10	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
4-Nitrophenol	ND	0.096	0.28		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Pentachlorophenol	ND	0.070	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Phenanthrene	ND	0.12	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Phenol	ND	0.10	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Pyridine	ND	0.094	0.45		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
2,4,6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/8/2015 7:50:14 PM	19026
Surr: 2-Fluorophenol	61.2		26.4-129		%REC	1	5/8/2015 7:50:14 PM	19026
Surr: Phenol-d5	64.4		34.8-118		%REC	1	5/8/2015 7:50:14 PM	19026
Surr: 2,4,6-Tribromophenol	66.9		26.8-128		%REC	1	5/8/2015 7:50:14 PM	19026
Surr: Nitrobenzene-d5	61.0		35.8-124		%REC	1	5/8/2015 7:50:14 PM	19026
Surr: 2-Fluorobiphenyl	66.9		24.5-139		%REC	1	5/8/2015 7:50:14 PM	19026
Surr: 4-Terphenyl-d14	72.6		29.4-129		%REC	1	5/8/2015 7:50:14 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.00118	0.000434	0.00193	J	mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Toluene	0.00263	0.000200	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Ethylbenzene	0.000703	0.000324	0.00193	J	mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Xylenes, Total	0.00182	0.00115	0.00193	J	mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000807	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,2,4-Trimethylbenzene	0.000770	0.000503	0.00193	J	mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,3,5-Trimethylbenzene	0.000347	0.000338	0.00193	J	mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000516	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000230	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Naphthalene	ND	0.000629	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1-Methylnaphthalene	ND	0.000756	0.00385		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
2-Methylnaphthalene	ND	0.000752	0.00385		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Acetone	0.0237	0.00120	0.00963		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Bromobenzene	ND	0.000536	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505004

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-4 (0-2')

Project: SWMU 10

Collection Date: 4/29/2015 3:30:00 PM

Lab ID: 1505004-001

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Bromodichloromethane	ND	0.000260	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Bromoform	ND	0.000499	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Bromomethane	ND	0.00114	0.00289		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
2-Butanone	0.00407	0.000616	0.00963	J	mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Carbon tetrachloride	ND	0.000348	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Chlorobenzene	ND	0.000195	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Chloroethane	ND	0.00193	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Chloroform	ND	0.000397	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Chloromethane	ND	0.000227	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
2-Chlorotoluene	ND	0.000376	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Carbon disulfide	ND	0.000871	0.00963		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
4-Chlorotoluene	ND	0.000371	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
cis-1,2-DCE	ND	0.000509	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
cis-1,3-Dichloropropene	ND	0.00193	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000566	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Dibromochloromethane	ND	0.000216	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Dibromomethane	ND	0.00109	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,2-Dichlorobenzene	ND	0.000427	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,3-Dichlorobenzene	ND	0.000326	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,4-Dichlorobenzene	ND	0.000302	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Dichlorodifluoromethane	ND	0.000786	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,1-Dichloroethane	ND	0.000450	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,1-Dichloroethene	ND	0.000321	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,2-Dichloropropane	ND	0.000411	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,3-Dichloropropane	ND	0.000300	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
2,2-Dichloropropane	ND	0.000334	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,1-Dichloropropene	ND	0.000353	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Hexachlorobutadiene	ND	0.000388	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Isopropylbenzene	ND	0.000447	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
4-Isopropyltoluene	ND	0.000747	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Methylene chloride	0.000606	0.000476	0.00193	J	mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
n-Butylbenzene	ND	0.000790	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
2-Hexanone	0.000886	0.000400	0.00963	J	mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
n-Propylbenzene	ND	0.000360	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
sec-Butylbenzene	0.000645	0.000486	0.00193	J	mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Styrene	ND	0.000319	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
4-Methyl-2-pentanone	ND	0.000813	0.00963		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
tert-Butylbenzene	ND	0.000295	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000313	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505004

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-4 (0-2')

Project: SWMU 10

Collection Date: 4/29/2015 3:30:00 PM

Lab ID: 1505004-001

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
1,1,2,2-Tetrachloroethane	ND	0.000423	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Tetrachloroethene (PCE)	ND	0.000382	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
trans-1,2-DCE	ND	0.000311	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
trans-1,3-Dichloropropene	ND	0.000252	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,2,3-Trichlorobenzene	ND	0.000704	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,2,4-Trichlorobenzene	ND	0.000721	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,1,1-Trichloroethane	ND	0.000274	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,1,2-Trichloroethane	ND	0.00193	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Trichloroethene (TCE)	ND	0.000383	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Trichlorofluoromethane	ND	0.000389	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
1,2,3-Trichloropropane	ND	0.000676	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Vinyl chloride	ND	0.000220	0.00193		mg/Kg-dr	1	5/6/2015 7:20:30 PM	19032
Surr: 1,2-Dichloroethane-d4	96.7	0	70-130		%REC	1	5/6/2015 7:20:30 PM	19032
Surr: 4-Bromofluorobenzene	95.2	0	70-130		%REC	1	5/6/2015 7:20:30 PM	19032
Surr: Dibromofluoromethane	102	0	70-130		%REC	1	5/6/2015 7:20:30 PM	19032
Surr: Toluene-d8	95.0	0	70-130		%REC	1	5/6/2015 7:20:30 PM	19032
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.85	3.4		mg/Kg-dr	1	5/6/2015 12:29:48 AM	R25982
Surr: BFB	111	0	67.4-150		%REC	1	5/6/2015 12:29:48 AM	R25982

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
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	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505004

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-4 (2-4')

Project: SWMU 10

Collection Date: 4/29/2015 3:40:00 PM

Lab ID: 1505004-002

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	4100	54	98		mg/Kg-dr	10	5/7/2015 4:40:23 PM	19040
Motor Oil Range Organics (MRO)	690	490	490		mg/Kg-dr	10	5/7/2015 4:40:23 PM	19040
Surr: DNOP	0	0	57.9-140	S	%REC	10	5/7/2015 4:40:23 PM	19040
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	21	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.0082	0.0037	0.042	J	mg/Kg-dr	1	5/6/2015 3:42:49 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.7	3.2		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Arsenic	1.9	0.37	3.2	J	mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Barium	390	0.076	0.26		mg/Kg-dr	2	5/7/2015 1:44:10 PM	19081
Beryllium	0.98	0.0094	0.19		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Cadmium	ND	0.035	0.13		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Chromium	9.9	0.077	0.38		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Cobalt	4.8	0.048	0.38		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Iron	14000	77	320		mg/Kg-dr	100	5/7/2015 11:12:19 AM	19081
Lead	3.5	0.14	0.32		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Manganese	310	0.075	0.13		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Nickel	8.3	0.16	0.64		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Selenium	ND	2.0	3.2		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Silver	ND	0.038	0.32		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Vanadium	20	0.043	3.2		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
Zinc	16	0.82	3.2		mg/Kg-dr	1	5/7/2015 1:42:38 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.14	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Acenaphthylene	ND	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Aniline	ND	0.10	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Azobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Benz(a)anthracene	ND	0.092	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Benzo(a)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Benzo(g,h,i)perylene	ND	0.13	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Benzo(k)fluoranthene	ND	0.13	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Benzoic acid	ND	0.067	0.59		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Benzyl alcohol	ND	0.10	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Bis(2-chloroethoxy)methane	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-4 (2-4')

Project: SWMU 10

Collection Date: 4/29/2015 3:40:00 PM

Lab ID: 1505004-002

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Bis(2-chloroethyl)ether	ND	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.090	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
4-Bromophenyl phenyl ether	ND	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Butyl benzyl phthalate	ND	0.14	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Carbazole	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2-Chloronaphthalene	ND	0.13	0.29		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2-Chlorophenol	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
4-Chlorophenyl phenyl ether	ND	0.17	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Chrysene	ND	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Di-n-butyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Di-n-octyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Dibenz(a,h)anthracene	ND	0.13	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Dibenzofuran	ND	0.13	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
1,2-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
1,3-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
1,4-Dichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
3,3'-Dichlorobenzidine	ND	0.090	0.29		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Diethyl phthalate	ND	0.13	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Dimethyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2,4-Dichlorophenol	ND	0.12	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2,4-Dimethylphenol	ND	0.092	0.35		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.064	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2,4-Dinitrotoluene	ND	0.10	0.59		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Fluoranthene	ND	0.14	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Fluorene	0.22	0.16	0.24	J	mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Hexachlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Hexachlorobutadiene	ND	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Hexachlorocyclopentadiene	ND	0.081	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Hexachloroethane	ND	0.10	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Isophorone	ND	0.13	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
1-Methylnaphthalene	3.6	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2-Methylnaphthalene	0.42	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2-Methylphenol	ND	0.12	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505004

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-4 (2-4')

Project: SWMU 10

Collection Date: 4/29/2015 3:40:00 PM

Lab ID: 1505004-002

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	ND	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
N-Nitrosodiphenylamine	ND	0.10	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Naphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
4-Nitroaniline	ND	0.11	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2-Nitrophenol	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
4-Nitrophenol	ND	0.10	0.29		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Pentachlorophenol	ND	0.073	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Phenanthrene	0.80	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Phenol	ND	0.11	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Pyrene	ND	0.15	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Pyridine	ND	0.099	0.47		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
1,2,4-Trichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2,4,5-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
2,4,6-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/8/2015 8:18:21 PM	19026
Surr: 2-Fluorophenol	72.0		26.4-129		%REC	1	5/8/2015 8:18:21 PM	19026
Surr: Phenol-d5	71.2		34.8-118		%REC	1	5/8/2015 8:18:21 PM	19026
Surr: 2,4,6-Tribromophenol	40.6		26.8-128		%REC	1	5/8/2015 8:18:21 PM	19026
Surr: Nitrobenzene-d5	73.1		35.8-124		%REC	1	5/8/2015 8:18:21 PM	19026
Surr: 2-Fluorobiphenyl	67.6		24.5-139		%REC	1	5/8/2015 8:18:21 PM	19026
Surr: 4-Terphenyl-d14	80.2		29.4-129		%REC	1	5/8/2015 8:18:21 PM	19026
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	ND	0.0049	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Toluene	ND	0.0039	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Ethylbenzene	0.0041	0.0030	0.033	J	mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Methyl tert-butyl ether (MTBE)	ND	0.0046	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,2,4-Trimethylbenzene	ND	0.0016	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,3,5-Trimethylbenzene	0.11	0.0022	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,2-Dichloroethane (EDC)	ND	0.013	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,2-Dibromoethane (EDB)	ND	0.0026	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Naphthalene	ND	0.0078	0.065		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1-Methylnaphthalene	2.9	0.020	0.13		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
2-Methylnaphthalene	0.69	0.022	0.13		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Acetone	ND	0.024	0.49		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Bromobenzene	ND	0.0024	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Bromodichloromethane	ND	0.0027	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505004

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-4 (2-4')

Project: SWMU 10

Collection Date: 4/29/2015 3:40:00 PM

Lab ID: 1505004-002

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Bromoform	ND	0.0026	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Bromomethane	ND	0.0063	0.098		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
2-Butanone	ND	0.021	0.33		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Carbon disulfide	ND	0.024	0.33		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Carbon tetrachloride	ND	0.0032	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Chlorobenzene	ND	0.0025	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Chloroethane	ND	0.025	0.065		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Chloroform	ND	0.0034	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Chloromethane	ND	0.0038	0.098		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
2-Chlorotoluene	ND	0.0037	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
4-Chlorotoluene	ND	0.0025	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
cis-1,2-DCE	ND	0.0041	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
cis-1,3-Dichloropropene	ND	0.0023	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,2-Dibromo-3-chloropropane	ND	0.0056	0.065		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Dibromochloromethane	ND	0.0025	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Dibromomethane	ND	0.0034	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,2-Dichlorobenzene	ND	0.0020	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,3-Dichlorobenzene	ND	0.0039	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,4-Dichlorobenzene	ND	0.0041	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Dichlorodifluoromethane	ND	0.0082	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,1-Dichloroethane	ND	0.013	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,1-Dichloroethene	ND	0.0023	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,2-Dichloropropane	ND	0.0018	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,3-Dichloropropane	ND	0.0045	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
2,2-Dichloropropane	ND	0.0048	0.065		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,1-Dichloropropene	ND	0.0049	0.065		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Hexachlorobutadiene	ND	0.0045	0.065		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
2-Hexanone	ND	0.0080	0.33		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Isopropylbenzene	ND	0.0028	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
4-Isopropyltoluene	ND	0.0023	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
4-Methyl-2-pentanone	ND	0.0057	0.33		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Methylene chloride	ND	0.013	0.098		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
n-Butylbenzene	ND	0.0028	0.098		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
n-Propylbenzene	ND	0.0024	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
sec-Butylbenzene	ND	0.0047	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Styrene	ND	0.0060	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
tert-Butylbenzene	ND	0.0037	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,1,1,2-Tetrachloroethane	ND	0.0027	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,1,2,2-Tetrachloroethane	ND	0.0040	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505004

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-4 (2-4')

Project: SWMU 10

Collection Date: 4/29/2015 3:40:00 PM

Lab ID: 1505004-002

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Tetrachloroethene (PCE)	ND	0.0028	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
trans-1,2-DCE	ND	0.0021	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
trans-1,3-Dichloropropene	ND	0.0059	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,2,3-Trichlorobenzene	ND	0.0070	0.065		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,2,4-Trichlorobenzene	ND	0.0060	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,1,1-Trichloroethane	ND	0.0050	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,1,2-Trichloroethane	ND	0.0039	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Trichloroethene (TCE)	ND	0.0032	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Trichlorofluoromethane	ND	0.0099	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
1,2,3-Trichloropropane	ND	0.0055	0.065		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Vinyl chloride	ND	0.013	0.033		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Xylenes, Total	ND	0.0091	0.065		mg/Kg-dr	1	5/5/2015 3:52:38 AM	19008
Surr: Dibromofluoromethane	96.7		70-130		%REC	1	5/5/2015 3:52:38 AM	19008
Surr: 1,2-Dichloroethane-d4	93.4		70-130		%REC	1	5/5/2015 3:52:38 AM	19008
Surr: Toluene-d8	93.2		70-130		%REC	1	5/5/2015 3:52:38 AM	19008
Surr: 4-Bromofluorobenzene	91.5		70-130		%REC	1	5/5/2015 3:52:38 AM	19008
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	25	0.82	3.3		mg/Kg-dr	1	5/5/2015 3:52:38 AM	R25941
Surr: BFB	113	0	67.4-150		%REC	1	5/5/2015 3:52:38 AM	R25941

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505004

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-4 (6-8")

Project: SWMU 10

Collection Date: 4/29/2015 3:50:00 PM

Lab ID: 1505004-003

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	ND	5.5	9.9		mg/Kg-dr	1	5/5/2015 6:50:28 PM	19040
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg-dr	1	5/5/2015 6:50:28 PM	19040
Surr: DNOP	101	0	57.9-140		%REC	1	5/5/2015 6:50:28 PM	19040
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	16	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.017	0.0033	0.038	J	mg/Kg-dr	1	5/6/2015 3:44:32 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.6	2.9		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Arsenic	1.2	0.35	2.9	J	mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Barium	140	0.035	0.12		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Beryllium	0.84	0.0087	0.18		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Chromium	7.2	0.071	0.35		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Cobalt	4.0	0.045	0.35		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Iron	12000	71	290		mg/Kg-dr	100	5/7/2015 11:13:42 AM	19081
Lead	2.2	0.13	0.29		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Manganese	270	0.069	0.12		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Nickel	6.8	0.15	0.59		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Vanadium	15	0.039	2.9		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
Zinc	13	0.76	2.9		mg/Kg-dr	1	5/7/2015 1:45:34 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Aniline	ND	0.10	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Anthracene	ND	0.098	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Benz(a)anthracene	ND	0.090	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Benzoic acid	ND	0.066	0.58		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-4 (6-8")

Project: SWMU 10

Collection Date: 4/29/2015 3:50:00 PM

Lab ID: 1505004-003

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Bis(2-chloroethyl)ether	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.088	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.13	0.58		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
4-Chloro-3-methylphenol	ND	0.11	0.58		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
4-Chloroaniline	ND	0.11	0.58		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2-Chloronaphthalene	ND	0.12	0.29		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Chrysene	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Di-n-butyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Di-n-octyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Dibenz(a,h)anthracene	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
3,3'-Dichlorobenzidine	ND	0.089	0.29		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2,4-Dichlorophenol	ND	0.11	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2,4-Dimethylphenol	ND	0.090	0.35		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.063	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2,4-Dinitrophenol	ND	0.048	0.58		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2,4-Dinitrotoluene	ND	0.10	0.58		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2,6-Dinitrotoluene	ND	0.13	0.58		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Fluorene	ND	0.16	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Hexachlorobutadiene	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Hexachlorocyclopentadiene	ND	0.080	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Isophorone	ND	0.12	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2-Methylphenol	ND	0.12	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505004

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-4 (6-8")

Project: SWMU 10

Collection Date: 4/29/2015 3:50:00 PM

Lab ID: 1505004-003

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
4-Nitroaniline	ND	0.10	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2-Nitrophenol	ND	0.10	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
4-Nitrophenol	ND	0.099	0.29		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Pentachlorophenol	ND	0.072	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Pyridine	ND	0.097	0.46		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2,4,5-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
2,4,6-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/8/2015 5:58:11 PM	19026
Surr: 2-Fluorophenol	45.2		26.4-129		%REC	1	5/8/2015 5:58:11 PM	19026
Surr: Phenol-d5	46.5		34.8-118		%REC	1	5/8/2015 5:58:11 PM	19026
Surr: 2,4,6-Tribromophenol	41.3		26.8-128		%REC	1	5/8/2015 5:58:11 PM	19026
Surr: Nitrobenzene-d5	43.7		35.8-124		%REC	1	5/8/2015 5:58:11 PM	19026
Surr: 2-Fluorobiphenyl	42.4		24.5-139		%REC	1	5/8/2015 5:58:11 PM	19026
Surr: 4-Terphenyl-d14	55.3		29.4-129		%REC	1	5/8/2015 5:58:11 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.00190	0.000345	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Toluene	0.00162	0.000159	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Ethylbenzene	0.000421	0.000258	0.00153	J	mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Xylenes, Total	0.00118	0.000914	0.00153	J	mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Methyl tert-butyl ether (MTBE)	0.00139	0.000643	0.00153	J	mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,2,4-Trimethylbenzene	0.000406	0.000401	0.00153	J	mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,3,5-Trimethylbenzene	ND	0.000269	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,2-Dichloroethane (EDC)	ND	0.000411	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,2-Dibromoethane (EDB)	ND	0.000183	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Naphthalene	ND	0.000501	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1-Methylnaphthalene	ND	0.000602	0.00307		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
2-Methylnaphthalene	ND	0.000599	0.00307		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Acetone	0.00619	0.000957	0.00766	J	mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Bromobenzene	ND	0.000426	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-4 (6-8")

Project: SWMU 10

Collection Date: 4/29/2015 3:50:00 PM

Lab ID: 1505004-003

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Bromodichloromethane	ND	0.000207	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Bromoform	ND	0.000397	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Bromomethane	ND	0.000906	0.00230		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
2-Butanone	0.00153	0.000491	0.00766	J	mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Carbon tetrachloride	ND	0.000277	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Chlorobenzene	ND	0.000155	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Chloroethane	ND	0.00153	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Chloroform	ND	0.000316	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Chloromethane	ND	0.000181	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
2-Chlorotoluene	ND	0.000299	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Carbon disulfide	ND	0.000694	0.00766		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
4-Chlorotoluene	ND	0.000295	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
cis-1,2-DCE	ND	0.000405	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
cis-1,3-Dichloropropene	ND	0.00153	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,2-Dibromo-3-chloropropane	ND	0.000450	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Dibromochloromethane	ND	0.000172	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Dibromomethane	ND	0.000870	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,2-Dichlorobenzene	ND	0.000340	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,3-Dichlorobenzene	ND	0.000260	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,4-Dichlorobenzene	ND	0.000241	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Dichlorodifluoromethane	ND	0.000626	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,1-Dichloroethane	ND	0.000358	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,1-Dichloroethene	ND	0.000256	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,2-Dichloropropane	ND	0.000327	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,3-Dichloropropane	ND	0.000239	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
2,2-Dichloropropane	ND	0.000266	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,1-Dichloropropene	ND	0.000281	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Hexachlorobutadiene	ND	0.000309	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Isopropylbenzene	ND	0.000356	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
4-Isopropyltoluene	ND	0.000595	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Methylene chloride	0.000529	0.000379	0.00153	J	mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
n-Butylbenzene	ND	0.000629	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
2-Hexanone	0.000559	0.000319	0.00766	J	mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
n-Propylbenzene	ND	0.000287	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
sec-Butylbenzene	0.000667	0.000387	0.00153	J	mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Styrene	ND	0.000254	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
4-Methyl-2-pentanone	ND	0.000647	0.00766		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
tert-Butylbenzene	ND	0.000235	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,1,1,2-Tetrachloroethane	ND	0.000249	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505004

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-4 (6-8')

Project: SWMU 10

Collection Date: 4/29/2015 3:50:00 PM

Lab ID: 1505004-003

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
1,1,2,2-Tetrachloroethane	ND	0.000337	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Tetrachloroethene (PCE)	ND	0.000304	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
trans-1,2-DCE	ND	0.000248	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
trans-1,3-Dichloropropene	ND	0.000200	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,2,3-Trichlorobenzene	ND	0.000561	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,2,4-Trichlorobenzene	ND	0.000574	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,1,1-Trichloroethane	ND	0.000218	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,1,2-Trichloroethane	ND	0.00153	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Trichloroethene (TCE)	ND	0.000305	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Trichlorofluoromethane	ND	0.000310	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
1,2,3-Trichloropropane	ND	0.000538	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Vinyl chloride	ND	0.000175	0.00153		mg/Kg-dr	1	5/7/2015 10:11:12 AM	19107
Surr: 1,2-Dichloroethane-d4	98.7	0	70-130		%REC	1	5/7/2015 10:11:12 AM	19107
Surr: 4-Bromofluorobenzene	110	0	70-130		%REC	1	5/7/2015 10:11:12 AM	19107
Surr: Dibromofluoromethane	99.5	0	70-130		%REC	1	5/7/2015 10:11:12 AM	19107
Surr: Toluene-d8	93.0	0	70-130		%REC	1	5/7/2015 10:11:12 AM	19107
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.82	3.2		mg/Kg-dr	1	5/5/2015 1:26:29 PM	R25982
Surr: BFB	106	0	67.4-150		%REC	1	5/5/2015 1:26:29 PM	R25982

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505004

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-4 (18-20')

Project: SWMU 10

Collection Date: 4/29/2015 4:00:00 PM

Lab ID: 1505004-004

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	ND	5.4	9.7		mg/Kg-dr	1	5/5/2015 7:17:27 PM	19040
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg-dr	1	5/5/2015 7:17:27 PM	19040
Surr: DNOP	105	0	57.9-140		%REC	1	5/5/2015 7:17:27 PM	19040
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	13	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.0040	0.0035	0.040	J	mg/Kg-dr	1	5/6/2015 3:46:17 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Arsenic	1.9	0.34	2.9	J	mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Barium	230	0.034	0.11		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Beryllium	1.0	0.0085	0.17		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Cadmium	ND	0.032	0.11		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Chromium	15	0.069	0.34		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Cobalt	7.4	0.043	0.34		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Iron	21000	69	290		mg/Kg-dr	100	5/7/2015 11:15:06 AM	19081
Lead	1.7	0.12	0.29		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Manganese	770	0.34	0.57		mg/Kg-dr	5	5/8/2015 2:33:57 PM	19081
Nickel	16	0.15	0.57		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Silver	ND	0.034	0.29		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Vanadium	22	0.038	2.9		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
Zinc	22	0.74	2.9		mg/Kg-dr	1	5/7/2015 1:48:21 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Aniline	ND	0.099	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Anthracene	ND	0.097	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Benz(a)anthracene	ND	0.089	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Benzoic acid	ND	0.065	0.57		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505004

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-4 (18-20')

Project: SWMU 10

Collection Date: 4/29/2015 4:00:00 PM

Lab ID: 1505004-004

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Bis(2-chloroethyl)ether	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Bis(2-chloroisopropyl)ether	ND	0.087	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Bis(2-ethylhexyl)phthalate	ND	0.13	0.57		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
4-Chloro-3-methylphenol	ND	0.11	0.57		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
4-Chloroaniline	ND	0.11	0.57		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Chrysene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Di-n-butyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Di-n-octyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Dibenz(a,h)anthracene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
3,3'-Dichlorobenzidine	ND	0.088	0.28		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Dimethyl phthalate	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2,4-Dichlorophenol	ND	0.11	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2,4-Dimethylphenol	ND	0.089	0.34		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
4,6-Dinitro-2-methylphenol	ND	0.062	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2,4-Dinitrophenol	ND	0.047	0.57		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2,4-Dinitrotoluene	ND	0.10	0.57		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2,6-Dinitrotoluene	ND	0.13	0.57		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Fluorene	ND	0.15	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Hexachlorobutadiene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Hexachlorocyclopentadiene	ND	0.079	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Isophorone	ND	0.12	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2-Methylnaphthalene	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2-Methylphenol	ND	0.11	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505004

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-4 (18-20')

Project: SWMU 10

Collection Date: 4/29/2015 4:00:00 PM

Lab ID: 1505004-004

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
4-Nitroaniline	ND	0.10	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2-Nitrophenol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
4-Nitrophenol	ND	0.098	0.28		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Pentachlorophenol	ND	0.071	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Pyridine	ND	0.096	0.46		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2,4,5-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
2,4,6-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 8:41:44 PM	19026
Surr: 2-Fluorophenol	73.9		26.4-129		%REC	1	5/7/2015 8:41:44 PM	19026
Surr: Phenol-d5	73.0		34.8-118		%REC	1	5/7/2015 8:41:44 PM	19026
Surr: 2,4,6-Tribromophenol	68.8		26.8-128		%REC	1	5/7/2015 8:41:44 PM	19026
Surr: Nitrobenzene-d5	70.5		35.8-124		%REC	1	5/7/2015 8:41:44 PM	19026
Surr: 2-Fluorobiphenyl	74.9		24.5-139		%REC	1	5/7/2015 8:41:44 PM	19026
Surr: 4-Terphenyl-d14	83.9		29.4-129		%REC	1	5/7/2015 8:41:44 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.0204	0.000418	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Toluene	0.0127	0.000193	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Ethylbenzene	0.00291	0.000312	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Xylenes, Total	0.00975	0.00111	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000777	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,2,4-Trimethylbenzene	0.00277	0.000484	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,3,5-Trimethylbenzene	0.00184	0.000325	0.00185	J	mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000497	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000222	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Naphthalene	0.000742	0.000606	0.00185	J	mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1-Methylnaphthalene	ND	0.000728	0.00371		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
2-Methylnaphthalene	ND	0.000724	0.00371		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Acetone	0.00180	0.00116	0.00927	J	mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Bromobenzene	ND	0.000516	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-4 (18-20')

Project: SWMU 10

Collection Date: 4/29/2015 4:00:00 PM

Lab ID: 1505004-004

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Bromodichloromethane	ND	0.000250	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Bromoform	ND	0.000480	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Bromomethane	ND	0.00110	0.00278		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
2-Butanone	ND	0.000594	0.00927		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Carbon tetrachloride	ND	0.000336	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Chlorobenzene	ND	0.000188	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Chloroethane	ND	0.00185	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Chloroform	ND	0.000382	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Chloromethane	ND	0.000219	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
2-Chlorotoluene	ND	0.000362	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Carbon disulfide	ND	0.000839	0.00927		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
4-Chlorotoluene	ND	0.000357	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
cis-1,2-DCE	ND	0.000490	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
cis-1,3-Dichloropropene	ND	0.00185	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000545	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Dibromochloromethane	ND	0.000208	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Dibromomethane	ND	0.00105	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,2-Dichlorobenzene	ND	0.000411	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,3-Dichlorobenzene	ND	0.000314	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,4-Dichlorobenzene	ND	0.000291	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Dichlorodifluoromethane	ND	0.000757	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,1-Dichloroethane	ND	0.000433	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,1-Dichloroethene	ND	0.000309	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,2-Dichloropropane	ND	0.000396	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,3-Dichloropropane	ND	0.000289	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
2,2-Dichloropropane	ND	0.000322	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,1-Dichloropropene	ND	0.000339	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Hexachlorobutadiene	ND	0.000374	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Isopropylbenzene	0.000482	0.000430	0.00185	J	mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
4-Isopropyltoluene	ND	0.000719	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Methylene chloride	0.000612	0.000458	0.00185	J	mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
n-Butylbenzene	ND	0.000761	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
2-Hexanone	ND	0.000386	0.00927		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
n-Propylbenzene	0.000510	0.000347	0.00185	J	mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
sec-Butylbenzene	0.000714	0.000468	0.00185	J	mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Styrene	ND	0.000307	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
4-Methyl-2-pentanone	ND	0.000783	0.00927		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
tert-Butylbenzene	ND	0.000284	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000302	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505004

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-4 (18-20')

Project: SWMU 10

Collection Date: 4/29/2015 4:00:00 PM

Lab ID: 1505004-004

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
1,1,2,2-Tetrachloroethane	ND	0.000408	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Tetrachloroethene (PCE)	ND	0.000367	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
trans-1,2-DCE	ND	0.000300	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
trans-1,3-Dichloropropene	ND	0.000242	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,2,3-Trichlorobenzene	ND	0.000678	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,2,4-Trichlorobenzene	ND	0.000695	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,1,1-Trichloroethane	ND	0.000264	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,1,2-Trichloroethane	ND	0.00185	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Trichloroethene (TCE)	ND	0.000368	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Trichlorofluoromethane	ND	0.000375	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
1,2,3-Trichloropropane	ND	0.000651	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Vinyl chloride	ND	0.000212	0.00185		mg/Kg-dr	1	5/6/2015 7:49:48 PM	19032
Surr: 1,2-Dichloroethane-d4	98.0	0	70-130		%REC	1	5/6/2015 7:49:48 PM	19032
Surr: 4-Bromofluorobenzene	99.5	0	70-130		%REC	1	5/6/2015 7:49:48 PM	19032
Surr: Dibromofluoromethane	104	0	70-130		%REC	1	5/6/2015 7:49:48 PM	19032
Surr: Toluene-d8	88.5	0	70-130		%REC	1	5/6/2015 7:49:48 PM	19032
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.78	3.1		mg/Kg-dr	1	5/6/2015 12:58:35 AM	R25982
Surr: BFB	109	0	67.4-150		%REC	1	5/6/2015 12:58:35 AM	R25982

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505004

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 DUP01

Project: SWMU 10

Collection Date: 4/29/2015

Lab ID: 1505004-005

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	150	27	49		mg/Kg-dr	5	5/7/2015 9:10:40 PM	19040
Motor Oil Range Organics (MRO)	310	250	250		mg/Kg-dr	5	5/7/2015 9:10:40 PM	19040
Surr: DNOP	114	0	57.9-140		%REC	5	5/7/2015 9:10:40 PM	19040
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	12	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.035	0.0034	0.039	J	mg/Kg-dr	1	5/6/2015 3:55:17 PM	19078
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.5	2.8		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Arsenic	2.7	0.65	5.5	J	mg/Kg-dr	2	5/7/2015 1:57:09 PM	19081
Barium	380	0.066	0.22		mg/Kg-dr	2	5/7/2015 1:57:09 PM	19081
Beryllium	0.59	0.0082	0.17		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Chromium	16	0.066	0.33		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Cobalt	3.4	0.042	0.33		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Iron	9100	66	280		mg/Kg-dr	100	5/7/2015 11:24:22 AM	19081
Lead	3.6	0.12	0.28		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Manganese	490	0.13	0.22		mg/Kg-dr	2	5/7/2015 1:57:09 PM	19081
Nickel	5.6	0.14	0.55		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Silver	ND	0.033	0.28		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Vanadium	21	0.037	2.8		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
Zinc	24	0.71	2.8		mg/Kg-dr	1	5/7/2015 1:55:41 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	3.4	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Acenaphthylene	ND	2.8	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Aniline	ND	2.4	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Anthracene	ND	2.3	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Azobenzene	ND	3.1	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Benz(a)anthracene	ND	2.2	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Benzo(a)pyrene	ND	3.1	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Benzo(b)fluoranthene	ND	2.6	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Benzo(g,h,i)perylene	ND	3.1	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Benzo(k)fluoranthene	ND	3.1	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Benzoic acid	ND	1.6	14		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Benzyl alcohol	ND	2.4	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Bis(2-chloroethoxy)methane	ND	2.6	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
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	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 DUP01

Project: SWMU 10

Collection Date: 4/29/2015

Lab ID: 1505004-005

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Bis(2-chloroethyl)ether	ND	2.7	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Bis(2-chloroisopropyl)ether	ND	2.1	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Bis(2-ethylhexyl)phthalate	ND	3.1	14		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
4-Bromophenyl phenyl ether	ND	2.9	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Butyl benzyl phthalate	ND	3.4	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Carbazole	ND	2.6	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
4-Chloro-3-methylphenol	ND	2.7	14		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
4-Chloroaniline	ND	2.5	14		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2-Chloronaphthalene	ND	2.9	6.9		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2-Chlorophenol	ND	2.6	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
4-Chlorophenyl phenyl ether	ND	4.1	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Chrysene	ND	2.8	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Di-n-butyl phthalate	ND	3.1	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Di-n-octyl phthalate	ND	3.1	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Dibenz(a,h)anthracene	ND	3.0	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Dibenzofuran	ND	2.9	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
1,2-Dichlorobenzene	ND	2.6	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
1,3-Dichlorobenzene	ND	2.4	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
1,4-Dichlorobenzene	ND	2.9	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
3,3'-Dichlorobenzidine	ND	2.1	6.9		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Diethyl phthalate	ND	3.1	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Dimethyl phthalate	ND	2.5	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2,4-Dichlorophenol	ND	2.8	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2,4-Dimethylphenol	ND	2.2	8.3		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
4,6-Dinitro-2-methylphenol	ND	1.5	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2,4-Dinitrophenol	ND	1.1	14		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2,4-Dinitrotoluene	ND	2.5	14		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2,6-Dinitrotoluene	ND	3.1	14		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Fluoranthene	ND	3.3	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Fluorene	ND	3.7	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Hexachlorobenzene	ND	2.6	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Hexachlorobutadiene	ND	2.7	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Hexachlorocyclopentadiene	ND	1.9	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Hexachloroethane	ND	2.4	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Indeno(1,2,3-cd)pyrene	ND	3.1	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Isophorone	ND	2.9	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
1-Methylnaphthalene	ND	2.5	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2-Methylnaphthalene	ND	2.5	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2-Methylphenol	ND	2.8	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 DUP01

Project: SWMU 10

Collection Date: 4/29/2015

Lab ID: 1505004-005

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	ND	2.9	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
N-Nitrosodi-n-propylamine	ND	2.9	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
N-Nitrosodiphenylamine	ND	2.5	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Naphthalene	ND	2.6	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2-Nitroaniline	ND	3.1	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
3-Nitroaniline	ND	2.6	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
4-Nitroaniline	ND	2.5	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Nitrobenzene	ND	2.8	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2-Nitrophenol	ND	2.5	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
4-Nitrophenol	ND	2.4	6.9		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Pentachlorophenol	ND	1.7	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Phenanthrene	ND	2.9	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Phenol	ND	2.5	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Pyrene	ND	3.5	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Pyridine	ND	2.3	11		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
1,2,4-Trichlorobenzene	ND	2.8	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2,4,5-Trichlorophenol	ND	3.2	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
2,4,6-Trichlorophenol	ND	3.2	5.5		mg/Kg-dr	1	5/8/2015 8:46:25 PM	19026
Surr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/8/2015 8:46:25 PM	19026
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/8/2015 8:46:25 PM	19026
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/8/2015 8:46:25 PM	19026
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/8/2015 8:46:25 PM	19026
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/8/2015 8:46:25 PM	19026
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/8/2015 8:46:25 PM	19026
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.00104	0.000359	0.00159	J	mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Toluene	0.00232	0.000166	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Ethylbenzene	0.000638	0.000268	0.00159	J	mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Xylenes, Total	0.00171	0.000951	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000668	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,2,4-Trimethylbenzene	0.000972	0.000417	0.00159	J	mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,3,5-Trimethylbenzene	0.000422	0.000280	0.00159	J	mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000427	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000191	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Naphthalene	ND	0.000521	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1-Methylnaphthalene	ND	0.000626	0.00319		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
2-Methylnaphthalene	ND	0.000623	0.00319		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Acetone	0.0166	0.000995	0.00797		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Bromobenzene	ND	0.000443	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505004

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 DUP01

Project: SWMU 10

Collection Date: 4/29/2015

Lab ID: 1505004-005

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Bromodichloromethane	ND	0.000215	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Bromoform	ND	0.000413	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Bromomethane	ND	0.000942	0.00239		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
2-Butanone	0.00253	0.000510	0.00797	J	mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Carbon tetrachloride	ND	0.000288	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Chlorobenzene	ND	0.000162	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Chloroethane	ND	0.00159	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Chloroform	ND	0.000328	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Chloromethane	ND	0.000188	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
2-Chlorotoluene	ND	0.000311	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Carbon disulfide	ND	0.000721	0.00797		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
4-Chlorotoluene	ND	0.000307	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
cis-1,2-DCE	ND	0.000422	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
cis-1,3-Dichloropropene	ND	0.00159	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000468	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Dibromochloromethane	ND	0.000179	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Dibromomethane	ND	0.000905	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,2-Dichlorobenzene	ND	0.000354	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,3-Dichlorobenzene	ND	0.000270	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,4-Dichlorobenzene	ND	0.000250	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Dichlorodifluoromethane	ND	0.000651	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,1-Dichloroethane	ND	0.000372	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,1-Dichloroethene	ND	0.000266	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,2-Dichloropropane	ND	0.000341	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,3-Dichloropropane	ND	0.000248	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
2,2-Dichloropropane	ND	0.000277	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,1-Dichloropropene	ND	0.000292	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Hexachlorobutadiene	ND	0.000322	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Isopropylbenzene	ND	0.000370	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
4-Isopropyltoluene	ND	0.000619	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Methylene chloride	0.000510	0.000394	0.00159	J	mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
n-Butylbenzene	ND	0.000654	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
2-Hexanone	0.000653	0.000332	0.00797	J	mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
n-Propylbenzene	ND	0.000298	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
sec-Butylbenzene	0.000534	0.000403	0.00159	J	mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Styrene	ND	0.000264	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
4-Methyl-2-pentanone	ND	0.000673	0.00797		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
tert-Butylbenzene	ND	0.000244	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000259	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505004

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 DUP01

Project: SWMU 10

Collection Date: 4/29/2015

Lab ID: 1505004-005

Matrix: SOIL

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
1,1,2,2-Tetrachloroethane	ND	0.000350	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Tetrachloroethene (PCE)	ND	0.000316	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
trans-1,2-DCE	ND	0.000258	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
trans-1,3-Dichloropropene	ND	0.000208	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,2,3-Trichlorobenzene	ND	0.000583	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,2,4-Trichlorobenzene	ND	0.000597	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,1,1-Trichloroethane	ND	0.000227	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,1,2-Trichloroethane	ND	0.00159	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Trichloroethene (TCE)	ND	0.000317	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Trichlorofluoromethane	ND	0.000322	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
1,2,3-Trichloropropane	ND	0.000560	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Vinyl chloride	ND	0.000182	0.00159		mg/Kg-dr	1	5/6/2015 8:19:12 PM	19032
Surr: 1,2-Dichloroethane-d4	99.5	0	70-130		%REC	1	5/6/2015 8:19:12 PM	19032
Surr: 4-Bromofluorobenzene	106	0	70-130		%REC	1	5/6/2015 8:19:12 PM	19032
Surr: Dibromofluoromethane	102	0	70-130		%REC	1	5/6/2015 8:19:12 PM	19032
Surr: Toluene-d8	91.3	0	70-130		%REC	1	5/6/2015 8:19:12 PM	19032
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.86	3.4		mg/Kg-dr	1	5/6/2015 1:27:20 AM	R25982
Surr: BFB	106	0	67.4-150		%REC	1	5/6/2015 1:27:20 AM	R25982

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		



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

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762970-01

Date Received : May 05, 2015
Description :
Sample ID : 1505004-001C SWMU 10-4 0-2 FT

Site ID :

Project # :

Collected By :
Collection Date : 04/29/15 15:30

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	150		mV	2580 B-2011	05/07/15	1
pH	8.3	0.10	su	9045D	05/07/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 05/13/15 16:23 Printed: 05/13/15 16:23
L762970-01 (PH) - 8.3 at 20.2C



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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 05, 2015
Description :
Sample ID : 1505004-002C SWMU 10-4 2-4 FT
Collected By :
Collection Date : 04/29/15 15:40

ESC Sample # : L762970-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	70.		mV	2580 B-2011	05/10/15	1
pH	8.4	0.10	su	9045D	05/07/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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

Reported: 05/13/15 16:23 Printed: 05/13/15 16:23
L762970-02 (PH) - 8.4 at 21.0C



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

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 05, 2015
Description :
Sample ID : 1505004-003C SWMU 10-4 6-8 FT
Collected By :
Collection Date : 04/29/15 15:50

ESC Sample # : L762970-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	90.		mV	2580 B-2011	05/10/15	1
pH	8.4	0.10	su	9045D	05/07/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 05/13/15 16:23 Printed: 05/13/15 16:23
L762970-03 (PH) - 8.4 at 20.7C



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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 05, 2015
Description :
Sample ID : 1505004-004C SWMU 10-4 18-20 FT
Collected By :
Collection Date : 04/29/15 16:00

ESC Sample # : L762970-04

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/13/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	80.		mV	2580 B-2011	05/10/15	1
pH	9.4	0.10	su	9045D	05/07/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

The reported analytical results relate only to the sample submitted.

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L762970-04 (PH) - 9.4 at 20.4C



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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 05, 2015
Description :
Sample ID : 1505004-005C SWMU 10 DUP01
Collected By :
Collection Date : 04/29/15 00:00

ESC Sample # : L762970-05

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	90.		mV	2580 B-2011	05/10/15	1
pH	8.4	0.10	su	9045D	05/07/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 05/13/15 16:23 Printed: 05/13/15 16:23
L762970-05 (PH) - 8.4 at 20.9C



YOUR LAB OF CHOICE

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762970

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Est. 1970

May 13, 2015

Analyte	Result	Laboratory Blank Units % Rec	Limit	Batch	Date Analyzed
Chromium, Hexavalent	< 2	mg/kg		WG786845	05/07/15 05:34
Cyanide	< .25	mg/kg		WG787733	05/12/15 10:23
Cyanide	< .25	mg/kg		WG788554	05/13/15 13:12

Analyte	Units	Result	Duplicate Duplicate	RPD	Limit	Ref Samp	Batch
Chromium, Hexavalent	mg/kg	0.0	0.0	0.0	20	L762970-04	WG786845
pH	su	7.80	7.80	0.385	1	L762507-04	WG787133
pH	su	8.00	8.10	1.12*	1	L763345-03	WG787133
ORP	mV	100.	100.	0.0	20	L762539-05	WG787164
ORP	mV	150.	150.	0.0	20	L762970-01	WG787164
ORP	mV	70.0	70.0	0.0	20	L762970-02	WG787860
ORP	mV	140.	140.	0.0	20	L762978-01	WG787860
Cyanide	mg/kg	0.0	0.0	0.0	20	L762970-02	WG787733
Cyanide	mg/kg	0.0	0.0	0.0	20	L762976-05	WG787733
Cyanide	mg/kg	0.320	0.320	0.0	20	L764359-01	WG788554

Analyte	Units	Laboratory Control Known Val	Sample Result	% Rec	Limit	Batch
Chromium, Hexavalent	mg/kg	59.8	65.2	109.	80-120	WG786845
pH	su	7.84	7.82	99.7	98.3-101.7	WG787133
ORP	mV	100	105.	105.	90-110	WG787164
ORP	mV	100	100.	100.	90-110	WG787860
Cyanide	mg/kg	101	102.	101.	50-150	WG787733
Cyanide	mg/kg	101	112.	111.	50-150	WG788554

Analyte	Units	Laboratory Control Result	Sample Ref	Duplicate %Rec	Limit	RPD	Limit	Batch
Chromium, Hexavalent	mg/kg	65.8	65.2	110.	80-120	0.916	20	WG786845
pH	su	7.81	7.82	100.	98.3-101.7	0.128	20	WG787133

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



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Quality Assurance Report
Level II

L762970

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Est. 1970

May 13, 2015

Analyte	Laboratory Control Sample Duplicate				Limit	RPD	Limit	Batch
	Units	Result	Ref	%Rec				
ORP	mV	105.	105.	105.	90-110	0.0	20	WG787164
ORP	mV	100.	100.	100.	90-110	0.0	20	WG787860
Cyanide	mg/kg	107.	102.	106.	50-150	4.78	20	WG787733
Cyanide	mg/kg	122.	112.	121.	50-150	8.55	20	WG788554

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
Chromium, Hexavalent	mg/kg	20.8	0.0	20	100.	75-125	L762970-04	WG786845
Cyanide	mg/kg	3.18	0.0	3.33	95.0	80-120	L762970-04	WG788554

Analyte	Units	Matrix Spike Duplicate				Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec						
Chromium, Hexavalent	mg/kg	20.8	20.8	104.		75-125	0.0	20	L762970-04	WG786845
Cyanide	mg/kg	3.50	3.18	105.		80-120	9.58	20	L762970-04	WG788554

Batch number / Run number / Sample number cross reference

WG786845: R3035419: L762970-01 02 03 04 05
WG787133: R3035650: L762970-01 02 03 04 05
WG787164: R3035850: L762970-01
WG787860: R3036066: L762970-02 03 04 05
WG787733: R3036388: L762970-01 02 03 05
WG788554: R3036700: L762970-04

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

* Performance of this Analyte is outside of established criteria.

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505004

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19040		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 19040		RunNo: 25952					
Prep Date:	5/4/2015		Analysis Date: 5/5/2015		SeqNo: 769701		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	9.5		10.00		95.4	57.9	140			

Sample ID	LCS-19040		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 19040		RunNo: 25952					
Prep Date:	5/4/2015		Analysis Date: 5/5/2015		SeqNo: 769702		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	102	67.8	130			
Surr: DNOP	4.9		5.000		97.4	57.9	140			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505004

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19008	SampType:	MBLK	TestCode:	EPA Method 8260B: Volatiles					
Client ID:	PBS	Batch ID:	19008	RunNo:	25941					
Prep Date:	5/1/2015	Analysis Date:	5/4/2015	SeqNo:	768949	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0091	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	0.054	0.75								J
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	0.038	0.50								J
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	0.0048	0.050								J
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	0.012	0.050								J
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505004

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19008		SampType: MBLK		TestCode: EPA Method 8260B: Volatiles					
Client ID:	PBS		Batch ID: 19008		RunNo: 25941					
Prep Date:	5/1/2015		Analysis Date: 5/4/2015		SeqNo: 768949		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.51		0.5000		102	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.1	70	130			
Surr: Toluene-d8	0.46		0.5000		92.4	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		91.7	70	130			

Sample ID	lcs-19008		SampType: LCS		TestCode: EPA Method 8260B: Volatiles					
Client ID:	LCSS		Batch ID: 19008		RunNo: 25941					
Prep Date:	5/1/2015		Analysis Date: 5/4/2015		SeqNo: 768950		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.050	1.000	0	97.5	70	130			
Toluene	0.89	0.050	1.000	0	89.1	70	130			
Chlorobenzene	1.0	0.050	1.000	0	99.7	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505004

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-19008		SampType: LCS		TestCode: EPA Method 8260B: Volatiles					
Client ID:	LCSS		Batch ID: 19008		RunNo: 25941					
Prep Date:	5/1/2015		Analysis Date: 5/4/2015		SeqNo: 768950		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.2	0.050	1.000	0	123	60.6	134			
Trichloroethene (TCE)	0.90	0.050	1.000	0	90.3	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		103	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.7	70	130			
Surr: Toluene-d8	0.44		0.5000		88.0	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.9	70	130			

Sample ID	5mL rb	SampType: MBLK			TestCode: EPA Method 8260B: Volatiles					
Client ID:	PBS	Batch ID: R25982			RunNo: 25982					
Prep Date:		Analysis Date: 5/5/2015			SeqNo: 770974		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.49		0.5000		98.1	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		89.0	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		100	70	130			

Sample ID	100ng Ics		SampType: LCS		TestCode: EPA Method 8260B: Volatiles					
Client ID:	LCSS		Batch ID: R25982		RunNo: 25982					
Prep Date:			Analysis Date: 5/5/2015		SeqNo: 770975		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.50		0.5000		99.5	70	130			
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		91.1	70	130			
Surr: Toluene-d8	0.51		0.5000		103	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.2	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505004

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-19032		SampType: LCS			TestCode: Method 8260B/5035LOW: VOLATILES				
Client ID:	LCSS		Batch ID: 19032			RunNo: 26013				
Prep Date:	5/4/2015		Analysis Date: 5/6/2015			SeqNo: 771128		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0108	0.00200	0.01000	0	108	70	130			
Toluene	0.00992	0.00200	0.01000	0	99.2	70	130			
Chlorobenzene	0.00872	0.00200	0.01000	0	87.2	70	130			
1,1-Dichloroethene	0.0112	0.00200	0.01000	0	112	70	130			
Trichloroethene (TCE)	0.0105	0.00200	0.01000	0	105	61.6	131			
Surr: 1,2-Dichloroethane-d4	0.0266		0.02500		106	70	130			
Surr: 4-Bromofluorobenzene	0.0221		0.02500		88.5	70	130			
Surr: Dibromofluoromethane	0.0266		0.02500		107	70	130			
Surr: Toluene-d8	0.0248		0.02500		99.4	70	130			

Sample ID	MB-19032		SampType: MBLK			TestCode: Method 8260B/5035LOW: VOLATILES				
Client ID:	PBS		Batch ID: 19032			RunNo: 26013				
Prep Date:	5/4/2015		Analysis Date: 5/6/2015			SeqNo: 771129		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	0.000210	0.00200								J
Ethylbenzene	ND	0.00200								
Xylenes, Total	ND	0.00200								
Methyl tert-butyl ether (MTBE)	ND	0.00200								
1,2,4-Trimethylbenzene	ND	0.00200								
1,3,5-Trimethylbenzene	ND	0.00200								
1,2-Dichloroethane (EDC)	ND	0.00200								
1,2-Dibromoethane (EDB)	ND	0.00200								
Naphthalene	ND	0.00200								
1-Methylnaphthalene	ND	0.00400								
2-Methylnaphthalene	ND	0.00400								
Acetone	ND	0.0100								
Bromobenzene	ND	0.00200								
Bromodichloromethane	ND	0.00200								
Bromoform	ND	0.00200								
Bromomethane	ND	0.00300								
2-Butanone	0.000830	0.0100								J
Carbon tetrachloride	ND	0.00200								
Chlorobenzene	ND	0.00200								
Chloroethane	ND	0.00200								
Chloroform	ND	0.00200								
Chloromethane	ND	0.00200								
2-Chlorotoluene	ND	0.00200								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505004

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19032		SampType: MBLK		TestCode: Method 8260B/5035LOW: VOLATILES					
Client ID:	PBS		Batch ID: 19032		RunNo: 26013					
Prep Date:	5/4/2015		Analysis Date: 5/6/2015		SeqNo: 771129		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Carbon disulfide	ND	0.0100								
4-Chlorotoluene	ND	0.00200								
cis-1,2-DCE	ND	0.00200								
cis-1,3-Dichloropropene	ND	0.00200								
1,2-Dibromo-3-chloropropane	ND	0.00200								
Dibromochloromethane	ND	0.00200								
Dibromomethane	ND	0.00200								
1,2-Dichlorobenzene	ND	0.00200								
1,3-Dichlorobenzene	ND	0.00200								
1,4-Dichlorobenzene	ND	0.00200								
Dichlorodifluoromethane	ND	0.00200								
1,1-Dichloroethane	ND	0.00200								
1,1-Dichloroethene	ND	0.00200								
1,2-Dichloropropane	ND	0.00200								
1,3-Dichloropropane	ND	0.00200								
2,2-Dichloropropane	ND	0.00200								
1,1-Dichloropropene	ND	0.00200								
Hexachlorobutadiene	ND	0.00200								
Isopropylbenzene	ND	0.00200								
4-Isopropyltoluene	ND	0.00200								
Methylene chloride	ND	0.00200								
n-Butylbenzene	ND	0.00200								
2-Hexanone	ND	0.0100								
n-Propylbenzene	ND	0.00200								
sec-Butylbenzene	ND	0.00200								
Styrene	ND	0.00200								
4-Methyl-2-pentanone	ND	0.0100								
tert-Butylbenzene	ND	0.00200								
1,1,1,2-Tetrachloroethane	ND	0.00200								
1,1,2,2-Tetrachloroethane	ND	0.00200								
Tetrachloroethene (PCE)	ND	0.00200								
trans-1,2-DCE	ND	0.00200								
trans-1,3-Dichloropropene	ND	0.00200								
1,2,3-Trichlorobenzene	ND	0.00200								
1,2,4-Trichlorobenzene	ND	0.00200								
1,1,1-Trichloroethane	ND	0.00200								
1,1,2-Trichloroethane	ND	0.00200								
Trichloroethene (TCE)	ND	0.00200								
Trichlorofluoromethane	ND	0.00200								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505004

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19032	SampType: MBLK		TestCode: Method 8260B/5035LOW: VOLATILES						
Client ID:	PBS	Batch ID: 19032		RunNo: 26013						
Prep Date:	5/4/2015	Analysis Date: 5/6/2015		SeqNo: 771129		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2,3-Trichloropropane	ND	0.00200								
Vinyl chloride	ND	0.00200								
Surr: 1,2-Dichloroethane-d4	0.0275		0.02500		110	70	130			
Surr: 4-Bromofluorobenzene	0.0232		0.02500		93.0	70	130			
Surr: Dibromofluoromethane	0.0276		0.02500		110	70	130			
Surr: Toluene-d8	0.0239		0.02500		95.4	70	130			

Sample ID	lcs-19107		SampType: LCS		TestCode: Method 8260B/5035LOW: VOLATILES					
Client ID:	LCSS		Batch ID: 19107		RunNo: 26028					
Prep Date:	5/7/2015		Analysis Date: 5/7/2015		SeqNo: 771797		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0107	0.00200	0.01000	0	107	70	130			
Toluene	0.00998	0.00200	0.01000	0	99.8	70	130			
Chlorobenzene	0.00897	0.00200	0.01000	0	89.7	70	130			
1,1-Dichloroethene	0.0114	0.00200	0.01000	0	114	70	130			
Trichloroethene (TCE)	0.0102	0.00200	0.01000	0	102	61.6	131			
Surr: 1,2-Dichloroethane-d4	0.0253		0.02500		101	70	130			
Surr: 4-Bromofluorobenzene	0.0237		0.02500		94.8	70	130			
Surr: Dibromofluoromethane	0.0251		0.02500		100	70	130			
Surr: Toluene-d8	0.0253		0.02500		101	70	130			

Sample ID	mb-19107	SampType: MBLK			TestCode: Method 8260B/5035LOW: VOLATILES					
Client ID:	PBS	Batch ID: 19107			RunNo: 26028					
Prep Date:	5/7/2015	Analysis Date: 5/7/2015			SeqNo: 771798		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	0.000210	0.00200								J
Ethylbenzene	ND	0.00200								
Xylenes, Total	ND	0.00200								
Methyl tert-butyl ether (MTBE)	ND	0.00200								
1,2,4-Trimethylbenzene	ND	0.00200								
1,3,5-Trimethylbenzene	ND	0.00200								
1,2-Dichloroethane (EDC)	ND	0.00200								
1,2-Dibromoethane (EDB)	ND	0.00200								
Naphthalene	ND	0.00200								
1-Methylnaphthalene	ND	0.00400								
2-Methylnaphthalene	ND	0.00400								
Acetone	ND	0.0100								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505004

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19107		SampType: MBLK			TestCode: Method 8260B/5035LOW: VOLATILES				
Client ID:	PBS		Batch ID: 19107			RunNo: 26028				
Prep Date:	5/7/2015		Analysis Date: 5/7/2015			SeqNo: 771798 Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromobenzene	ND	0.00200								
Bromodichloromethane	ND	0.00200								
Bromoform	ND	0.00200								
Bromomethane	ND	0.00300								
2-Butanone	0.000810	0.0100								J
Carbon tetrachloride	ND	0.00200								
Chlorobenzene	ND	0.00200								
Chloroethane	ND	0.00200								
Chloroform	ND	0.00200								
Chloromethane	ND	0.00200								
2-Chlorotoluene	ND	0.00200								
Carbon disulfide	ND	0.0100								
4-Chlorotoluene	ND	0.00200								
cis-1,2-DCE	ND	0.00200								
cis-1,3-Dichloropropene	ND	0.00200								
1,2-Dibromo-3-chloropropane	ND	0.00200								
Dibromochloromethane	ND	0.00200								
Dibromomethane	ND	0.00200								
1,2-Dichlorobenzene	ND	0.00200								
1,3-Dichlorobenzene	ND	0.00200								
1,4-Dichlorobenzene	ND	0.00200								
Dichlorodifluoromethane	ND	0.00200								
1,1-Dichloroethane	ND	0.00200								
1,1-Dichloroethene	ND	0.00200								
1,2-Dichloropropane	ND	0.00200								
1,3-Dichloropropane	ND	0.00200								
2,2-Dichloropropane	ND	0.00200								
1,1-Dichloropropene	ND	0.00200								
Hexachlorobutadiene	ND	0.00200								
Isopropylbenzene	ND	0.00200								
4-Isopropyltoluene	ND	0.00200								
Methylene chloride	ND	0.00200								
n-Butylbenzene	ND	0.00200								
2-Hexanone	ND	0.0100								
n-Propylbenzene	ND	0.00200								
sec-Butylbenzene	ND	0.00200								
Styrene	ND	0.00200								
4-Methyl-2-pentanone	ND	0.0100								
tert-Butylbenzene	ND	0.00200								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505004

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19107		SampType: MBLK		TestCode: Method 8260B/5035LOW: VOLATILES					
Client ID:	PBS		Batch ID: 19107		RunNo: 26028					
Prep Date:	5/7/2015		Analysis Date: 5/7/2015		SeqNo: 771798		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	0.00200								
1,1,2,2-Tetrachloroethane	ND	0.00200								
Tetrachloroethene (PCE)	ND	0.00200								
trans-1,2-DCE	ND	0.00200								
trans-1,3-Dichloropropene	ND	0.00200								
1,2,3-Trichlorobenzene	ND	0.00200								
1,2,4-Trichlorobenzene	ND	0.00200								
1,1,1-Trichloroethane	ND	0.00200								
1,1,2-Trichloroethane	ND	0.00200								
Trichloroethene (TCE)	ND	0.00200								
Trichlorofluoromethane	ND	0.00200								
1,2,3-Trichloropropane	ND	0.00200								
Vinyl chloride	ND	0.00200								
Surr: 1,2-Dichloroethane-d4	0.0256		0.02500		102	70	130			
Surr: 4-Bromofluorobenzene	0.0245		0.02500		97.9	70	130			
Surr: Dibromofluoromethane	0.0258		0.02500		103	70	130			
Surr: Toluene-d8	0.0232		0.02500		92.8	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505004

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19026	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBS	Batch ID:	19026	RunNo:	26053					
Prep Date:	5/4/2015	Analysis Date:	5/7/2015	SeqNo:	772520	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3'-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505004

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19026	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBS	Batch ID:	19026	RunNo:	26053					
Prep Date:	5/4/2015	Analysis Date:	5/7/2015	SeqNo:	772520	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.6		3.330		79.4	26.4	129			
Surr: Phenol-d5	2.7		3.330		80.7	34.8	118			
Surr: 2,4,6-Tribromophenol	2.5		3.330		75.6	26.8	128			
Surr: Nitrobenzene-d5	1.3		1.670		76.1	35.8	124			
Surr: 2-Fluorobiphenyl	1.4		1.670		81.2	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		88.4	29.4	129			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505004

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-19026		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS		Batch ID: 19026		RunNo: 26053					
Prep Date:	5/4/2015		Analysis Date: 5/7/2015		SeqNo: 772521		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.5	0.20	1.670	0	88.6	45.8	114			
4-Chloro-3-methylphenol	2.9	0.50	3.330	0	86.8	52.3	122			
2-Chlorophenol	2.6	0.20	3.330	0	77.2	49.9	115			
1,4-Dichlorobenzene	1.4	0.20	1.670	0	84.4	43.7	107			
2,4-Dinitrotoluene	1.3	0.50	1.670	0	77.6	36	106			
N-Nitrosodi-n-propylamine	1.4	0.20	1.670	0	81.3	39.5	110			
4-Nitrophenol	3.0	0.25	3.330	0	90.2	45.1	121			
Pentachlorophenol	2.5	0.40	3.330	0	73.7	23.7	111			
Phenol	2.9	0.20	3.330	0	86.4	52.7	119			
Pyrene	1.3	0.20	1.670	0	76.9	50.4	116			
1,2,4-Trichlorobenzene	1.6	0.20	1.670	0	98.3	40.1	114			
Surr: 2-Fluorophenol	2.6		3.330		78.7	26.4	129			
Surr: Phenol-d5	2.7		3.330		81.5	34.8	118			
Surr: 2,4,6-Tribromophenol	3.0		3.330		91.3	26.8	128			
Surr: Nitrobenzene-d5	1.4		1.670		83.7	35.8	124			
Surr: 2-Fluorobiphenyl	1.5		1.670		90.8	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		87.3	29.4	129			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505004

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19078		SampType: MBLK		TestCode: EPA Method 7471: Mercury					
Client ID:	PBS		Batch ID: 19078		RunNo: 26010					
Prep Date:	5/6/2015		Analysis Date: 5/6/2015		SeqNo: 771069		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercurv	ND	0.033								

Sample ID	LCS-19078		SampType: LCS		TestCode: EPA Method 7471: Mercury					
Client ID:	LCSS		Batch ID: 19078		RunNo: 26010					
Prep Date:	5/6/2015		Analysis Date: 5/6/2015		SeqNo: 771070		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	103	80	120			

Sample ID	1505004-004BMS		SampType: MS		TestCode: EPA Method 7471: Mercury					
Client ID:	SWMU 10-4 (18-20')		Batch ID: 19078		RunNo: 26010					
Prep Date:	5/6/2015		Analysis Date: 5/6/2015		SeqNo: 771089		Units: mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.19	0.035	0.1792	0.003959	104	75	125			

Sample ID	1505004-004BMSD			SampType:	MSD		TestCode:	EPA Method 7471: Mercury			
Client ID:	SWMU 10-4 (18-20')			Batch ID:	19078		RunNo:	26010			
Prep Date:	5/6/2015		Analysis Date:	5/6/2015		SeqNo:	771090		Units: mg/Kg-dry		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	0.20	0.036	0.1808	0.003959	107	75	125	3.16	20		

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505004

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS-19081		SampType: LCS		TestCode: EPA Method 6010B: Soil Metals					
Client ID:	LCSS		Batch ID: 19081		RunNo: 26050					
Prep Date:	5/6/2015		Analysis Date: 5/7/2015		SeqNo: 772230		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	25	2.5	25.00	0	99.7	80	120			
Arsenic	25	2.5	25.00	0	99.5	80	120			
Barium	24	0.10	25.00	0	97.4	80	120			
Beryllium	26	0.15	25.00	0	105	80	120			
Cadmium	25	0.10	25.00	0	98.6	80	120			
Chromium	25	0.30	25.00	0	99.6	80	120			
Cobalt	24	0.30	25.00	0	97.1	80	120			
Iron	26	2.5	25.00	0	104	80	120			B
Lead	25	0.25	25.00	0	99.3	80	120			
Manganese	25	0.10	25.00	0	98.4	80	120			
Nickel	24	0.50	25.00	0	96.7	80	120			
Selenium	25	2.5	25.00	0	102	80	120			
Silver	5.2	0.25	5.000	0	105	80	120			
Vanadium	26	2.5	25.00	0	103	80	120			
Zinc	25	2.5	25.00	0	98.1	80	120			

Sample ID	MB-19081	SampType: MBLK			TestCode: EPA Method 6010B: Soil Metals					
Client ID:	PBS	Batch ID: 19081			RunNo: 26050					
Prep Date:	5/6/2015	Analysis Date: 5/7/2015			SeqNo: 772232		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	3.8	2.5								
Lead	0.14	0.25								J
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505004

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	PBS	Batch ID:	R25941	RunNo:	25941					
Prep Date:		Analysis Date:	5/4/2015	SeqNo:	770909	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	470		500.0		93.3	67.4	150			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	LCSS	Batch ID:	R25941	RunNo:	25941					
Prep Date:		Analysis Date:	5/4/2015	SeqNo:	770910	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.6	79.9	135			
Surr: BFB	470		500.0		93.3	67.4	150			

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	PBS	Batch ID:	R25982	RunNo:	25982					
Prep Date:		Analysis Date:	5/5/2015	SeqNo:	771006	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	470		500.0		94.7	67.4	150			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	LCSS	Batch ID:	R25982	RunNo:	25982					
Prep Date:		Analysis Date:	5/5/2015	SeqNo:	771007	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.5	79.9	135			
Surr: BFB	460		500.0		92.6	67.4	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit



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

Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1505004

RcptNo: 1

Received by/date:		04/30/15
Logged By:	Lindsay Mangin	4/30/2015 3:50:00 PM
Completed By:	Lindsay Mangin	5/1/2015 6:39:41 AM
Reviewed By:		05/04/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☒	No ☐	Not Present ☐
2. Is Chain of Custody complete?	Yes ☒	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☒	No ☐	NA ☐
5. Were all samples received at a temperature of >0° 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:	_____		

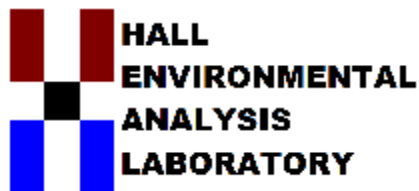
17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			

WESTERN REFINING SOUTHWEST, INC.
GALLUP REFINERY - SWMU 10
METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020



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

October 05, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10

OrderNo.: 1505005

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 4/30/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 12, 2015.

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', with a stylized flourish at the end.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505005

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-3-GW

Project: SWMU 10

Collection Date: 4/29/2015 6:00:00 PM

Lab ID: 1505005-001

Matrix: AQUEOUS

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH	
Diesel Range Organics (DRO)	ND	0.91	1.0		mg/L	1	5/1/2015 7:07:28 PM	18985
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/1/2015 7:07:28 PM	18985
Surr: DNOP	110	0	76.5-150		%REC	1	5/1/2015 7:07:28 PM	18985
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB	
Gasoline Range Organics (GRO)	0.033	0.012	0.050	J	mg/L	1	5/4/2015 9:23:36 PM	R25939
Surr: BFB	168	0	80-120	S	%REC	1	5/4/2015 9:23:36 PM	R25939
EPA METHOD 300.0: ANIONS							Analyst: LGT	
Fluoride	ND	0.29	1.0		mg/L	10	5/6/2015 8:26:50 PM	R26026
Chloride	7100	67	250		mg/L	500	5/6/2015 8:39:15 PM	R26026
Sulfate	1100	57	250		mg/L	500	5/6/2015 8:39:15 PM	R26026
EPA METHOD 200.7: DISSOLVED METALS							Analyst: JLF	
Barium	0.23	0.00095	0.0020		mg/L	1	5/6/2015 6:57:44 PM	R26030
Beryllium	0.00040	0.00031	0.0020	J	mg/L	1	5/6/2015 6:57:44 PM	R26030
Cadmium	ND	0.00097	0.0020		mg/L	1	5/6/2015 6:57:44 PM	R26030
Chromium	0.0056	0.0018	0.0060	J	mg/L	1	5/6/2015 6:57:44 PM	R26030
Cobalt	0.0081	0.0013	0.0060		mg/L	1	5/6/2015 6:57:44 PM	R26030
Iron	0.068	0.0073	0.020		mg/L	1	5/6/2015 6:57:44 PM	R26030
Manganese	0.45	0.00027	0.0020	*	mg/L	1	5/6/2015 6:57:44 PM	R26030
Nickel	0.0053	0.0021	0.010	J	mg/L	1	5/6/2015 6:57:44 PM	R26030
Silver	ND	0.0012	0.0050		mg/L	1	5/6/2015 6:57:44 PM	R26030
Vanadium	0.0048	0.0015	0.050	J	mg/L	1	5/6/2015 6:57:44 PM	R26030
Zinc	0.033	0.0028	0.010		mg/L	1	5/6/2015 6:57:44 PM	R26030
EPA METHOD 200.7: METALS							Analyst: JLF	
Barium	0.28	0.00095	0.0020		mg/L	1	5/5/2015 5:27:16 PM	19025
Beryllium	0.00091	0.00031	0.0020	J	mg/L	1	5/5/2015 5:27:16 PM	19025
Cadmium	ND	0.00097	0.0020		mg/L	1	5/5/2015 5:27:16 PM	19025
Chromium	ND	0.0022	0.0060		mg/L	1	5/5/2015 5:27:16 PM	19025
Cobalt	0.0059	0.0013	0.0060	J	mg/L	1	5/5/2015 5:27:16 PM	19025
Iron	2.6	0.036	0.10	*	mg/L	5	5/6/2015 5:05:18 PM	19025
Manganese	0.52	0.0015	0.0020	*	mg/L	1	5/5/2015 5:27:16 PM	19025
Nickel	0.0067	0.0023	0.010	J	mg/L	1	5/5/2015 5:27:16 PM	19025
Silver	ND	0.0021	0.0050		mg/L	1	5/5/2015 5:27:16 PM	19025
Vanadium	0.010	0.0015	0.050	J	mg/L	1	5/5/2015 5:27:16 PM	19025
Zinc	0.023	0.0036	0.010		mg/L	1	5/6/2015 4:59:28 PM	19025
EPA 200.8: DISSOLVED METALS							Analyst: DBD	
Antimony	0.00074	0.00071	0.0050	J	mg/L	5	5/11/2015 2:39:36 PM	R26119
Arsenic	0.011	0.0032	0.050	J*	mg/L	50	5/12/2015 4:59:58 PM	R26138

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505005

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-3-GW

Project: SWMU 10

Collection Date: 4/29/2015 6:00:00 PM

Lab ID: 1505005-001

Matrix: AQUEOUS

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: DBD	
Lead	ND	0.00013	0.0050		mg/L	5	5/11/2015 2:39:36 PM	R26119
Selenium	0.041	0.0097	0.050	J	mg/L	50	5/12/2015 4:59:58 PM	R26138
EPA 200.8: METALS							Analyst: DBD	
Antimony	0.0013	0.0011	0.0050	J	mg/L	5	5/8/2015 2:04:48 PM	19025
Arsenic	ND	0.022	0.050		mg/L	50	5/13/2015 5:29:34 PM	19025
Lead	0.0024	0.00034	0.0050	J	mg/L	5	5/8/2015 2:04:48 PM	19025
Selenium	0.036	0.0061	0.050	J	mg/L	50	5/13/2015 5:29:34 PM	19025
EPA METHOD 245.1: MERCURY							Analyst: MED	
Mercury	ND	0.000059	0.00020		mg/L	1	5/5/2015 2:23:50 PM	19047
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	1.9	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Acenaphthylene	ND	1.9	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Aniline	ND	1.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Anthracene	ND	1.6	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Azobenzene	ND	2.0	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Benzoic acid	ND	1.0	20		µg/L	1	5/5/2015 9:59:02 PM	18996
Benzyl alcohol	ND	1.2	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/5/2015 9:59:02 PM	18996
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Carbazole	ND	1.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/5/2015 9:59:02 PM	18996
4-Chloroaniline	ND	1.9	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2-Chlorophenol	ND	1.2	10		µg/L	1	5/5/2015 9:59:02 PM	18996
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Chrysene	ND	2.2	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/5/2015 9:59:02 PM	18996

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505005

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-3-GW

Project: SWMU 10

Collection Date: 4/29/2015 6:00:00 PM

Lab ID: 1505005-001

Matrix: AQUEOUS

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Dibenzofuran	ND	1.9	10		µg/L	1	5/5/2015 9:59:02 PM	18996
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/5/2015 9:59:02 PM	18996
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/5/2015 9:59:02 PM	18996
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/5/2015 9:59:02 PM	18996
3,3'-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Diethyl phthalate	ND	1.7	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/5/2015 9:59:02 PM	18996
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/5/2015 9:59:02 PM	18996
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/5/2015 9:59:02 PM	18996
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/5/2015 9:59:02 PM	18996
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Fluoranthene	ND	1.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Fluorene	ND	1.7	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Hexachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Hexachloroethane	ND	1.6	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Isophorone	ND	2.0	10		µg/L	1	5/5/2015 9:59:02 PM	18996
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2-Methylphenol	ND	1.2	10		µg/L	1	5/5/2015 9:59:02 PM	18996
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/5/2015 9:59:02 PM	18996
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/5/2015 9:59:02 PM	18996
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Naphthalene	ND	1.8	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2-Nitroaniline	ND	1.8	10		µg/L	1	5/5/2015 9:59:02 PM	18996
3-Nitroaniline	ND	1.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
4-Nitroaniline	ND	1.2	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Nitrobenzene	ND	1.5	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2-Nitrophenol	ND	1.2	10		µg/L	1	5/5/2015 9:59:02 PM	18996
4-Nitrophenol	ND	1.4	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Pentachlorophenol	ND	1.1	20		µg/L	1	5/5/2015 9:59:02 PM	18996
Phenanthrene	ND	2.0	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Phenol	ND	1.1	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Pyrene	ND	2.3	10		µg/L	1	5/5/2015 9:59:02 PM	18996

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505005

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-3-GW

Project: SWMU 10

Collection Date: 4/29/2015 6:00:00 PM

Lab ID: 1505005-001

Matrix: AQUEOUS

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Pyridine	ND	1.7	10		µg/L	1	5/5/2015 9:59:02 PM	18996
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/5/2015 9:59:02 PM	18996
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/5/2015 9:59:02 PM	18996
Surr: 2-Fluorophenol	30.7	0	14.9-111		%REC	1	5/5/2015 9:59:02 PM	18996
Surr: Phenol-d5	31.8	0	11.3-108		%REC	1	5/5/2015 9:59:02 PM	18996
Surr: 2,4,6-Tribromophenol	29.8	0	15.7-154		%REC	1	5/5/2015 9:59:02 PM	18996
Surr: Nitrobenzene-d5	84.1	0	47.8-106		%REC	1	5/5/2015 9:59:02 PM	18996
Surr: 2-Fluorobiphenyl	74.7	0	21.3-123		%REC	1	5/5/2015 9:59:02 PM	18996
Surr: 4-Terphenyl-d14	58.1	0	14.3-135		%REC	1	5/5/2015 9:59:02 PM	18996
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Benzene	2.9	0.065	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Toluene	ND	0.11	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Methyl tert-butyl ether (MTBE)	5.5	0.17	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,2-Dichloroethane (EDC)	0.48	0.18	1.0	J	µg/L	1	5/6/2015 3:02:32 PM	R26017
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Naphthalene	ND	0.22	2.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Acetone	ND	0.94	10		µg/L	1	5/6/2015 3:02:32 PM	R26017
Bromobenzene	ND	0.11	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Bromoform	ND	0.16	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Bromomethane	ND	1.2	3.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
2-Butanone	1.4	0.36	10	J	µg/L	1	5/6/2015 3:02:32 PM	R26017
Carbon disulfide	ND	0.67	10		µg/L	1	5/6/2015 3:02:32 PM	R26017
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Chloroethane	ND	0.10	2.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Chloroform	ND	0.21	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Chloromethane	ND	0.17	3.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/6/2015 3:02:32 PM	R26017

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505005

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-3-GW

Project: SWMU 10

Collection Date: 4/29/2015 6:00:00 PM

Lab ID: 1505005-001

Matrix: AQUEOUS

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Dibromomethane	ND	0.23	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
2-Hexanone	ND	0.48	10		µg/L	1	5/6/2015 3:02:32 PM	R26017
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/6/2015 3:02:32 PM	R26017
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
n-Propylbenzene	0.31	0.16	1.0	J	µg/L	1	5/6/2015 3:02:32 PM	R26017
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Styrene	ND	0.11	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/6/2015 3:02:32 PM	R26017
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/6/2015 3:02:32 PM	R26017
Surr: 1,2-Dichloroethane-d4	109	0	70-130		%REC	1	5/6/2015 3:02:32 PM	R26017
Surr: 4-Bromofluorobenzene	102	0	70-130		%REC	1	5/6/2015 3:02:32 PM	R26017

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505005

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-3-GW

Project: SWMU 10

Collection Date: 4/29/2015 6:00:00 PM

Lab ID: 1505005-001

Matrix: AQUEOUS

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Surr: Dibromofluoromethane	94.6	0	70-130		%REC	1	5/6/2015 3:02:32 PM	R26017
Surr: Toluene-d8	98.0	0	70-130		%REC	1	5/6/2015 3:02:32 PM	R26017

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505005

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: Trip Blank

Project: SWMU 10

Collection Date:

Lab ID: 1505005-002

Matrix: TRIP BLANK

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Benzene	ND	0.065	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Toluene	ND	0.11	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Naphthalene	ND	0.22	2.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Acetone	ND	0.94	10		µg/L	1	5/6/2015 3:30:05 PM	R26017
Bromobenzene	ND	0.11	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Bromoform	ND	0.16	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Bromomethane	ND	1.2	3.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
2-Butanone	ND	0.36	10		µg/L	1	5/6/2015 3:30:05 PM	R26017
Carbon disulfide	ND	0.67	10		µg/L	1	5/6/2015 3:30:05 PM	R26017
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Chloroethane	ND	0.10	2.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Chloroform	ND	0.21	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Chloromethane	ND	0.17	3.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Dibromomethane	ND	0.23	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/6/2015 3:30:05 PM	R26017

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505005

Date Reported: 10/5/2015

CLIENT: Western Refining Company

Client Sample ID: Trip Blank

Project: SWMU 10

Collection Date:

Lab ID: 1505005-002

Matrix: TRIP BLANK

Received Date: 4/30/2015 3:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
2-Hexanone	ND	0.48	10		µg/L	1	5/6/2015 3:30:05 PM	R26017
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/6/2015 3:30:05 PM	R26017
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Styrene	ND	0.11	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/6/2015 3:30:05 PM	R26017
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/6/2015 3:30:05 PM	R26017
Surr: 1,2-Dichloroethane-d4	110	0	70-130		%REC	1	5/6/2015 3:30:05 PM	R26017
Surr: 4-Bromofluorobenzene	96.3	0	70-130		%REC	1	5/6/2015 3:30:05 PM	R26017
Surr: Dibromofluoromethane	94.4	0	70-130		%REC	1	5/6/2015 3:30:05 PM	R26017
Surr: Toluene-d8	95.3	0	70-130		%REC	1	5/6/2015 3:30:05 PM	R26017

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		



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

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 05, 2015
Description :
Sample ID : 1505005-001H SWMU 10-3-GW
Collected By :
Collection Date : 04/29/15 18:00

ESC Sample # : L762968-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	0.14	0.0050	mg/l	4500CN E-2011	05/11/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

The reported analytical results relate only to the sample submitted.

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

Reported: 05/12/15 10:42 Printed: 05/12/15 10:43



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

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 05, 2015
Description :
Sample ID : 1505005-001I SWMU 10-3-GW

ESC Sample # : L762968-02

Site ID :

Project # :

Collected By :
Collection Date : 04/29/15 18:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	3500Cr C-2011	05/11/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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

Reported: 05/12/15 10:42 Printed: 05/12/15 10:43



YOUR LAB OF CHOICE

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762968

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

Tax I.D. 62-0814289

Est. 1970

May 12, 2015

Analyte	Result	Units	Laboratory Blank % Rec	Limit	Batch	Date Analyzed
Cyanide	< .005	mg/l			WG787731	05/11/15 16:24
Hexavalent Chromium	< .0005	mg/l			WG788013	05/11/15 12:19

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Cyanide	mg/l	0.0	0.0	0.0	20	L763281-02	WG787731
Cyanide	mg/l	0.0	0.00700	NA	20	L763288-02	WG787731
Hexavalent Chromium	mg/l	0.000540	0.000510	5.71	20	L762964-02	WG788013
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L763563-02	WG788013

Analyte	Units	Known Val	Laboratory Control Sample Result	% Rec	Limit	Batch
Cyanide	mg/l	.1	0.0990	99.0	90-110	WG787731
Hexavalent Chromium	mg/l	.002	0.00208	104.	90-110	WG788013

Analyte	Units	Result	Ref	Laboratory Control Sample Duplicate %Rec	Limit	RPD	Limit	Batch
Cyanide	mg/l	0.0988	0.0990	99.0	90-110	0.202	20	WG787731
Hexavalent Chromium	mg/l	0.00196	0.00208	98.0	90-110	5.94	20	WG788013

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Cyanide	mg/l	0.205	0.0	.2	100.	90-110	L762964-01	WG787731
Hexavalent Chromium	mg/l	0.0566	0.0	.05	110.*	90-110	L763173-02	WG788013

Analyte	Units	MSD	Ref	Matrix Spike Duplicate %Rec	Limit	RPD	Limit	Ref Samp	Batch
Cyanide	mg/l	0.188	0.205	94.0	90-110	8.65	20	L762964-01	WG787731
Hexavalent Chromium	mg/l	0.0564	0.0566	113.*	90-110	0.354	20	L763173-02	WG788013

Batch number /Run number / Sample number cross reference

WG787731: R3036222: L762968-01
WG788013: R3036316: L762968-02

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505005

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19025		SampType:	MBLK		TestCode:	EPA Method 200.7: Metals			
Client ID:	PBW		Batch ID:	19025		RunNo:	25975			
Prep Date:	5/4/2015		Analysis Date:	5/5/2015		SeqNo:	769760		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								

Sample ID	LCS-19025		SampType:	LCS		TestCode:	EPA Method 200.7: Metals			
Client ID:	LCSW		Batch ID:	19025		RunNo:	25975			
Prep Date:	5/4/2015		Analysis Date:	5/5/2015		SeqNo:	769761		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.5	85	115			
Beryllium	0.50	0.0020	0.5000	0	99.3	85	115			
Cadmium	0.49	0.0020	0.5000	0	97.7	85	115			
Chromium	0.48	0.0060	0.5000	0	96.3	85	115			
Cobalt	0.47	0.0060	0.5000	0	94.0	85	115			
Iron	0.48	0.020	0.5000	0	95.9	85	115			
Manganese	0.47	0.0020	0.5000	0	93.6	85	115			
Nickel	0.47	0.010	0.5000	0	94.5	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Vanadium	0.50	0.050	0.5000	0	99.7	85	115			

Sample ID	MB-19025		SampType:	MBLK		TestCode:	EPA Method 200.7: Metals			
Client ID:	PBW		Batch ID:	19025		RunNo:	25986			
Prep Date:	5/4/2015		Analysis Date:	5/5/2015		SeqNo:	770113		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.0068	0.010								J

Sample ID	LCS-19025		SampType:	LCS		TestCode:	EPA Method 200.7: Metals			
Client ID:	LCSW		Batch ID:	19025		RunNo:	25986			
Prep Date:	5/4/2015		Analysis Date:	5/5/2015		SeqNo:	770114		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.51	0.010	0.5000	0	102	85	115			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505005

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	1505005-001GMS		SampType: MS			TestCode: EPA Method 200.7: Metals				
Client ID:	SWMU 10-3-GW		Batch ID: 19025			RunNo: 25975				
Prep Date:	5/4/2015		Analysis Date: 5/5/2015			SeqNo: 770329		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.68	0.0020	0.5000	0.2804	80.2	70	130			
Beryllium	0.45	0.0020	0.5000	0.0009100	89.2	70	130			
Cadmium	0.49	0.0020	0.5000	0	97.2	70	130			
Chromium	0.44	0.0060	0.5000	0	87.4	70	130			
Cobalt	0.43	0.0060	0.5000	0.005930	85.0	70	130			
Manganese	0.90	0.0020	0.5000	0.5168	75.8	70	130			
Nickel	0.42	0.010	0.5000	0.006710	83.3	70	130			
Silver	0.10	0.0050	0.1000	0	104	70	130			
Vanadium	0.47	0.050	0.5000	0.01041	91.3	70	130			

Sample ID	1505005-001GMSD		SampType: MSD			TestCode: EPA Method 200.7: Metals				
Client ID:	SWMU 10-3-GW		Batch ID: 19025			RunNo: 25975				
Prep Date:	5/4/2015		Analysis Date: 5/5/2015			SeqNo: 770330		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.70	0.0020	0.5000	0.2804	83.2	70	130	2.20	20	
Beryllium	0.46	0.0020	0.5000	0.0009100	91.0	70	130	1.98	20	
Cadmium	0.49	0.0020	0.5000	0	98.8	70	130	1.70	20	
Chromium	0.44	0.0060	0.5000	0	89.0	70	130	1.75	20	
Cobalt	0.44	0.0060	0.5000	0.005930	86.6	70	130	1.86	20	
Manganese	0.92	0.0020	0.5000	0.5168	80.8	70	130	2.78	20	
Nickel	0.43	0.010	0.5000	0.006710	84.7	70	130	1.60	20	
Silver	0.11	0.0050	0.1000	0	106	70	130	1.69	20	
Vanadium	0.48	0.050	0.5000	0.01041	92.9	70	130	1.79	20	

Sample ID	MB		SampType: MBLK			TestCode: EPA Method 200.7: Metals				
Client ID:	PBW		Batch ID: R26030			RunNo: 26030				
Prep Date:			Analysis Date: 5/6/2015			SeqNo: 771646		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	0.00038	0.0020								J
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505005

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB		SampType: MBLK		TestCode: EPA Method 200.7: Metals					
Client ID:	PBW		Batch ID: R26030		RunNo: 26030					
Prep Date:			Analysis Date: 5/6/2015		SeqNo: 771646		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	ND	0.010								

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 200.7: Metals					
Client ID:	LCSW		Batch ID: R26030		RunNo: 26030					
Prep Date:			Analysis Date: 5/6/2015		SeqNo: 771647		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.7	85	115			
Beryllium	0.48	0.0020	0.5000	0	96.6	85	115			
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Chromium	0.48	0.0060	0.5000	0	95.1	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.0	85	115			
Iron	0.49	0.020	0.5000	0	98.8	85	115			
Manganese	0.48	0.0020	0.5000	0	96.8	85	115			
Nickel	0.47	0.010	0.5000	0	93.2	85	115			
Silver	0.096	0.0050	0.1000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.5	85	115			
Zinc	0.46	0.010	0.5000	0	92.0	85	115			

Sample ID	1505005-001GMS		SampType: MS		TestCode: EPA Method 200.7: Metals					
Client ID:	SWMU 10-3-GW		Batch ID: 19025		RunNo: 26030					
Prep Date:	5/4/2015		Analysis Date: 5/6/2015		SeqNo: 771691		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.41	0.010	0.5000	0.02308	77.0	70	130			

Sample ID	1505005-001GMSD		SampType: MSD		TestCode: EPA Method 200.7: Metals					
Client ID:	SWMU 10-3-GW		Batch ID: 19025		RunNo: 26030					
Prep Date:	5/4/2015		Analysis Date: 5/6/2015		SeqNo: 771692		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Zinc	0.42	0.010	0.5000	0.02308	79.1	70	130	2.63	20	

Sample ID	1505005-001GMS		SampType: MS		TestCode: EPA Method 200.7: Metals					
Client ID:	SWMU 10-3-GW		Batch ID: 19025		RunNo: 26030					
Prep Date:	5/4/2015		Analysis Date: 5/6/2015		SeqNo: 771694		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	3.1	0.10	0.5000	2.596	105	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505005

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	1505005-001GMSD	SampType:	MSD	TestCode:	EPA Method 200.7: Metals					
Client ID:	SWMU 10-3-GW	Batch ID:	19025	RunNo:	26030					
Prep Date:	5/4/2015	Analysis Date:	5/6/2015	SeqNo:	771695	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	3.1	0.10	0.5000	2.596	96.7	70	130	1.40	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505005

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R26030	RunNo:	26030					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	771648	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R26030	RunNo:	26030					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	771649	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	96.0	85	115			
Beryllium	0.49	0.0020	0.5000	0	97.5	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Chromium	0.49	0.0060	0.5000	0	97.7	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.2	85	115			
Iron	0.50	0.020	0.5000	0	101	85	115			
Manganese	0.49	0.0020	0.5000	0	97.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.7	85	115			
Silver	0.094	0.0050	0.1000	0	93.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.2	85	115			
Zinc	0.47	0.010	0.5000	0	93.8	85	115			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505005

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19025		SampType: MBLK		TestCode: EPA 200.8: Metals					
Client ID:	PBW		Batch ID: 19025		RunNo: 25987					
Prep Date:	5/4/2015		Analysis Date: 5/5/2015		SeqNo: 770247		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.0010								

Sample ID	MB-19025		SampType: MBLK		TestCode: EPA 200.8: Metals					
Client ID:	PBW		Batch ID: 19025		RunNo: 25987					
Prep Date:	5/4/2015		Analysis Date: 5/5/2015		SeqNo: 770248		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Metals					
Client ID:	LCSW		Batch ID: R26119		RunNo: 26119					
Prep Date:			Analysis Date: 5/11/2015		SeqNo: 774818		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Metals					
Client ID:	LCSW		Batch ID: R26119		RunNo: 26119					
Prep Date:			Analysis Date: 5/11/2015		SeqNo: 774819		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			

Sample ID	MB		SampType: MBLK		TestCode: EPA 200.8: Metals					
Client ID:	PBW		Batch ID: R26119		RunNo: 26119					
Prep Date:			Analysis Date: 5/11/2015		SeqNo: 774821		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								

Sample ID	MB		SampType: MBLK		TestCode: EPA 200.8: Metals					
Client ID:	PBW		Batch ID: R26119		RunNo: 26119					
Prep Date:			Analysis Date: 5/11/2015		SeqNo: 774822		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505005

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB		SampType: MBLK		TestCode: EPA 200.8: Metals					
Client ID:	PBW		Batch ID: R26119		RunNo: 26119					
Prep Date:			Analysis Date: 5/11/2015		SeqNo: 774822		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Metals					
Client ID:	LCSW		Batch ID: R26138		RunNo: 26138					
Prep Date:			Analysis Date: 5/12/2015		SeqNo: 775338		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.1	85	115			
Selenium	0.024	0.0010	0.02500	0	95.6	85	115			

Sample ID	MB		SampType: MBLK		TestCode: EPA 200.8: Metals					
Client ID:	PBW		Batch ID: R26138		RunNo: 26138					
Prep Date:			Analysis Date: 5/12/2015		SeqNo: 775342		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Metals					
Client ID:	LCSW		Batch ID: R26138		RunNo: 26138					
Prep Date:			Analysis Date: 5/12/2015		SeqNo: 775769		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.6	85	115			
Selenium	0.024	0.0010	0.02500	0	96.4	85	115			

Sample ID	MB		SampType: MBLK		TestCode: EPA 200.8: Metals					
Client ID:	PBW		Batch ID: R26138		RunNo: 26138					
Prep Date:			Analysis Date: 5/12/2015		SeqNo: 775770		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505005

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS		SampType: LCS			TestCode: EPA 200.8: Dissolved Metals				
Client ID:	LCSW		Batch ID: R26119			RunNo: 26119				
Prep Date:			Analysis Date: 5/11/2015			SeqNo: 774863		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R26119		RunNo: 26119					
Prep Date:			Analysis Date: 5/11/2015		SeqNo: 774864		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R26119			RunNo: 26119					
Prep Date:		Analysis Date: 5/11/2015			SeqNo: 774865		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R26119			RunNo: 26119					
Prep Date:		Analysis Date: 5/11/2015			SeqNo: 774866		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Lead	ND	0.00050								

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R26138		RunNo: 26138					
Prep Date:			Analysis Date: 5/12/2015		SeqNo: 775346		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.1	85	115			
Selenium	0.024	0.0010	0.02500	0	95.6	85	115			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R26138			RunNo: 26138					
Prep Date:		Analysis Date: 5/12/2015			SeqNo: 775348		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505005

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R26138	RunNo:	26138					
Prep Date:		Analysis Date:	5/12/2015	SeqNo:	775348	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R26138	RunNo:	26138					
Prep Date:		Analysis Date:	5/12/2015	SeqNo:	775777	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.025	0.0010	0.02500	0	98.6	85	115			
Selenium	0.024	0.0010	0.02500	0	96.4	85	115			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID:	R26138	RunNo:	26138					
Prep Date:		Analysis Date:	5/12/2015	SeqNo:	775778	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								
Selenium	ND	0.0010								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505005

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19047	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	19047	RunNo:	25969					
Prep Date:	5/5/2015	Analysis Date:	5/5/2015	SeqNo:	769643	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-19047	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	19047	RunNo:	25969					
Prep Date:	5/5/2015	Analysis Date:	5/5/2015	SeqNo:	769644	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	101	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505005

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R26026	RunNo:	26026					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	771570	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R26026	RunNo:	26026					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	771571	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.53	0.10	0.5000	0	106	90	110			
Chloride	4.9	0.50	5.000	0	97.9	90	110			
Sulfate	10	0.50	10.00	0	100	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505005

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-18985	SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW	Batch ID: 18985			RunNo: 25902					
Prep Date:	4/30/2015	Analysis Date: 5/1/2015			SeqNo: 767854		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.0		1.000		101	76.5	150			

Sample ID	LCS-18985		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 18985		RunNo: 25902					
Prep Date:	4/30/2015		Analysis Date: 5/1/2015		SeqNo: 767970		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.2	1.0	5.000	0	104	60.1	156			
Surr: DNOP	0.52		0.5000		105	76.5	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505005

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R25939	RunNo:	25939					
Prep Date:		Analysis Date:	5/4/2015	SeqNo:	768862	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		88.4	80	120			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R25939	RunNo:	25939					
Prep Date:		Analysis Date:	5/4/2015	SeqNo:	768863	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.2	80	120			
Surr: BFB	18		20.00		91.1	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505005

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5ml rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R26017			RunNo: 26017					
Prep Date:		Analysis Date: 5/6/2015			SeqNo: 771281		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505005

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5ml rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R26017	RunNo:	26017					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	771281	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		116	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.0	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	9.4		10.00		94.4	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	R26017	RunNo:	26017					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	771283	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	19	1.0	20.00	0	97.1	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505005

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R26017			RunNo: 26017					
Prep Date:		Analysis Date: 5/6/2015			SeqNo: 771283		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	25	1.0	20.00	0	123	75.6	144			
Trichloroethene (TCE)	20	1.0	20.00	0	100	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.0	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.9	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505005

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-18996	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	18996	RunNo:	25988					
Prep Date:	5/1/2015	Analysis Date:	5/5/2015	SeqNo:	770336	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505005

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-18996	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	18996	RunNo:	25988					
Prep Date:	5/1/2015	Analysis Date:	5/5/2015	SeqNo:	770336	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	170		200.0		86.6	14.9	111			
Surr: Phenol-d5	170		200.0		85.6	11.3	108			
Surr: 2,4,6-Tribromophenol	170		200.0		83.0	15.7	154			
Surr: Nitrobenzene-d5	86		100.0		86.0	47.8	106			
Surr: 2-Fluorobiphenyl	86		100.0		86.3	21.3	123			
Surr: 4-Terphenyl-d14	76		100.0		75.5	14.3	135			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505005

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	lcs-18996		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSW		Batch ID: 18996		RunNo: 25988					
Prep Date:	5/1/2015		Analysis Date: 5/5/2015		SeqNo: 770337		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	78	10	100.0	0	77.9	47.8	99.7			
4-Chloro-3-methylphenol	180	10	200.0	0	88.1	58.1	103			
2-Chlorophenol	150	10	200.0	0	73.7	49.5	96.8			
1,4-Dichlorobenzene	75	10	100.0	0	75.1	40.4	89.4			
2,4-Dinitrotoluene	71	10	100.0	0	71.0	38.6	91.3			
N-Nitrosodi-n-propylamine	81	10	100.0	0	81.3	53.9	95.6			
4-Nitrophenol	160	10	200.0	0	80.1	26.4	108			
Pentachlorophenol	140	20	200.0	0	72.3	36.5	86.6			
Phenol	160	10	200.0	0	81.8	29.3	108			
Pyrene	77	10	100.0	0	77.1	45.7	100			
1,2,4-Trichlorobenzene	77	10	100.0	0	77.0	39.3	94.5			
Surr: 2-Fluorophenol	160		200.0		80.1	14.9	111			
Surr: Phenol-d5	180		200.0		88.0	11.3	108			
Surr: 2,4,6-Tribromophenol	210		200.0		105	15.7	154			
Surr: Nitrobenzene-d5	82		100.0		82.0	47.8	106			
Surr: 2-Fluorobiphenyl	85		100.0		84.9	21.3	123			
Surr: 4-Terphenyl-d14	94		100.0		94.2	14.3	135			

Sample ID	lcsd-18996		SampType: LCSD		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS02		Batch ID: 18996		RunNo: 25988					
Prep Date:	5/1/2015		Analysis Date: 5/5/2015		SeqNo: 770338		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	88	10	100.0	0	87.9	47.8	99.7	12.0	28.2	
4-Chloro-3-methylphenol	210	10	200.0	0	103	58.1	103	15.2	24.4	
2-Chlorophenol	150	10	200.0	0	74.5	49.5	96.8	1.08	28.1	
1,4-Dichlorobenzene	72	10	100.0	0	72.0	40.4	89.4	4.19	31.2	
2,4-Dinitrotoluene	84	10	100.0	0	83.9	38.6	91.3	16.6	44.4	
N-Nitrosodi-n-propylamine	90	10	100.0	0	89.6	53.9	95.6	9.67	24.2	
4-Nitrophenol	190	10	200.0	0	95.2	26.4	108	17.2	36.6	
Pentachlorophenol	170	20	200.0	0	85.2	36.5	86.6	16.3	29.5	
Phenol	170	10	200.0	0	82.7	29.3	108	1.08	30	
Pyrene	89	10	100.0	0	89.0	45.7	100	14.3	31	
1,2,4-Trichlorobenzene	80	10	100.0	0	80.4	39.3	94.5	4.35	24	
Surr: 2-Fluorophenol	160		200.0		78.4	14.9	111	0	0	
Surr: Phenol-d5	180		200.0		88.9	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	220		200.0		112	15.7	154	0	0	
Surr: Nitrobenzene-d5	89		100.0		88.8	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	89		100.0		89.1	21.3	123	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505005

05-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Icsd-18996		SampType: LCSD		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS02		Batch ID: 18996		RunNo: 25988					
Prep Date:	5/1/2015		Analysis Date: 5/5/2015		SeqNo: 770338		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	97		100.0		96.6	14.3	135	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1505005

RcptNo: 1

Received by/date:



02/30/15

Logged By:

Lindsay Mangin

4/30/2015 3:50:00 PM



Completed By:

Lindsay Mangin

5/1/2015 6:42:31 AM



Reviewed By:

CS

05/01/15

Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☒

No ☐

Not Present ☐

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Client

Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°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 1 (unless noted)

Adjusted? NO

Checked by: 

Special Handling (if applicable)

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

Yes ☐

No ☐

NA ☒

Person Notified:

Date

By Whom:

Via:

☐

eMail

☐

Phone

☐

Fax

☐

In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			

WESTERN REFINING SOUTHWEST, INC.
GALLUP REFINERY - SWMU 10

METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES TOTAL
METALS ANALYSIS AND DISSOLVED METALS ANALYSIS

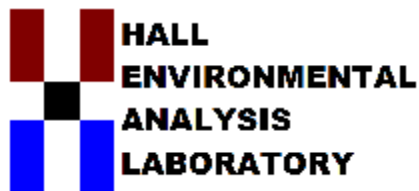
Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0



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

October 08, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10

OrderNo.: 1505047

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 5/1/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 16, 2015.

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, Inc.

Analytical Report

Lab Order 1505047

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB04

Project: SWMU 10

Collection Date: 5/1/2015 11:00:00 AM

Lab ID: 1505047-001

Matrix: AQUEOUS

Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH	
Diesel Range Organics (DRO)	ND	0.91	1.0		mg/L	1	5/4/2015 11:46:11 PM	19038
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/4/2015 11:46:11 PM	19038
Surr: DNOP	99.2	0	76.5-150		%REC	1	5/4/2015 11:46:11 PM	19038
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	5/4/2015 9:52:53 PM	R25939
Surr: BFB	91.2	0	80-120		%REC	1	5/4/2015 9:52:53 PM	R25939
EPA METHOD 300.0: ANIONS							Analyst: LGT	
Fluoride	ND	0.029	0.10		mg/L	1	5/4/2015 2:12:38 PM	R25965
Chloride	ND	0.13	0.50		mg/L	1	5/4/2015 2:12:38 PM	R25965
Sulfate	ND	0.11	0.50		mg/L	1	5/4/2015 2:12:38 PM	R25965
EPA METHOD 200.7: DISSOLVED METALS							Analyst: JLF	
Barium	ND	0.00095	0.0020		mg/L	1	5/7/2015 3:46:51 PM	R26052
Beryllium	ND	0.00031	0.0020		mg/L	1	5/7/2015 3:46:51 PM	R26052
Cadmium	ND	0.00097	0.0020		mg/L	1	5/7/2015 3:46:51 PM	R26052
Chromium	ND	0.0018	0.0060		mg/L	1	5/7/2015 3:46:51 PM	R26052
Cobalt	ND	0.0013	0.0060		mg/L	1	5/7/2015 3:46:51 PM	R26052
Iron	0.015	0.0073	0.020	J	mg/L	1	5/7/2015 3:46:51 PM	R26052
Manganese	0.00038	0.00027	0.0020	J	mg/L	1	5/7/2015 3:46:51 PM	R26052
Nickel	ND	0.0021	0.010		mg/L	1	5/7/2015 3:46:51 PM	R26052
Silver	ND	0.0012	0.0050		mg/L	1	5/13/2015 1:29:03 PM	R26155
Vanadium	ND	0.0015	0.050		mg/L	1	5/7/2015 3:46:51 PM	R26052
Zinc	0.038	0.0028	0.010		mg/L	1	5/7/2015 3:46:51 PM	R26052
EPA METHOD 200.7: METALS							Analyst: JLF	
Barium	ND	0.00095	0.0020		mg/L	1	5/5/2015 5:38:53 PM	R25986
Beryllium	ND	0.00031	0.0020		mg/L	1	5/5/2015 5:38:53 PM	R25986
Cadmium	ND	0.00097	0.0020		mg/L	1	5/6/2015 5:13:02 PM	R26030
Chromium	ND	0.0022	0.0060		mg/L	1	5/5/2015 5:38:53 PM	R25986
Cobalt	ND	0.0013	0.0060		mg/L	1	5/5/2015 5:38:53 PM	R25986
Iron	ND	0.0073	0.020		mg/L	1	5/5/2015 5:38:53 PM	R25986
Manganese	ND	0.0015	0.0020		mg/L	1	5/5/2015 5:38:53 PM	R25986
Nickel	ND	0.0023	0.010		mg/L	1	5/5/2015 5:38:53 PM	R25986
Silver	ND	0.0021	0.0050		mg/L	1	5/6/2015 5:13:02 PM	R26030
Vanadium	ND	0.0015	0.050		mg/L	1	5/5/2015 5:38:53 PM	R25986
Zinc	ND	0.0036	0.010		mg/L	1	5/5/2015 5:38:53 PM	R25986
EPA 200.8: DISSOLVED METALS							Analyst: DBD	
Antimony	0.00028	0.00014	0.0010	J	mg/L	1	5/11/2015 2:50:21 PM	R26119
Arsenic	ND	0.000065	0.0010		mg/L	1	5/11/2015 2:50:21 PM	R26119

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505047

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB04

Project: SWMU 10

Collection Date: 5/1/2015 11:00:00 AM

Lab ID: 1505047-001

Matrix: AQUEOUS

Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: DBD	
Lead	ND	0.000026	0.0010		mg/L	1	5/11/2015 2:50:21 PM	R26119
Selenium	ND	0.00019	0.0010		mg/L	1	5/11/2015 2:50:21 PM	R26119
EPA 200.8: METALS							Analyst: DBD	
Antimony	ND	0.00022	0.0010		mg/L	1	5/11/2015 1:45:48 PM	R26119
Arsenic	ND	0.00044	0.0010		mg/L	1	5/11/2015 1:45:48 PM	R26119
Lead	ND	0.000069	0.00050		mg/L	1	5/11/2015 1:45:48 PM	R26119
Selenium	ND	0.00019	0.0010		mg/L	1	5/11/2015 1:45:48 PM	R26119
EPA METHOD 245.1: MERCURY							Analyst: MED	
Mercury	ND	0.000059	0.00020		mg/L	1	5/11/2015 2:09:02 PM	19154
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	1.9	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Acenaphthylene	ND	1.9	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Aniline	ND	1.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Anthracene	ND	1.6	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Azobenzene	ND	2.0	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Benzoic acid	ND	1.0	20		µg/L	1	5/8/2015 5:02:20 PM	19045
Benzyl alcohol	ND	1.2	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/8/2015 5:02:20 PM	19045
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Carbazole	ND	1.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/8/2015 5:02:20 PM	19045
4-Chloroaniline	ND	1.9	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2-Chlorophenol	ND	1.2	10		µg/L	1	5/8/2015 5:02:20 PM	19045
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Chrysene	ND	2.2	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/8/2015 5:02:20 PM	19045

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505047

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB04

Project: SWMU 10

Collection Date: 5/1/2015 11:00:00 AM

Lab ID: 1505047-001

Matrix: AQUEOUS

Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Dibenzofuran	ND	1.9	10		µg/L	1	5/8/2015 5:02:20 PM	19045
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/8/2015 5:02:20 PM	19045
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/8/2015 5:02:20 PM	19045
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/8/2015 5:02:20 PM	19045
3,3'-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Diethyl phthalate	ND	1.7	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/8/2015 5:02:20 PM	19045
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/8/2015 5:02:20 PM	19045
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/8/2015 5:02:20 PM	19045
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/8/2015 5:02:20 PM	19045
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Fluoranthene	ND	1.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Fluorene	ND	1.7	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Hexachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Hexachloroethane	ND	1.6	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Isophorone	ND	2.0	10		µg/L	1	5/8/2015 5:02:20 PM	19045
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2-Methylphenol	ND	1.2	10		µg/L	1	5/8/2015 5:02:20 PM	19045
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/8/2015 5:02:20 PM	19045
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/8/2015 5:02:20 PM	19045
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Naphthalene	ND	1.8	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2-Nitroaniline	ND	1.8	10		µg/L	1	5/8/2015 5:02:20 PM	19045
3-Nitroaniline	ND	1.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
4-Nitroaniline	ND	1.2	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Nitrobenzene	ND	1.5	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2-Nitrophenol	ND	1.2	10		µg/L	1	5/8/2015 5:02:20 PM	19045
4-Nitrophenol	ND	1.4	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Pentachlorophenol	ND	1.1	20		µg/L	1	5/8/2015 5:02:20 PM	19045
Phenanthrene	ND	2.0	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Phenol	ND	1.1	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Pyrene	ND	2.3	10		µg/L	1	5/8/2015 5:02:20 PM	19045

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505047

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB04

Project: SWMU 10

Collection Date: 5/1/2015 11:00:00 AM

Lab ID: 1505047-001

Matrix: AQUEOUS

Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Pyridine	ND	1.7	10		µg/L	1	5/8/2015 5:02:20 PM	19045
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/8/2015 5:02:20 PM	19045
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/8/2015 5:02:20 PM	19045
Surr: 2-Fluorophenol	57.2	0	14.9-111		%REC	1	5/8/2015 5:02:20 PM	19045
Surr: Phenol-d5	52.8	0	11.3-108		%REC	1	5/8/2015 5:02:20 PM	19045
Surr: 2,4,6-Tribromophenol	84.0	0	15.7-154		%REC	1	5/8/2015 5:02:20 PM	19045
Surr: Nitrobenzene-d5	67.4	0	47.8-106		%REC	1	5/8/2015 5:02:20 PM	19045
Surr: 2-Fluorobiphenyl	81.5	0	21.3-123		%REC	1	5/8/2015 5:02:20 PM	19045
Surr: 4-Terphenyl-d14	104	0	14.3-135		%REC	1	5/8/2015 5:02:20 PM	19045
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Benzene	ND	0.065	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Toluene	0.11	0.11	1.0	J	µg/L	1	5/6/2015 3:57:40 PM	R26017
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Naphthalene	ND	0.22	2.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Acetone	3.1	0.94	10	J	µg/L	1	5/6/2015 3:57:40 PM	R26017
Bromobenzene	ND	0.11	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Bromoform	ND	0.16	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Bromomethane	ND	1.2	3.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
2-Butanone	ND	0.36	10		µg/L	1	5/6/2015 3:57:40 PM	R26017
Carbon disulfide	ND	0.67	10		µg/L	1	5/6/2015 3:57:40 PM	R26017
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Chloroethane	ND	0.10	2.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Chloroform	ND	0.21	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Chloromethane	ND	0.17	3.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/6/2015 3:57:40 PM	R26017

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB04

Project: SWMU 10

Collection Date: 5/1/2015 11:00:00 AM

Lab ID: 1505047-001

Matrix: AQUEOUS

Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Dibromomethane	ND	0.23	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
2-Hexanone	ND	0.48	10		µg/L	1	5/6/2015 3:57:40 PM	R26017
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/6/2015 3:57:40 PM	R26017
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Styrene	ND	0.11	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/6/2015 3:57:40 PM	R26017
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/6/2015 3:57:40 PM	R26017
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%REC	1	5/6/2015 3:57:40 PM	R26017
Surr: 4-Bromofluorobenzene	97.5	0	70-130		%REC	1	5/6/2015 3:57:40 PM	R26017

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505047

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB04

Project: SWMU 10

Collection Date: 5/1/2015 11:00:00 AM

Lab ID: 1505047-001

Matrix: AQUEOUS

Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Surr: Dibromofluoromethane	103	0	70-130		%REC	1	5/6/2015 3:57:40 PM	R26017
Surr: Toluene-d8	101	0	70-130		%REC	1	5/6/2015 3:57:40 PM	R26017

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		



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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 05, 2015
Description :
Sample ID : 1505047-001H SWMU 10 EB04
Collected By :
Collection Date : 05/01/15 11:00

ESC Sample # : L762964-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.0050	mg/l	4500CN E-2011	05/11/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 05/12/15 10:42 Printed: 05/12/15 10:43



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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L762964-02

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505047-001I SWMU 10 EB04

Project # :

Collected By :
Collection Date : 05/01/15 11:00

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	0.00051	0.00050	mg/l	3500Cr C-2011	05/11/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 05/12/15 10:42 Printed: 05/12/15 10:43



YOUR LAB OF CHOICE

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762964

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

Tax I.D. 62-0814289

Est. 1970

May 12, 2015

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Cyanide	< .005	mg/l			WG787731	05/11/15 16:24
Hexavalent Chromium	< .0005	mg/l			WG788013	05/11/15 12:19

Analyte	Units	Result	Duplicate		RPD	Limit	Ref Samp	Batch
			Duplicate					
Cyanide	mg/l	0.0	0.0	0.0	0.0	20	L763281-02	WG787731
Cyanide	mg/l	0.0	0.00700	NA		20	L763288-02	WG787731
Hexavalent Chromium	mg/l	0.000540	0.000510	5.71		20	L762964-02	WG788013
Hexavalent Chromium	mg/l	0.0	0.0	0.0		20	L763563-02	WG788013

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Cyanide	mg/l	.1	0.0990	99.0	90-110	WG787731
Hexavalent Chromium	mg/l	.002	0.00208	104.	90-110	WG788013

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Cyanide	mg/l	0.0988	0.0990	99.0	90-110	0.202	20	WG787731
Hexavalent Chromium	mg/l	0.00196	0.00208	98.0	90-110	5.94	20	WG788013

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Cyanide	mg/l	0.205	0.0	.2	100.	90-110	L762964-01	WG787731
Hexavalent Chromium	mg/l	0.0566	0.0	.05	110.*	90-110	L763173-02	WG788013

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Cyanide	mg/l	0.188	0.205	94.0	90-110	8.65	20	L762964-01	WG787731
Hexavalent Chromium	mg/l	0.0564	0.0566	113.*	90-110	0.354	20	L763173-02	WG788013

Batch number /Run number / Sample number cross reference

WG787731: R3036222: L762964-01
WG788013: R3036316: L762964-02

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505047

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB		SampType:	MBLK		TestCode:	EPA Method 200.7: Metals			
Client ID:	PBW		Batch ID:	R25986		RunNo:	25986			
Prep Date:			Analysis Date:	5/5/2015		SeqNo:	770111		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS		SampType:	LCS		TestCode:	EPA Method 200.7: Metals			
Client ID:	LCSW		Batch ID:	R25986		RunNo:	25986			
Prep Date:			Analysis Date:	5/5/2015		SeqNo:	770112		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	101	85	115			
Beryllium	0.53	0.0020	0.5000	0	106	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.8	85	115			
Iron	0.50	0.020	0.5000	0	100	85	115			
Manganese	0.48	0.0020	0.5000	0	96.3	85	115			
Nickel	0.51	0.010	0.5000	0	101	85	115			
Vanadium	0.52	0.050	0.5000	0	103	85	115			
Zinc	0.50	0.010	0.5000	0	100	85	115			

Sample ID	MB		SampType:	MBLK		TestCode:	EPA Method 200.7: Metals			
Client ID:	PBW		Batch ID:	R26030		RunNo:	26030			
Prep Date:			Analysis Date:	5/6/2015		SeqNo:	771646		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Silver	ND	0.0050								

Sample ID	LCS		SampType:	LCS		TestCode:	EPA Method 200.7: Metals			
Client ID:	LCSW		Batch ID:	R26030		RunNo:	26030			
Prep Date:			Analysis Date:	5/6/2015		SeqNo:	771647		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Silver	0.096	0.0050	0.1000	0	95.9	85	115			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505047

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Metals					
Client ID:	PBW	Batch ID:	R26052	RunNo:	26052					
Prep Date:		Analysis Date:	5/7/2015	SeqNo:	772430	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Metals					
Client ID:	LCSW	Batch ID:	R26052	RunNo:	26052					
Prep Date:		Analysis Date:	5/7/2015	SeqNo:	772431	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.4	85	115			
Beryllium	0.50	0.0020	0.5000	0	101	85	115			
Cadmium	0.52	0.0020	0.5000	0	105	85	115			
Chromium	0.50	0.0060	0.5000	0	99.4	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.9	85	115			
Iron	0.51	0.020	0.5000	0	101	85	115			
Manganese	0.50	0.0020	0.5000	0	99.0	85	115			
Nickel	0.49	0.010	0.5000	0	98.2	85	115			
Vanadium	0.50	0.050	0.5000	0	99.7	85	115			
Zinc	0.49	0.010	0.5000	0	97.8	85	115			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505047

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID: R25986			RunNo: 25986					
Prep Date:		Analysis Date: 5/5/2015			SeqNo: 770116		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW		Batch ID: R25986		RunNo: 25986					
Prep Date:			Analysis Date: 5/5/2015		SeqNo: 770117		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	102	85	115			
Beryllium	0.54	0.0020	0.5000	0	108	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Cobalt	0.50	0.0060	0.5000	0	101	85	115			
Iron	0.51	0.020	0.5000	0	102	85	115			
Manganese	0.49	0.0020	0.5000	0	97.5	85	115			
Nickel	0.52	0.010	0.5000	0	104	85	115			
Vanadium	0.52	0.050	0.5000	0	105	85	115			
Zinc	0.52	0.010	0.5000	0	104	85	115			

Sample ID	MB	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals						
Client ID:	PBW	Batch ID: R26030		RunNo: 26030						
Prep Date:		Analysis Date: 5/6/2015		SeqNo: 771648		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Silver	ND	0.0050								

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW		Batch ID: R26030		RunNo: 26030					
Prep Date:			Analysis Date: 5/6/2015		SeqNo: 771649		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Silver	0.094	0.0050	0.1000	0	93.9	85	115			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505047

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB		SampType:	MBLK		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	PBW		Batch ID:	R26052		RunNo:	26052			
Prep Date:			Analysis Date:	5/7/2015		SeqNo:	772432	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS		SampType:	LCS		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	LCSW		Batch ID:	R26052		RunNo:	26052			
Prep Date:			Analysis Date:	5/7/2015		SeqNo:	772433	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.6	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Cadmium	0.52	0.0020	0.5000	0	104	85	115			
Chromium	0.50	0.0060	0.5000	0	99.2	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.3	85	115			
Iron	0.51	0.020	0.5000	0	103	85	115			
Manganese	0.49	0.0020	0.5000	0	97.1	85	115			
Nickel	0.49	0.010	0.5000	0	97.2	85	115			
Vanadium	0.50	0.050	0.5000	0	99.2	85	115			
Zinc	0.49	0.010	0.5000	0	97.3	85	115			

Sample ID	MB		SampType:	MBLK		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	PBW		Batch ID:	R26155		RunNo:	26155			
Prep Date:			Analysis Date:	5/13/2015		SeqNo:	775993	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	ND	0.0050								

Sample ID	LCS		SampType:	LCS		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	LCSW		Batch ID:	R26155		RunNo:	26155			
Prep Date:			Analysis Date:	5/13/2015		SeqNo:	775994	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.092	0.0050	0.1000	0	92.2	85	115			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505047

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Metals					
Client ID:	LCSW		Batch ID: R26119		RunNo: 26119					
Prep Date:			Analysis Date: 5/11/2015		SeqNo: 774818		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.0	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	95.3	85	115			

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Metals					
Client ID:	LCSW		Batch ID: R26119		RunNo: 26119					
Prep Date:			Analysis Date: 5/11/2015		SeqNo: 774819		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.1	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	94.4	85	115			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Metals					
Client ID:	PBW	Batch ID: R26119			RunNo: 26119					
Prep Date:		Analysis Date: 5/11/2015			SeqNo: 774821		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Metals					
Client ID:	PBW	Batch ID: R26119			RunNo: 26119					
Prep Date:		Analysis Date: 5/11/2015			SeqNo: 774822		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505047

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R26119		RunNo: 26119					
Prep Date:			Analysis Date: 5/11/2015		SeqNo: 774863		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.0	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	95.3	85	115			

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R26119		RunNo: 26119					
Prep Date:			Analysis Date: 5/11/2015		SeqNo: 774864		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.1	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	94.4	85	115			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R26119			RunNo: 26119					
Prep Date:		Analysis Date: 5/11/2015			SeqNo: 774865		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R26119			RunNo: 26119					
Prep Date:		Analysis Date: 5/11/2015			SeqNo: 774866		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505047

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19154	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	19154	RunNo:	26107					
Prep Date:	5/11/2015	Analysis Date:	5/11/2015	SeqNo:	774364	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-19154	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	19154	RunNo:	26107					
Prep Date:	5/11/2015	Analysis Date:	5/11/2015	SeqNo:	774365	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	99.7	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505047

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R25965	RunNo:	25965					
Prep Date:		Analysis Date:	5/4/2015	SeqNo:	769526	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.100								
Chloride	ND	0.500								
Sulfate	ND	0.500								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R25965	RunNo:	25965					
Prep Date:		Analysis Date:	5/4/2015	SeqNo:	769527	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.526	0.100	0.5000	0	105	90	110			
Chloride	4.88	0.500	5.000	0	97.6	90	110			
Sulfate	9.91	0.500	10.00	0	99.1	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505047

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19038	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range						
Client ID:	PBW	Batch ID: 19038		RunNo: 25918						
Prep Date:	5/4/2015	Analysis Date: 5/4/2015		SeqNo: 768890			Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	0.92		1.000		92.1	76.5	150			

Sample ID	LCS-19038		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 19038		RunNo: 25918					
Prep Date:	5/4/2015		Analysis Date: 5/4/2015		SeqNo: 768891		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.3	1.0	5.000	0	105	60.1	156			
Surr: DNOP	0.49		0.5000		97.5	76.5	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505047

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R25939	RunNo:	25939					
Prep Date:		Analysis Date:	5/4/2015	SeqNo:	768862	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		88.4	80	120			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R25939	RunNo:	25939					
Prep Date:		Analysis Date:	5/4/2015	SeqNo:	768863	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.2	80	120			
Surr: BFB	18		20.00		91.1	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505047

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5ml rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R26017			RunNo: 26017					
Prep Date:		Analysis Date: 5/6/2015			SeqNo: 771281		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505047

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5ml rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R26017			RunNo: 26017					
Prep Date:		Analysis Date: 5/6/2015			SeqNo: 771281		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		116	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.0	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	9.4		10.00		94.4	70	130			

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R26017			RunNo: 26017					
Prep Date:		Analysis Date: 5/6/2015			SeqNo: 771283		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	19	1.0	20.00	0	97.1	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505047

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R26017			RunNo: 26017					
Prep Date:		Analysis Date: 5/6/2015			SeqNo: 771283		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	25	1.0	20.00	0	123	75.6	144			
Trichloroethene (TCE)	20	1.0	20.00	0	100	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.0	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.9	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505047

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19045	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	19045	RunNo:	26094					
Prep Date:	5/5/2015	Analysis Date:	5/8/2015	SeqNo:	773642	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505047

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19045	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	19045	RunNo:	26094					
Prep Date:	5/5/2015	Analysis Date:	5/8/2015	SeqNo:	773642	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	150		200.0		76.4	14.9	111			
Surr: Phenol-d5	170		200.0		83.9	11.3	108			
Surr: 2,4,6-Tribromophenol	210		200.0		103	15.7	154			
Surr: Nitrobenzene-d5	86		100.0		85.8	47.8	106			
Surr: 2-Fluorobiphenyl	91		100.0		91.2	21.3	123			
Surr: 4-Terphenyl-d14	78		100.0		78.4	14.3	135			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505047

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-19045		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSW		Batch ID: 19045		RunNo: 26094					
Prep Date:	5/5/2015		Analysis Date: 5/8/2015		SeqNo: 773643		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	62	10	100.0	0	62.4	47.8	99.7			
4-Chloro-3-methylphenol	140	10	200.0	0	70.3	58.1	103			
2-Chlorophenol	110	10	200.0	0	55.9	49.5	96.8			
1,4-Dichlorobenzene	57	10	100.0	0	57.1	40.4	89.4			
2,4-Dinitrotoluene	62	10	100.0	0	62.4	38.6	91.3			
N-Nitrosodi-n-propylamine	72	10	100.0	0	72.1	53.9	95.6			
4-Nitrophenol	160	10	200.0	0	78.9	26.4	108			
Pentachlorophenol	130	20	200.0	0	65.5	36.5	86.6			
Phenol	120	10	200.0	0	58.2	29.3	108			
Pyrene	70	10	100.0	0	70.3	45.7	100			
1,2,4-Trichlorobenzene	66	10	100.0	0	66.0	39.3	94.5			
Surr: 2-Fluorophenol	120		200.0		61.3	14.9	111			
Surr: Phenol-d5	130		200.0		65.4	11.3	108			
Surr: 2,4,6-Tribromophenol	160		200.0		79.5	15.7	154			
Surr: Nitrobenzene-d5	64		100.0		63.8	47.8	106			
Surr: 2-Fluorobiphenyl	70		100.0		70.5	21.3	123			
Surr: 4-Terphenyl-d14	66		100.0		66.5	14.3	135			

Sample ID	Icsd-19045		SampType: LCSD		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS02		Batch ID: 19045		RunNo: 26094					
Prep Date:	5/5/2015		Analysis Date: 5/8/2015		SeqNo: 773644		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	64	10	100.0	0	63.9	47.8	99.7	2.47	28.2	
4-Chloro-3-methylphenol	140	10	200.0	0	69.1	58.1	103	1.77	24.4	
2-Chlorophenol	120	10	200.0	0	58.0	49.5	96.8	3.65	28.1	
1,4-Dichlorobenzene	60	10	100.0	0	60.0	40.4	89.4	5.06	31.2	
2,4-Dinitrotoluene	60	10	100.0	0	60.4	38.6	91.3	3.26	44.4	
N-Nitrosodi-n-propylamine	68	10	100.0	0	68.4	53.9	95.6	5.27	24.2	
4-Nitrophenol	150	10	200.0	0	75.0	26.4	108	5.00	36.6	
Pentachlorophenol	150	20	200.0	0	73.3	36.5	86.6	11.3	29.5	
Phenol	120	10	200.0	0	62.1	29.3	108	6.48	30	
Pyrene	78	10	100.0	0	78.0	45.7	100	10.3	31	
1,2,4-Trichlorobenzene	69	10	100.0	0	68.6	39.3	94.5	3.80	24	
Surr: 2-Fluorophenol	130		200.0		63.3	14.9	111	0	0	
Surr: Phenol-d5	140		200.0		67.7	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	180		200.0		89.7	15.7	154	0	0	
Surr: Nitrobenzene-d5	61		100.0		61.2	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	67		100.0		67.1	21.3	123	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505047

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	lcscd-19045	SampType:	LCSD	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	LCSS02	Batch ID:	19045	RunNo:	26094					
Prep Date:	5/5/2015	Analysis Date:	5/8/2015	SeqNo:	773644	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	74		100.0		74.0	14.3	135	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1505047

RcptNo: 1

Received by/date:

AT 05/01/15

Logged By: Lindsay Mangin

5/1/2015 1:48:00 PM

[Signature]

Completed By: Lindsay Mangin

5/1/2015 3:04:46 PM

[Signature]

Reviewed By:

JA 05/04/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☒ No ☐ Not Present ☐
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Client

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°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, 1
 (<2 or >12 Unless noted)
 Adjusted? no
 Checked by: CS

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: For 300 analysis, Poured off from a 1L unpreserved amber. CS 05/04/15

18. Cooler Information

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

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

**METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES TOTAL
METALS ANALYSIS AND DISSOLVED METALS ANALYSIS**

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0



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

October 08, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10

OrderNo.: 1505048

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 5/1/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 16, 2015.

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, Inc.

Analytical Report

Lab Order 1505048

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB03

Project: SWMU 10

Collection Date: 4/30/2015 12:05:00 PM

Lab ID: 1505048-001

Matrix: AQUEOUS

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH	
Diesel Range Organics (DRO)	ND	0.91	1.0		mg/L	1	5/5/2015 12:13:09 AM	19038
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/5/2015 12:13:09 AM	19038
Surr: DNOP	96.5	0	76.5-150		%REC	1	5/5/2015 12:13:09 AM	19038
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	5/4/2015 10:22:08 PM	R25939
Surr: BFB	89.2	0	80-120		%REC	1	5/4/2015 10:22:08 PM	R25939
EPA METHOD 300.0: ANIONS							Analyst: LGT	
Fluoride	ND	0.029	0.10		mg/L	1	5/4/2015 2:37:28 PM	R25965
Chloride	ND	0.13	0.50		mg/L	1	5/4/2015 2:37:28 PM	R25965
Sulfate	ND	0.11	0.50		mg/L	1	5/4/2015 2:37:28 PM	R25965
EPA METHOD 200.7: DISSOLVED METALS							Analyst: JLF	
Barium	ND	0.00095	0.0020		mg/L	1	5/7/2015 3:48:54 PM	R26052
Beryllium	ND	0.00031	0.0020		mg/L	1	5/7/2015 3:48:54 PM	R26052
Cadmium	ND	0.00097	0.0020		mg/L	1	5/7/2015 3:48:54 PM	R26052
Chromium	ND	0.0018	0.0060		mg/L	1	5/7/2015 3:48:54 PM	R26052
Cobalt	ND	0.0013	0.0060		mg/L	1	5/7/2015 3:48:54 PM	R26052
Iron	0.0094	0.0073	0.020	J	mg/L	1	5/7/2015 3:48:54 PM	R26052
Manganese	0.00044	0.00027	0.0020	J	mg/L	1	5/7/2015 3:48:54 PM	R26052
Nickel	ND	0.0021	0.010		mg/L	1	5/7/2015 3:48:54 PM	R26052
Silver	0.0018	0.0012	0.0050	J	mg/L	1	5/13/2015 1:31:04 PM	R26155
Vanadium	ND	0.0015	0.050		mg/L	1	5/7/2015 3:48:54 PM	R26052
Zinc	0.078	0.0028	0.010		mg/L	1	5/7/2015 3:48:54 PM	R26052
EPA METHOD 200.7: METALS							Analyst: JLF	
Barium	ND	0.00095	0.0020		mg/L	1	5/5/2015 5:40:50 PM	R25986
Beryllium	ND	0.00031	0.0020		mg/L	1	5/5/2015 5:40:50 PM	R25986
Cadmium	ND	0.00097	0.0020		mg/L	1	5/6/2015 5:15:07 PM	R26030
Chromium	ND	0.0022	0.0060		mg/L	1	5/5/2015 5:40:50 PM	R25986
Cobalt	ND	0.0013	0.0060		mg/L	1	5/5/2015 5:40:50 PM	R25986
Iron	ND	0.0073	0.020		mg/L	1	5/5/2015 5:40:50 PM	R25986
Manganese	ND	0.0015	0.0020		mg/L	1	5/5/2015 5:40:50 PM	R25986
Nickel	ND	0.0023	0.010		mg/L	1	5/5/2015 5:40:50 PM	R25986
Silver	ND	0.0021	0.0050		mg/L	1	5/6/2015 5:15:07 PM	R26030
Vanadium	ND	0.0015	0.050		mg/L	1	5/5/2015 5:40:50 PM	R25986
Zinc	ND	0.0036	0.010		mg/L	1	5/5/2015 5:40:50 PM	R25986
EPA 200.8: DISSOLVED METALS							Analyst: DBD	
Antimony	0.00033	0.00014	0.0010	J	mg/L	1	5/11/2015 2:55:43 PM	R26119
Arsenic	ND	0.000065	0.0010		mg/L	1	5/11/2015 2:55:43 PM	R26119

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505048

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB03

Project: SWMU 10

Collection Date: 4/30/2015 12:05:00 PM

Lab ID: 1505048-001

Matrix: AQUEOUS

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: DBD	
Lead	0.000046	0.000026	0.0010	J	mg/L	1	5/11/2015 2:55:43 PM	R26119
Selenium	ND	0.00019	0.0010		mg/L	1	5/11/2015 2:55:43 PM	R26119
EPA 200.8: METALS							Analyst: DBD	
Antimony	ND	0.00022	0.0010		mg/L	1	5/11/2015 1:51:10 PM	R26119
Arsenic	ND	0.00044	0.0010		mg/L	1	5/11/2015 1:51:10 PM	R26119
Lead	ND	0.000069	0.00050		mg/L	1	5/11/2015 1:51:10 PM	R26119
Selenium	ND	0.00019	0.0010		mg/L	1	5/11/2015 1:51:10 PM	R26119
EPA METHOD 245.1: MERCURY							Analyst: MED	
Mercury	ND	0.000059	0.00020		mg/L	1	5/11/2015 2:10:49 PM	19154
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	1.9	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Acenaphthylene	ND	1.9	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Aniline	ND	1.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Anthracene	ND	1.6	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Azobenzene	ND	2.0	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Benzoic acid	ND	1.0	20		µg/L	1	5/8/2015 5:30:17 PM	19045
Benzyl alcohol	ND	1.2	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/8/2015 5:30:17 PM	19045
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Carbazole	ND	1.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/8/2015 5:30:17 PM	19045
4-Chloroaniline	ND	1.9	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2-Chlorophenol	ND	1.2	10		µg/L	1	5/8/2015 5:30:17 PM	19045
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Chrysene	ND	2.2	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Di-n-octyl phthalate	2.3	1.9	10	J	µg/L	1	5/8/2015 5:30:17 PM	19045
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/8/2015 5:30:17 PM	19045

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505048

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB03

Project: SWMU 10

Collection Date: 4/30/2015 12:05:00 PM

Lab ID: 1505048-001

Matrix: AQUEOUS

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Dibenzofuran	ND	1.9	10		µg/L	1	5/8/2015 5:30:17 PM	19045
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/8/2015 5:30:17 PM	19045
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/8/2015 5:30:17 PM	19045
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/8/2015 5:30:17 PM	19045
3,3'-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Diethyl phthalate	ND	1.7	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/8/2015 5:30:17 PM	19045
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/8/2015 5:30:17 PM	19045
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/8/2015 5:30:17 PM	19045
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/8/2015 5:30:17 PM	19045
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Fluoranthene	ND	1.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Fluorene	ND	1.7	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Hexachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Hexachloroethane	ND	1.6	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Isophorone	ND	2.0	10		µg/L	1	5/8/2015 5:30:17 PM	19045
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2-Methylphenol	ND	1.2	10		µg/L	1	5/8/2015 5:30:17 PM	19045
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/8/2015 5:30:17 PM	19045
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/8/2015 5:30:17 PM	19045
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Naphthalene	ND	1.8	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2-Nitroaniline	ND	1.8	10		µg/L	1	5/8/2015 5:30:17 PM	19045
3-Nitroaniline	ND	1.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
4-Nitroaniline	ND	1.2	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Nitrobenzene	ND	1.5	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2-Nitrophenol	ND	1.2	10		µg/L	1	5/8/2015 5:30:17 PM	19045
4-Nitrophenol	ND	1.4	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Pentachlorophenol	ND	1.1	20		µg/L	1	5/8/2015 5:30:17 PM	19045
Phenanthrene	ND	2.0	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Phenol	ND	1.1	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Pyrene	ND	2.3	10		µg/L	1	5/8/2015 5:30:17 PM	19045

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505048

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB03

Project: SWMU 10

Collection Date: 4/30/2015 12:05:00 PM

Lab ID: 1505048-001

Matrix: AQUEOUS

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Pyridine	ND	1.7	10		µg/L	1	5/8/2015 5:30:17 PM	19045
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/8/2015 5:30:17 PM	19045
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/8/2015 5:30:17 PM	19045
Surr: 2-Fluorophenol	67.4	0	14.9-111		%REC	1	5/8/2015 5:30:17 PM	19045
Surr: Phenol-d5	61.1	0	11.3-108		%REC	1	5/8/2015 5:30:17 PM	19045
Surr: 2,4,6-Tribromophenol	76.7	0	15.7-154		%REC	1	5/8/2015 5:30:17 PM	19045
Surr: Nitrobenzene-d5	83.3	0	47.8-106		%REC	1	5/8/2015 5:30:17 PM	19045
Surr: 2-Fluorobiphenyl	81.0	0	21.3-123		%REC	1	5/8/2015 5:30:17 PM	19045
Surr: 4-Terphenyl-d14	87.8	0	14.3-135		%REC	1	5/8/2015 5:30:17 PM	19045
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Benzene	ND	0.065	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Toluene	0.11	0.11	1.0	J	µg/L	1	5/6/2015 4:25:14 PM	R26017
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Naphthalene	ND	0.22	2.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Acetone	ND	0.94	10		µg/L	1	5/6/2015 4:25:14 PM	R26017
Bromobenzene	ND	0.11	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Bromoform	ND	0.16	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Bromomethane	ND	1.2	3.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
2-Butanone	ND	0.36	10		µg/L	1	5/6/2015 4:25:14 PM	R26017
Carbon disulfide	ND	0.67	10		µg/L	1	5/6/2015 4:25:14 PM	R26017
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Chloroethane	ND	0.10	2.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Chloroform	ND	0.21	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Chloromethane	ND	0.17	3.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/6/2015 4:25:14 PM	R26017

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505048

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB03

Project: SWMU 10

Collection Date: 4/30/2015 12:05:00 PM

Lab ID: 1505048-001

Matrix: AQUEOUS

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Dibromomethane	ND	0.23	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
2-Hexanone	ND	0.48	10		µg/L	1	5/6/2015 4:25:14 PM	R26017
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/6/2015 4:25:14 PM	R26017
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Styrene	ND	0.11	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/6/2015 4:25:14 PM	R26017
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/6/2015 4:25:14 PM	R26017
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%REC	1	5/6/2015 4:25:14 PM	R26017
Surr: 4-Bromofluorobenzene	97.7	0	70-130		%REC	1	5/6/2015 4:25:14 PM	R26017

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505048

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB03

Project: SWMU 10

Collection Date: 4/30/2015 12:05:00 PM

Lab ID: 1505048-001

Matrix: AQUEOUS

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Surr: Dibromofluoromethane	95.1	0	70-130		%REC	1	5/6/2015 4:25:14 PM	R26017
Surr: Toluene-d8	95.1	0	70-130		%REC	1	5/6/2015 4:25:14 PM	R26017

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		



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

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 05, 2015
Description :
Sample ID : 1505048-001H SWMU 10 EB03
Collected By :
Collection Date : 04/30/15 12:05

ESC Sample # : L762966-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.0050	mg/l	4500CN E-2011	05/11/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

The reported analytical results relate only to the sample submitted.

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

Reported: 05/12/15 08:18 Printed: 05/12/15 08:18



L.A.B. S.C.I.E.N.C.E.S.

YOUR LAB OF CHOICE

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762966

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

Tax I.D. 62-0814289

Est. 1970

May 12, 2015

Analyte	Result	Laboratory Blank		% Rec	Limit	Batch	Date Analyzed		
		Units							
Cyanide	< .005	mg/l				WG787731	05/11/15 16:24		
Analyte	Units	Result	Duplicate		RPD	Limit	Ref Samp	Batch	
			Duplicate						
Cyanide	mg/l	0.0	0.0	0.0	20	L763281-02	WG787731		
Cyanide	mg/l	0.0	0.00700	NA	20	L763288-02	WG787731		
Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch			
		Known Val	Result						
Cyanide	mg/l	.1	0.0990	99.0	90-110	WG787731			
Analyte	Units	Laboratory Control Sample Duplicate		%Rec	Limit	RPD	Limit	Batch	
		Result	Ref						
Cyanide	mg/l	0.0988	0.0990	99.0	90-110	0.202	20	WG787731	
Analyte	Units	Matrix Spike		TV	% Rec	Limit	Ref Samp	Batch	
		MS Res	Ref Res						
Cyanide	mg/l	0.205	0.0	.2	100.	90-110	L762964-01	WG787731	
Analyte	Units	Matrix Spike Duplicate		%Rec	Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref						
Cyanide	mg/l	0.188	0.205	94.0	90-110	8.65	20	L762964-01	WG787731

Batch number /Run number / Sample number cross reference

WG787731: R3036222: L762966-01

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505048

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB		SampType:	MBLK		TestCode:	EPA Method 200.7: Metals			
Client ID:	PBW		Batch ID:	R25986		RunNo:	25986			
Prep Date:			Analysis Date:	5/5/2015		SeqNo:	770111	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS		SampType:	LCS		TestCode:	EPA Method 200.7: Metals			
Client ID:	LCSW		Batch ID:	R25986		RunNo:	25986			
Prep Date:			Analysis Date:	5/5/2015		SeqNo:	770112	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	101	85	115			
Beryllium	0.53	0.0020	0.5000	0	106	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.8	85	115			
Iron	0.50	0.020	0.5000	0	100	85	115			
Manganese	0.48	0.0020	0.5000	0	96.3	85	115			
Nickel	0.51	0.010	0.5000	0	101	85	115			
Vanadium	0.52	0.050	0.5000	0	103	85	115			
Zinc	0.50	0.010	0.5000	0	100	85	115			

Sample ID	MB		SampType:	MBLK		TestCode:	EPA Method 200.7: Metals			
Client ID:	PBW		Batch ID:	R26030		RunNo:	26030			
Prep Date:			Analysis Date:	5/6/2015		SeqNo:	771646	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Silver	ND	0.0050								

Sample ID	LCS		SampType:	LCS		TestCode:	EPA Method 200.7: Metals			
Client ID:	LCSW		Batch ID:	R26030		RunNo:	26030			
Prep Date:			Analysis Date:	5/6/2015		SeqNo:	771647	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Silver	0.096	0.0050	0.1000	0	95.9	85	115			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505048

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Metals					
Client ID:	PBW	Batch ID:	R26052	RunNo:	26052					
Prep Date:		Analysis Date:	5/7/2015	SeqNo:	772430	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Metals					
Client ID:	LCSW	Batch ID:	R26052	RunNo:	26052					
Prep Date:		Analysis Date:	5/7/2015	SeqNo:	772431	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.4	85	115			
Beryllium	0.50	0.0020	0.5000	0	101	85	115			
Cadmium	0.52	0.0020	0.5000	0	105	85	115			
Chromium	0.50	0.0060	0.5000	0	99.4	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.9	85	115			
Iron	0.51	0.020	0.5000	0	101	85	115			
Manganese	0.50	0.0020	0.5000	0	99.0	85	115			
Nickel	0.49	0.010	0.5000	0	98.2	85	115			
Vanadium	0.50	0.050	0.5000	0	99.7	85	115			
Zinc	0.49	0.010	0.5000	0	97.8	85	115			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505048

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID: R25986			RunNo: 25986					
Prep Date:		Analysis Date: 5/5/2015			SeqNo: 770116		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW		Batch ID: R25986		RunNo: 25986					
Prep Date:			Analysis Date: 5/5/2015		SeqNo: 770117		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.51	0.0020	0.5000	0	102	85	115			
Beryllium	0.54	0.0020	0.5000	0	108	85	115			
Chromium	0.51	0.0060	0.5000	0	102	85	115			
Cobalt	0.50	0.0060	0.5000	0	101	85	115			
Iron	0.51	0.020	0.5000	0	102	85	115			
Manganese	0.49	0.0020	0.5000	0	97.5	85	115			
Nickel	0.52	0.010	0.5000	0	104	85	115			
Vanadium	0.52	0.050	0.5000	0	105	85	115			
Zinc	0.52	0.010	0.5000	0	104	85	115			

Sample ID	MB	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals						
Client ID:	PBW	Batch ID: R26030		RunNo: 26030						
Prep Date:		Analysis Date: 5/6/2015		SeqNo: 771648		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Silver	ND	0.0050								

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW		Batch ID: R26030		RunNo: 26030					
Prep Date:			Analysis Date: 5/6/2015		SeqNo: 771649		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Silver	0.094	0.0050	0.1000	0	93.9	85	115			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505048

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB		SampType:	MBLK		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	PBW		Batch ID:	R26052		RunNo:	26052			
Prep Date:			Analysis Date:	5/7/2015		SeqNo:	772432	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS		SampType:	LCS		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	LCSW		Batch ID:	R26052		RunNo:	26052			
Prep Date:			Analysis Date:	5/7/2015		SeqNo:	772433	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.49	0.0020	0.5000	0	97.6	85	115			
Beryllium	0.51	0.0020	0.5000	0	102	85	115			
Cadmium	0.52	0.0020	0.5000	0	104	85	115			
Chromium	0.50	0.0060	0.5000	0	99.2	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.3	85	115			
Iron	0.51	0.020	0.5000	0	103	85	115			
Manganese	0.49	0.0020	0.5000	0	97.1	85	115			
Nickel	0.49	0.010	0.5000	0	97.2	85	115			
Vanadium	0.50	0.050	0.5000	0	99.2	85	115			
Zinc	0.49	0.010	0.5000	0	97.3	85	115			

Sample ID	MB		SampType:	MBLK		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	PBW		Batch ID:	R26155		RunNo:	26155			
Prep Date:			Analysis Date:	5/13/2015		SeqNo:	775993	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	ND	0.0050								

Sample ID	LCS		SampType:	LCS		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	LCSW		Batch ID:	R26155		RunNo:	26155			
Prep Date:			Analysis Date:	5/13/2015		SeqNo:	775994	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.092	0.0050	0.1000	0	92.2	85	115			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505048

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS		SampType: LCS			TestCode: EPA 200.8: Metals				
Client ID:	LCSW		Batch ID: R26119			RunNo: 26119				
Prep Date:			Analysis Date: 5/11/2015			SeqNo: 774818		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.0	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	95.3	85	115			

Sample ID	LCS		SampType: LCS			TestCode: EPA 200.8: Metals				
Client ID:	LCSW		Batch ID: R26119			RunNo: 26119				
Prep Date:			Analysis Date: 5/11/2015			SeqNo: 774819		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.1	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	94.4	85	115			

Sample ID	MB		SampType: MBLK			TestCode: EPA 200.8: Metals				
Client ID:	PBW		Batch ID: R26119			RunNo: 26119				
Prep Date:			Analysis Date: 5/11/2015			SeqNo: 774821		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	MB		SampType: MBLK			TestCode: EPA 200.8: Metals				
Client ID:	PBW		Batch ID: R26119			RunNo: 26119				
Prep Date:			Analysis Date: 5/11/2015			SeqNo: 774822		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505048

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R26119		RunNo: 26119					
Prep Date:			Analysis Date: 5/11/2015		SeqNo: 774863		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	96.9	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.0	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	95.3	85	115			

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R26119		RunNo: 26119					
Prep Date:			Analysis Date: 5/11/2015		SeqNo: 774864		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.2	85	115			
Arsenic	0.024	0.0010	0.02500	0	96.1	85	115			
Lead	0.025	0.00050	0.02500	0	99.5	85	115			
Selenium	0.024	0.0010	0.02500	0	94.4	85	115			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R26119			RunNo: 26119					
Prep Date:		Analysis Date: 5/11/2015			SeqNo: 774865		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R26119			RunNo: 26119					
Prep Date:		Analysis Date: 5/11/2015			SeqNo: 774866		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505048

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19154	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	19154	RunNo:	26107					
Prep Date:	5/11/2015	Analysis Date:	5/11/2015	SeqNo:	774364	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-19154	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	19154	RunNo:	26107					
Prep Date:	5/11/2015	Analysis Date:	5/11/2015	SeqNo:	774365	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0050	0.00020	0.005000	0	99.7	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505048

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R25965	RunNo:	25965					
Prep Date:		Analysis Date:	5/4/2015	SeqNo:	769526	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.100								
Chloride	ND	0.500								
Sulfate	ND	0.500								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R25965	RunNo:	25965					
Prep Date:		Analysis Date:	5/4/2015	SeqNo:	769527	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.526	0.100	0.5000	0	105	90	110			
Chloride	4.88	0.500	5.000	0	97.6	90	110			
Sulfate	9.91	0.500	10.00	0	99.1	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505048

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19038	SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW	Batch ID: 19038			RunNo: 25918					
Prep Date:	5/4/2015	Analysis Date: 5/4/2015			SeqNo: 768890		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	0.92		1.000		92.1	76.5	150			

Sample ID	LCS-19038		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 19038		RunNo: 25918					
Prep Date:	5/4/2015		Analysis Date: 5/4/2015		SeqNo: 768891		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.3	1.0	5.000	0	105	60.1	156			
Surr: DNOP	0.49		0.5000		97.5	76.5	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505048

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R25939	RunNo:	25939					
Prep Date:		Analysis Date:	5/4/2015	SeqNo:	768862	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		88.4	80	120			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R25939	RunNo:	25939					
Prep Date:		Analysis Date:	5/4/2015	SeqNo:	768863	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.2	80	120			
Surr: BFB	18		20.00		91.1	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505048

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5ml rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R26017			RunNo: 26017					
Prep Date:		Analysis Date: 5/6/2015			SeqNo: 771281	Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505048

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5ml rb	SampType: MBLK				TestCode: EPA Method 8260B: VOLATILES				
Client ID:	PBW	Batch ID: R26017				RunNo: 26017				
Prep Date:		Analysis Date: 5/6/2015				SeqNo: 771281		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	12		10.00		116	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.0	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	9.4		10.00		94.4	70	130			

Sample ID	100ng lcs	SampType: LCS				TestCode: EPA Method 8260B: VOLATILES				
Client ID:	LCSW	Batch ID: R26017				RunNo: 26017				
Prep Date:		Analysis Date: 5/6/2015				SeqNo: 771283		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	107	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	19	1.0	20.00	0	97.1	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505048

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R26017			RunNo: 26017					
Prep Date:		Analysis Date: 5/6/2015			SeqNo: 771283		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	25	1.0	20.00	0	123	75.6	144			
Trichloroethene (TCE)	20	1.0	20.00	0	100	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		98.0	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.9	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505048

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19045	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	19045	RunNo:	26094					
Prep Date:	5/5/2015	Analysis Date:	5/8/2015	SeqNo:	773642	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505048

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19045	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	19045	RunNo:	26094					
Prep Date:	5/5/2015	Analysis Date:	5/8/2015	SeqNo:	773642	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	150		200.0		76.4	14.9	111			
Surr: Phenol-d5	170		200.0		83.9	11.3	108			
Surr: 2,4,6-Tribromophenol	210		200.0		103	15.7	154			
Surr: Nitrobenzene-d5	86		100.0		85.8	47.8	106			
Surr: 2-Fluorobiphenyl	91		100.0		91.2	21.3	123			
Surr: 4-Terphenyl-d14	78		100.0		78.4	14.3	135			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505048

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-19045		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSW		Batch ID: 19045		RunNo: 26094					
Prep Date:	5/5/2015		Analysis Date: 5/8/2015		SeqNo: 773643		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	62	10	100.0	0	62.4	47.8	99.7			
4-Chloro-3-methylphenol	140	10	200.0	0	70.3	58.1	103			
2-Chlorophenol	110	10	200.0	0	55.9	49.5	96.8			
1,4-Dichlorobenzene	57	10	100.0	0	57.1	40.4	89.4			
2,4-Dinitrotoluene	62	10	100.0	0	62.4	38.6	91.3			
N-Nitrosodi-n-propylamine	72	10	100.0	0	72.1	53.9	95.6			
4-Nitrophenol	160	10	200.0	0	78.9	26.4	108			
Pentachlorophenol	130	20	200.0	0	65.5	36.5	86.6			
Phenol	120	10	200.0	0	58.2	29.3	108			
Pyrene	70	10	100.0	0	70.3	45.7	100			
1,2,4-Trichlorobenzene	66	10	100.0	0	66.0	39.3	94.5			
Surr: 2-Fluorophenol	120		200.0		61.3	14.9	111			
Surr: Phenol-d5	130		200.0		65.4	11.3	108			
Surr: 2,4,6-Tribromophenol	160		200.0		79.5	15.7	154			
Surr: Nitrobenzene-d5	64		100.0		63.8	47.8	106			
Surr: 2-Fluorobiphenyl	70		100.0		70.5	21.3	123			
Surr: 4-Terphenyl-d14	66		100.0		66.5	14.3	135			

Sample ID	Icsd-19045		SampType: LCSD		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS02		Batch ID: 19045		RunNo: 26094					
Prep Date:	5/5/2015		Analysis Date: 5/8/2015		SeqNo: 773644		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	64	10	100.0	0	63.9	47.8	99.7	2.47	28.2	
4-Chloro-3-methylphenol	140	10	200.0	0	69.1	58.1	103	1.77	24.4	
2-Chlorophenol	120	10	200.0	0	58.0	49.5	96.8	3.65	28.1	
1,4-Dichlorobenzene	60	10	100.0	0	60.0	40.4	89.4	5.06	31.2	
2,4-Dinitrotoluene	60	10	100.0	0	60.4	38.6	91.3	3.26	44.4	
N-Nitrosodi-n-propylamine	68	10	100.0	0	68.4	53.9	95.6	5.27	24.2	
4-Nitrophenol	150	10	200.0	0	75.0	26.4	108	5.00	36.6	
Pentachlorophenol	150	20	200.0	0	73.3	36.5	86.6	11.3	29.5	
Phenol	120	10	200.0	0	62.1	29.3	108	6.48	30	
Pyrene	78	10	100.0	0	78.0	45.7	100	10.3	31	
1,2,4-Trichlorobenzene	69	10	100.0	0	68.6	39.3	94.5	3.80	24	
Surr: 2-Fluorophenol	130		200.0		63.3	14.9	111	0	0	
Surr: Phenol-d5	140		200.0		67.7	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	180		200.0		89.7	15.7	154	0	0	
Surr: Nitrobenzene-d5	61		100.0		61.2	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	67		100.0		67.1	21.3	123	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505048

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	lcscd-19045	SampType:	LCSD	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	LCSS02	Batch ID:	19045	RunNo:	26094					
Prep Date:	5/5/2015	Analysis Date:	5/8/2015	SeqNo:	773644	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	74		100.0		74.0	14.3	135	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit



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

Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1505048

RcptNo: 1

Received by/date:

AT

05/01/15

Logged By: Lindsay Mangin

5/1/2015 1:50:00 PM

Completed By: Lindsay Mangin

5/2/2015 9:43:07 AM

Reviewed By:

Ja

05/04/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☒ No ☐ Not Present ☐
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Client

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°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, 1
(<2 or >12 unless noted)
Adjusted? No
Checked by: CS

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: For 300 analysis, poured off from a 1 L unpreserved amber. CS 05/04/15

18. Cooler Information

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

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

**METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES TOTAL
METALS ANALYSIS AND DISSOLVED METALS ANALYSIS**

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0



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

October 08, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10

OrderNo.: 1505057

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 7 sample(s) on 5/1/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 16, 2015.

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', with a stylized flourish at the end.

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#: 1505057
Date: 10/8/2015

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding EPA Method 8015 and 8270:
The surrogates with "S" flags are unrecoverable due to sample dilution and matrix interferences.

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505057

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-9 (2-4')

Project: SWMU 10

Collection Date: 4/30/2015 1:50:00 PM

Lab ID: 1505057-001

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	210	5.4	9.7		mg/Kg-dr	1	5/7/2015 6:01:28 PM	19001
Motor Oil Range Organics (MRO)	170	48	48		mg/Kg-dr	1	5/7/2015 6:01:28 PM	19001
Surr: DNOP	112	0	57.9-140		%REC	1	5/7/2015 6:01:28 PM	19001
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	14	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.070	0.016	0.18	J	mg/Kg-dr	5	5/29/2015 1:09:09 PM	19445
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Arsenic	1.8	0.34	2.9	J	mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Barium	220	0.035	0.12		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Beryllium	0.77	0.0086	0.17		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Chromium	17	0.070	0.35		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Cobalt	4.6	0.044	0.35		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Iron	12000	70	290		mg/Kg-dr	100	5/7/2015 11:25:45 AM	19081
Lead	4.8	0.13	0.29		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Manganese	180	0.068	0.12		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Nickel	7.7	0.15	0.58		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Vanadium	18	0.039	2.9		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
Zinc	24	0.75	2.9		mg/Kg-dr	1	5/7/2015 2:20:11 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	1.2	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Acenaphthylene	ND	1.0	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Aniline	ND	0.87	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Anthracene	ND	0.85	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Azobenzene	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Benz(a)anthracene	ND	0.78	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Benzo(a)pyrene	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Benzo(b)fluoranthene	ND	0.95	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Benzo(g,h,i)perylene	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Benzo(k)fluoranthene	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Benzoic acid	ND	0.57	5.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Benzyl alcohol	ND	0.89	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Bis(2-chloroethoxy)methane	ND	0.95	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-9 (2-4')

Project: SWMU 10

Collection Date: 4/30/2015 1:50:00 PM

Lab ID: 1505057-001

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Bis(2-chloroethyl)ether	ND	0.99	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Bis(2-chloroisopropyl)ether	ND	0.76	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Bis(2-ethylhexyl)phthalate	1.5	1.1	5.0	J	mg/Kg	1	5/6/2015 6:43:30 PM	19054
4-Bromophenyl phenyl ether	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Butyl benzyl phthalate	ND	1.2	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Carbazole	ND	0.93	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
4-Chloro-3-methylphenol	ND	0.99	5.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
4-Chloroaniline	ND	0.92	5.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2-Chloronaphthalene	ND	1.1	2.5		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2-Chlorophenol	ND	0.93	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
4-Chlorophenyl phenyl ether	ND	1.5	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Chrysene	ND	1.0	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Di-n-butyl phthalate	ND	1.1	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Di-n-octyl phthalate	ND	1.1	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Dibenz(a,h)anthracene	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Dibenzofuran	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
1,2-Dichlorobenzene	ND	0.95	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
1,3-Dichlorobenzene	ND	0.89	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
1,4-Dichlorobenzene	ND	1.0	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
3,3'-Dichlorobenzidine	ND	0.77	2.5		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Diethyl phthalate	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Dimethyl phthalate	ND	0.92	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2,4-Dichlorophenol	ND	1.0	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2,4-Dimethylphenol	ND	0.78	3.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
4,6-Dinitro-2-methylphenol	ND	0.54	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2,4-Dinitrophenol	ND	0.41	5.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2,4-Dinitrotoluene	ND	0.89	5.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2,6-Dinitrotoluene	ND	1.1	5.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Fluoranthene	ND	1.2	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Fluorene	ND	1.4	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Hexachlorobenzene	ND	0.94	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Hexachlorobutadiene	ND	0.99	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Hexachlorocyclopentadiene	ND	0.69	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Hexachloroethane	ND	0.89	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Indeno(1,2,3-cd)pyrene	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Isophorone	ND	1.1	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
1-Methylnaphthalene	ND	0.92	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2-Methylnaphthalene	ND	0.91	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2-Methylphenol	ND	1.0	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 1505057

Date Reported: 10/8/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-9 (2-4')

Project: SWMU 10

Collection Date: 4/30/2015 1:50:00 PM

Lab ID: 1505057-001

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
3+4-Methylphenol	ND	1.0	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
N-Nitrosodi-n-propylamine	ND	1.0	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
N-Nitrosodiphenylamine	ND	0.89	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Naphthalene	ND	0.95	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2-Nitroaniline	ND	1.1	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
3-Nitroaniline	ND	0.96	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
4-Nitroaniline	ND	0.90	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Nitrobenzene	ND	1.0	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2-Nitrophenol	ND	0.90	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
4-Nitrophenol	ND	0.86	2.5		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Pentachlorophenol	ND	0.62	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Phenanthrene	ND	1.0	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Phenol	ND	0.89	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Pyrene	ND	1.3	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Pyridine	ND	0.84	4.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
1,2,4-Trichlorobenzene	ND	1.0	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2,4,5-Trichlorophenol	ND	1.2	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
2,4,6-Trichlorophenol	ND	1.2	2.0		mg/Kg	1	5/6/2015 6:43:30 PM	19054
Surr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/6/2015 6:43:30 PM	19054
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/6/2015 6:43:30 PM	19054
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/6/2015 6:43:30 PM	19054
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/6/2015 6:43:30 PM	19054
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/6/2015 6:43:30 PM	19054
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/6/2015 6:43:30 PM	19054
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.000788	0.000395	0.00175	J	mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Toluene	0.000797	0.000182	0.00175	J	mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Ethylbenzene	ND	0.000295	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Xylenes, Total	ND	0.00104	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000735	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,2,4-Trimethylbenzene	ND	0.000458	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,3,5-Trimethylbenzene	ND	0.000307	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000469	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000209	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Naphthalene	ND	0.000572	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1-Methylnaphthalene	ND	0.000688	0.00350		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
2-Methylnaphthalene	ND	0.000685	0.00350		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Acetone	0.0184	0.00109	0.00876		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Bromobenzene	ND	0.000487	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 1505057

Date Reported: 10/8/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-9 (2-4')

Project: SWMU 10

Collection Date: 4/30/2015 1:50:00 PM

Lab ID: 1505057-001

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Bromodichloromethane	ND	0.000237	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Bromoform	ND	0.000454	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Bromomethane	ND	0.00104	0.00263		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
2-Butanone	0.00234	0.000561	0.00876	J	mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Carbon tetrachloride	ND	0.000317	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Chlorobenzene	ND	0.000178	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Chloroethane	ND	0.00175	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Chloroform	ND	0.000361	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Chloromethane	ND	0.000207	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
2-Chlorotoluene	ND	0.000342	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Carbon disulfide	ND	0.000793	0.00876		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
4-Chlorotoluene	ND	0.000337	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
cis-1,2-DCE	ND	0.000463	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
cis-1,3-Dichloropropene	ND	0.00175	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000515	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Dibromochloromethane	ND	0.000196	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Dibromomethane	ND	0.000994	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,2-Dichlorobenzene	ND	0.000389	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,3-Dichlorobenzene	ND	0.000297	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,4-Dichlorobenzene	ND	0.000275	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Dichlorodifluoromethane	ND	0.000715	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,1-Dichloroethane	ND	0.000409	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,1-Dichloroethene	ND	0.000292	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,2-Dichloropropane	ND	0.000374	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,3-Dichloropropane	ND	0.000273	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
2,2-Dichloropropane	ND	0.000304	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,1-Dichloropropene	ND	0.000321	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Hexachlorobutadiene	ND	0.000353	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Isopropylbenzene	ND	0.000406	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
4-Isopropyltoluene	ND	0.000680	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Methylene chloride	0.000438	0.000433	0.00175	J	mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
n-Butylbenzene	ND	0.000719	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
2-Hexanone	ND	0.000364	0.00876		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
n-Propylbenzene	ND	0.000328	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
sec-Butylbenzene	ND	0.000442	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Styrene	ND	0.000290	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
4-Methyl-2-pentanone	ND	0.000740	0.00876		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
tert-Butylbenzene	ND	0.000269	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000285	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505057

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-9 (2-4')

Project: SWMU 10

Collection Date: 4/30/2015 1:50:00 PM

Lab ID: 1505057-001

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
1,1,2,2-Tetrachloroethane	ND	0.000385	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Tetrachloroethene (PCE)	ND	0.000347	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
trans-1,2-DCE	ND	0.000283	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
trans-1,3-Dichloropropene	ND	0.000229	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,2,3-Trichlorobenzene	ND	0.000641	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,2,4-Trichlorobenzene	ND	0.000656	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,1,1-Trichloroethane	ND	0.000249	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,1,2-Trichloroethane	ND	0.00175	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Trichloroethene (TCE)	ND	0.000348	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Trichlorofluoromethane	ND	0.000354	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
1,2,3-Trichloropropane	ND	0.000615	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Vinyl chloride	ND	0.000200	0.00175		mg/Kg-dr	1	5/6/2015 8:48:41 PM	19032
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%REC	1	5/6/2015 8:48:41 PM	19032
Surr: 4-Bromofluorobenzene	105	0	70-130		%REC	1	5/6/2015 8:48:41 PM	19032
Surr: Dibromofluoromethane	105	0	70-130		%REC	1	5/6/2015 8:48:41 PM	19032
Surr: Toluene-d8	86.8	0	70-130		%REC	1	5/6/2015 8:48:41 PM	19032
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.83	3.3		mg/Kg-dr	1	5/6/2015 1:56:09 AM	R25982
Surr: BFB	109	0	67.4-150		%REC	1	5/6/2015 1:56:09 AM	R25982

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505057

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-9 (4-6')

Project: SWMU 10

Collection Date: 4/30/2015 2:00:00 PM

Lab ID: 1505057-002

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	300	6.7	12		mg/Kg-dr	1	5/5/2015 8:10:49 PM	19001
Motor Oil Range Organics (MRO)	120	61	61		mg/Kg-dr	1	5/5/2015 8:10:49 PM	19001
Surr: DNOP	107	0	57.9-140		%REC	1	5/5/2015 8:10:49 PM	19001
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	17	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.0086	0.0033	0.037	J	mg/Kg-dr	1	5/14/2015 3:29:22 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.6	3.0		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Arsenic	1.1	0.70	5.9	J	mg/Kg-dr	2	5/7/2015 2:25:59 PM	19081
Barium	250	0.035	0.12		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Beryllium	0.94	0.0088	0.18		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Chromium	14	0.071	0.36		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Cobalt	5.3	0.045	0.36		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Iron	16000	72	300		mg/Kg-dr	100	5/7/2015 11:27:07 AM	19081
Lead	3.2	0.13	0.30		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Manganese	290	0.070	0.12		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Nickel	10	0.15	0.59		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Selenium	ND	1.8	3.0		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Silver	ND	0.035	0.30		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Vanadium	19	0.040	3.0		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
Zinc	32	0.76	3.0		mg/Kg-dr	1	5/7/2015 2:24:31 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	1.2	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Acenaphthylene	ND	1.0	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Aniline	ND	0.86	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Anthracene	ND	0.84	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Azobenzene	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Benz(a)anthracene	ND	0.78	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Benzo(a)pyrene	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Benzo(b)fluoranthene	ND	0.94	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Benzo(g,h,i)perylene	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Benzo(k)fluoranthene	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Benzoic acid	ND	0.57	5.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Benzyl alcohol	ND	0.88	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Bis(2-chloroethoxy)methane	ND	0.95	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-9 (4-6')

Project: SWMU 10

Collection Date: 4/30/2015 2:00:00 PM

Lab ID: 1505057-002

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Bis(2-chloroethyl)ether	ND	0.98	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Bis(2-chloroisopropyl)ether	ND	0.76	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Bis(2-ethylhexyl)phthalate	ND	1.1	5.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
4-Bromophenyl phenyl ether	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Butyl benzyl phthalate	ND	1.2	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Carbazole	ND	0.93	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
4-Chloro-3-methylphenol	ND	0.99	5.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
4-Chloroaniline	ND	0.92	5.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2-Chloronaphthalene	ND	1.1	2.5		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2-Chlorophenol	ND	0.93	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
4-Chlorophenyl phenyl ether	ND	1.5	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Chrysene	ND	1.0	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Di-n-butyl phthalate	ND	1.1	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Di-n-octyl phthalate	ND	1.1	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Dibenz(a,h)anthracene	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Dibenzofuran	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
1,2-Dichlorobenzene	ND	0.95	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
1,3-Dichlorobenzene	ND	0.88	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
1,4-Dichlorobenzene	ND	1.0	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
3,3'-Dichlorobenzidine	ND	0.76	2.5		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Diethyl phthalate	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Dimethyl phthalate	ND	0.91	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2,4-Dichlorophenol	ND	0.99	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2,4-Dimethylphenol	ND	0.78	3.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
4,6-Dinitro-2-methylphenol	ND	0.54	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2,4-Dinitrophenol	ND	0.41	5.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2,4-Dinitrotoluene	ND	0.89	5.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2,6-Dinitrotoluene	ND	1.1	5.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Fluoranthene	ND	1.2	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Fluorene	ND	1.4	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Hexachlorobenzene	ND	0.94	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Hexachlorobutadiene	ND	0.98	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Hexachlorocyclopentadiene	ND	0.69	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Hexachloroethane	ND	0.88	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Indeno(1,2,3-cd)pyrene	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Isophorone	ND	1.1	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
1-Methylnaphthalene	1.1	0.92	2.0	J	mg/Kg	1	5/6/2015 7:11:27 PM	19054
2-Methylnaphthalene	1.0	0.91	2.0	J	mg/Kg	1	5/6/2015 7:11:27 PM	19054
2-Methylphenol	ND	1.0	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505057

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-9 (4-6')

Project: SWMU 10

Collection Date: 4/30/2015 2:00:00 PM

Lab ID: 1505057-002

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
3+4-Methylphenol	ND	1.0	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
N-Nitrosodi-n-propylamine	ND	1.0	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
N-Nitrosodiphenylamine	ND	0.89	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Naphthalene	ND	0.95	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2-Nitroaniline	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
3-Nitroaniline	ND	0.96	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
4-Nitroaniline	ND	0.89	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Nitrobenzene	ND	1.0	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2-Nitrophenol	ND	0.89	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
4-Nitrophenol	ND	0.86	2.5		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Pentachlorophenol	ND	0.62	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Phenanthrene	ND	1.0	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Phenol	ND	0.89	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Pyrene	ND	1.3	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Pyridine	ND	0.83	4.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
1,2,4-Trichlorobenzene	ND	1.0	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2,4,5-Trichlorophenol	ND	1.2	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
2,4,6-Trichlorophenol	ND	1.1	2.0		mg/Kg	1	5/6/2015 7:11:27 PM	19054
Surr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/6/2015 7:11:27 PM	19054
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/6/2015 7:11:27 PM	19054
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/6/2015 7:11:27 PM	19054
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/6/2015 7:11:27 PM	19054
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/6/2015 7:11:27 PM	19054
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/6/2015 7:11:27 PM	19054
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	ND	0.021	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Toluene	ND	0.017	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Ethylbenzene	0.040	0.013	0.14	J	mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Methyl tert-butyl ether (MTBE)	ND	0.020	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,2,4-Trimethylbenzene	0.42	0.0072	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,3,5-Trimethylbenzene	0.12	0.0095	0.14	J	mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,2-Dichloroethane (EDC)	ND	0.058	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,2-Dibromoethane (EDB)	ND	0.012	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Naphthalene	0.32	0.034	0.29		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1-Methylnaphthalene	1.1	0.087	0.58		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
2-Methylnaphthalene	1.5	0.095	0.58		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Acetone	ND	0.11	2.2		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Bromobenzene	ND	0.011	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Bromodichloromethane	ND	0.012	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-9 (4-6')

Project: SWMU 10

Collection Date: 4/30/2015 2:00:00 PM

Lab ID: 1505057-002

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Bromoform	ND	0.012	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Bromomethane	ND	0.028	0.43		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
2-Butanone	ND	0.093	1.4		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Carbon disulfide	ND	0.10	1.4		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Carbon tetrachloride	ND	0.014	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Chlorobenzene	ND	0.011	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Chloroethane	ND	0.11	0.29		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Chloroform	ND	0.015	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Chloromethane	ND	0.017	0.43		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
2-Chlorotoluene	ND	0.016	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
4-Chlorotoluene	ND	0.011	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
cis-1,2-DCE	ND	0.018	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
cis-1,3-Dichloropropene	ND	0.010	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,2-Dibromo-3-chloropropane	ND	0.025	0.29		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Dibromochloromethane	ND	0.011	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Dibromomethane	ND	0.015	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,2-Dichlorobenzene	ND	0.0087	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,3-Dichlorobenzene	ND	0.017	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,4-Dichlorobenzene	ND	0.018	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Dichlorodifluoromethane	ND	0.036	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,1-Dichloroethane	ND	0.058	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,1-Dichloroethene	ND	0.010	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,2-Dichloropropane	ND	0.0081	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,3-Dichloropropane	ND	0.020	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
2,2-Dichloropropane	ND	0.021	0.29		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,1-Dichloropropene	ND	0.022	0.29		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Hexachlorobutadiene	ND	0.020	0.29		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
2-Hexanone	ND	0.036	1.4		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Isopropylbenzene	0.016	0.012	0.14	J	mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
4-Isopropyltoluene	ND	0.010	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
4-Methyl-2-pentanone	ND	0.025	1.4		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Methylene chloride	ND	0.058	0.43		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
n-Butylbenzene	0.065	0.012	0.43	J	mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
n-Propylbenzene	0.052	0.011	0.14	J	mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
sec-Butylbenzene	0.021	0.021	0.14	J	mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Styrene	ND	0.027	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
tert-Butylbenzene	ND	0.017	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,1,1,2-Tetrachloroethane	ND	0.012	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,1,2,2-Tetrachloroethane	ND	0.018	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505057

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-9 (4-6')

Project: SWMU 10

Collection Date: 4/30/2015 2:00:00 PM

Lab ID: 1505057-002

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Tetrachloroethene (PCE)	ND	0.013	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
trans-1,2-DCE	ND	0.0094	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
trans-1,3-Dichloropropene	ND	0.026	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,2,3-Trichlorobenzene	ND	0.031	0.29		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,2,4-Trichlorobenzene	ND	0.027	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,1,1-Trichloroethane	ND	0.022	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,1,2-Trichloroethane	ND	0.017	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Trichloroethene (TCE)	ND	0.014	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Trichlorofluoromethane	ND	0.044	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
1,2,3-Trichloropropane	ND	0.024	0.29		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Vinyl chloride	ND	0.058	0.14		mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Xylenes, Total	0.26	0.040	0.29	J	mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Surr: Dibromofluoromethane	99.8		70-130		%REC	5	5/5/2015 1:55:24 PM	R25982
Surr: 1,2-Dichloroethane-d4	92.2		70-130		%REC	5	5/5/2015 1:55:24 PM	R25982
Surr: Toluene-d8	102		70-130		%REC	5	5/5/2015 1:55:24 PM	R25982
Surr: 4-Bromofluorobenzene	93.4		70-130		%REC	5	5/5/2015 1:55:24 PM	R25982
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	12	3.6	14	J	mg/Kg-dr	5	5/5/2015 1:55:24 PM	R25982
Surr: BFB	102	0	67.4-150		%REC	5	5/5/2015 1:55:24 PM	R25982

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505057

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-9 (18-20')

Project: SWMU 10

Collection Date: 4/30/2015 2:15:00 PM

Lab ID: 1505057-003

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	ND	6.2	11		mg/Kg-dr	1	5/5/2015 8:32:10 PM	19001
Motor Oil Range Organics (MRO)	ND	56	56		mg/Kg-dr	1	5/5/2015 8:32:10 PM	19001
Surr: DNOP	97.6	0	57.9-140		%REC	1	5/5/2015 8:32:10 PM	19001
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	14	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.0059	0.0032	0.037	J	mg/Kg-dr	1	5/14/2015 3:31:10 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Arsenic	2.2	0.34	2.9	J	mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Barium	360	0.069	0.23		mg/Kg-dr	2	5/7/2015 2:28:50 PM	19081
Beryllium	0.99	0.0086	0.17		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Chromium	14	0.070	0.35		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Cobalt	7.6	0.044	0.35		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Iron	20000	70	290		mg/Kg-dr	100	5/7/2015 11:28:33 AM	19081
Lead	2.3	0.13	0.29		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Manganese	860	0.34	0.58		mg/Kg-dr	5	5/8/2015 2:50:50 PM	19081
Nickel	15	0.15	0.58		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Silver	ND	0.034	0.29		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Vanadium	49	0.039	2.9		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
Zinc	21	0.75	2.9		mg/Kg-dr	1	5/7/2015 2:27:23 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Aniline	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Anthracene	ND	0.098	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Benz(a)anthracene	ND	0.091	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Benzoic acid	ND	0.066	0.58		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-9 (18-20')

Project: SWMU 10

Collection Date: 4/30/2015 2:15:00 PM

Lab ID: 1505057-003

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Bis(2-chloroethyl)ether	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Bis(2-chloroisopropyl)ether	ND	0.089	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Bis(2-ethylhexyl)phthalate	ND	0.13	0.58		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
4-Chloro-3-methylphenol	ND	0.12	0.58		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
4-Chloroaniline	ND	0.11	0.58		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2-Chloronaphthalene	ND	0.12	0.29		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Chrysene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Di-n-butyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Di-n-octyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Dibenz(a,h)anthracene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
3,3'-Dichlorobenzidine	ND	0.089	0.29		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2,4-Dichlorophenol	ND	0.12	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2,4-Dimethylphenol	ND	0.091	0.35		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
4,6-Dinitro-2-methylphenol	ND	0.063	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2,4-Dinitrophenol	ND	0.048	0.58		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2,4-Dinitrotoluene	ND	0.10	0.58		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2,6-Dinitrotoluene	ND	0.13	0.58		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Fluorene	ND	0.16	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Hexachlorobutadiene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Hexachlorocyclopentadiene	ND	0.080	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Isophorone	ND	0.12	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2-Methylphenol	ND	0.12	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505057

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-9 (18-20')

Project: SWMU 10

Collection Date: 4/30/2015 2:15:00 PM

Lab ID: 1505057-003

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
4-Nitroaniline	ND	0.10	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2-Nitrophenol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
4-Nitrophenol	ND	0.10	0.29		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Pentachlorophenol	ND	0.072	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Pyridine	ND	0.097	0.46		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2,4,5-Trichlorophenol	ND	0.14	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
2,4,6-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/7/2015 2:36:36 PM	19054
Surr: 2-Fluorophenol	68.3		26.4-129		%REC	1	5/7/2015 2:36:36 PM	19054
Surr: Phenol-d5	64.7		34.8-118		%REC	1	5/7/2015 2:36:36 PM	19054
Surr: 2,4,6-Tribromophenol	62.6		26.8-128		%REC	1	5/7/2015 2:36:36 PM	19054
Surr: Nitrobenzene-d5	63.0		35.8-124		%REC	1	5/7/2015 2:36:36 PM	19054
Surr: 2-Fluorobiphenyl	68.8		24.5-139		%REC	1	5/7/2015 2:36:36 PM	19054
Surr: 4-Terphenyl-d14	87.6		29.4-129		%REC	1	5/7/2015 2:36:36 PM	19054
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.0159	0.000532	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Toluene	0.0115	0.000245	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Ethylbenzene	0.00242	0.000397	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Xylenes, Total	0.00807	0.00141	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000989	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,2,4-Trimethylbenzene	0.00229	0.000617	0.00236	J	mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,3,5-Trimethylbenzene	0.00151	0.000414	0.00236	J	mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000632	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000282	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Naphthalene	0.000873	0.000771	0.00236	J	mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1-Methylnaphthalene	ND	0.000927	0.00472		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
2-Methylnaphthalene	ND	0.000922	0.00472		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Acetone	0.00359	0.00147	0.0118	J	mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Bromobenzene	ND	0.000656	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-9 (18-20')

Project: SWMU 10

Collection Date: 4/30/2015 2:15:00 PM

Lab ID: 1505057-003

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Bromodichloromethane	ND	0.000319	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Bromoform	ND	0.000611	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Bromomethane	ND	0.00140	0.00354		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
2-Butanone	ND	0.000756	0.0118		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Carbon tetrachloride	ND	0.000427	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Chlorobenzene	ND	0.000239	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Chloroethane	ND	0.00236	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Chloroform	ND	0.000486	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Chloromethane	ND	0.000278	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
2-Chlorotoluene	ND	0.000461	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Carbon disulfide	ND	0.00107	0.0118		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
4-Chlorotoluene	ND	0.000455	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
cis-1,2-DCE	ND	0.000624	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
cis-1,3-Dichloropropene	ND	0.00236	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000693	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Dibromochloromethane	ND	0.000265	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Dibromomethane	ND	0.00134	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,2-Dichlorobenzene	ND	0.000524	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,3-Dichlorobenzene	ND	0.000400	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,4-Dichlorobenzene	ND	0.000370	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Dichlorodifluoromethane	ND	0.000963	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,1-Dichloroethane	ND	0.000551	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,1-Dichloroethene	ND	0.000394	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,2-Dichloropropane	ND	0.000504	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,3-Dichloropropane	ND	0.000368	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
2,2-Dichloropropane	ND	0.000410	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,1-Dichloropropene	ND	0.000432	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Hexachlorobutadiene	ND	0.000476	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Isopropylbenzene	ND	0.000547	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
4-Isopropyltoluene	ND	0.000916	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Methylene chloride	ND	0.000583	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
n-Butylbenzene	ND	0.000969	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
2-Hexanone	ND	0.000491	0.0118		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
n-Propylbenzene	ND	0.000442	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
sec-Butylbenzene	0.000849	0.000596	0.00236	J	mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Styrene	ND	0.000391	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
4-Methyl-2-pentanone	ND	0.000996	0.0118		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
tert-Butylbenzene	ND	0.000362	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000384	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505057

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-9 (18-20')

Project: SWMU 10

Collection Date: 4/30/2015 2:15:00 PM

Lab ID: 1505057-003

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
1,1,2,2-Tetrachloroethane	ND	0.000519	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Tetrachloroethene (PCE)	ND	0.000468	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
trans-1,2-DCE	ND	0.000381	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
trans-1,3-Dichloropropene	ND	0.000309	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,2,3-Trichlorobenzene	ND	0.000863	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,2,4-Trichlorobenzene	ND	0.000884	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,1,1-Trichloroethane	ND	0.000336	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,1,2-Trichloroethane	ND	0.00236	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Trichloroethene (TCE)	ND	0.000469	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Trichlorofluoromethane	ND	0.000477	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
1,2,3-Trichloropropane	ND	0.000829	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Vinyl chloride	ND	0.000269	0.00236		mg/Kg-dr	1	5/6/2015 9:17:58 PM	19032
Surr: 1,2-Dichloroethane-d4	92.8	0	70-130		%REC	1	5/6/2015 9:17:58 PM	19032
Surr: 4-Bromofluorobenzene	101	0	70-130		%REC	1	5/6/2015 9:17:58 PM	19032
Surr: Dibromofluoromethane	97.3	0	70-130		%REC	1	5/6/2015 9:17:58 PM	19032
Surr: Toluene-d8	97.1	0	70-130		%REC	1	5/6/2015 9:17:58 PM	19032
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.91	3.6		mg/Kg-dr	1	5/6/2015 2:25:01 AM	R25982
Surr: BFB	104	0	67.4-150		%REC	1	5/6/2015 2:25:01 AM	R25982

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505057

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-9DUP02

Project: SWMU 10

Collection Date: 4/30/2015

Lab ID: 1505057-004

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	530	6.6	12		mg/Kg-dr	1	5/5/2015 8:53:40 PM	19001
Motor Oil Range Organics (MRO)	170	60	60		mg/Kg-dr	1	5/5/2015 8:53:40 PM	19001
Surr: DNOP	108	0	57.9-140		%REC	1	5/5/2015 8:53:40 PM	19001
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	15	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.0043	0.0035	0.039	J	mg/Kg-dr	1	5/14/2015 3:32:58 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Arsenic	1.3	0.34	2.9	J	mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Barium	190	0.035	0.12		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Beryllium	0.90	0.0087	0.18		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Chromium	8.5	0.071	0.35		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Cobalt	4.1	0.044	0.35		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Iron	13000	71	290		mg/Kg-dr	100	5/7/2015 11:29:56 AM	19081
Lead	3.3	0.13	0.29		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Manganese	170	0.069	0.12		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Nickel	7.4	0.15	0.59		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Vanadium	19	0.039	2.9		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
Zinc	49	0.75	2.9		mg/Kg-dr	1	5/7/2015 2:30:23 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.14	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Acenaphthylene	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Aniline	ND	0.10	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Azobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Benz(a)anthracene	ND	0.092	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Benzo(a)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Benzo(g,h,i)perylene	ND	0.13	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Benzo(k)fluoranthene	ND	0.13	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Benzoic acid	ND	0.067	0.59		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Benzyl alcohol	ND	0.10	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Bis(2-chloroethoxy)methane	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505057

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-9DUP02

Project: SWMU 10

Collection Date: 4/30/2015

Lab ID: 1505057-004

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Bis(2-chloroethyl)ether	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Bis(2-chloroisopropyl)ether	ND	0.090	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
4-Bromophenyl phenyl ether	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Butyl benzyl phthalate	ND	0.14	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Carbazole	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2-Chloronaphthalene	ND	0.13	0.29		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2-Chlorophenol	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
4-Chlorophenyl phenyl ether	ND	0.18	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Chrysene	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Di-n-butyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Di-n-octyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Dibenz(a,h)anthracene	ND	0.13	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Dibenzofuran	ND	0.13	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
1,2-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
1,3-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
1,4-Dichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
3,3'-Dichlorobenzidine	ND	0.091	0.29		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Diethyl phthalate	ND	0.13	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Dimethyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2,4-Dichlorophenol	ND	0.12	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2,4-Dimethylphenol	ND	0.092	0.35		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
4,6-Dinitro-2-methylphenol	ND	0.064	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2,4-Dinitrotoluene	ND	0.11	0.59		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Fluoranthene	ND	0.14	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Fluorene	ND	0.16	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Hexachlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Hexachlorobutadiene	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Hexachlorocyclopentadiene	ND	0.082	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Hexachloroethane	ND	0.10	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Indeno(1,2,3-cd)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Isophorone	ND	0.13	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
1-Methylnaphthalene	0.70	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2-Methylnaphthalene	0.89	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2-Methylphenol	ND	0.12	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505057

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-9DUP02

Project: SWMU 10

Collection Date: 4/30/2015

Lab ID: 1505057-004

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
N-Nitrosodiphenylamine	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Naphthalene	0.33	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
4-Nitroaniline	ND	0.11	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2-Nitrophenol	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
4-Nitrophenol	ND	0.10	0.29		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Pentachlorophenol	ND	0.073	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Phenanthrene	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Phenol	ND	0.11	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Pyrene	ND	0.15	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Pyridine	ND	0.099	0.47		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
1,2,4-Trichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2,4,5-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
2,4,6-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/11/2015 12:54:59 PM	19087
Surr: 2-Fluorophenol	73.5		26.4-129		%REC	1	5/11/2015 12:54:59 PM	19087
Surr: Phenol-d5	68.2		34.8-118		%REC	1	5/11/2015 12:54:59 PM	19087
Surr: 2,4,6-Tribromophenol	77.9		26.8-128		%REC	1	5/11/2015 12:54:59 PM	19087
Surr: Nitrobenzene-d5	69.8		35.8-124		%REC	1	5/11/2015 12:54:59 PM	19087
Surr: 2-Fluorobiphenyl	71.3		24.5-139		%REC	1	5/11/2015 12:54:59 PM	19087
Surr: 4-Terphenyl-d14	54.8		29.4-129		%REC	1	5/11/2015 12:54:59 PM	19087
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	ND	0.049	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Toluene	ND	0.039	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Ethylbenzene	0.34	0.030	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Methyl tert-butyl ether (MTBE)	ND	0.046	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,2,4-Trimethylbenzene	2.8	0.016	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,3,5-Trimethylbenzene	0.82	0.022	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,2-Dichloroethane (EDC)	ND	0.13	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,2-Dibromoethane (EDB)	ND	0.026	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Naphthalene	2.5	0.078	0.65		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1-Methylnaphthalene	9.3	0.20	1.3		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
2-Methylnaphthalene	13	0.22	1.3		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Acetone	ND	0.24	4.9		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Bromobenzene	ND	0.024	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Bromodichloromethane	ND	0.027	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505057

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-9DUP02

Project: SWMU 10

Collection Date: 4/30/2015

Lab ID: 1505057-004

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Bromoform	ND	0.026	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Bromomethane	ND	0.063	0.98		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
2-Butanone	ND	0.21	3.3		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Carbon disulfide	ND	0.24	3.3		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Carbon tetrachloride	ND	0.032	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Chlorobenzene	ND	0.025	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Chloroethane	ND	0.25	0.65		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Chloroform	ND	0.034	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Chloromethane	ND	0.038	0.98		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
2-Chlorotoluene	ND	0.037	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
4-Chlorotoluene	ND	0.025	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
cis-1,2-DCE	ND	0.041	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
cis-1,3-Dichloropropene	ND	0.023	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,2-Dibromo-3-chloropropane	ND	0.056	0.65		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Dibromochloromethane	ND	0.025	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Dibromomethane	ND	0.034	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,2-Dichlorobenzene	ND	0.020	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,3-Dichlorobenzene	ND	0.039	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,4-Dichlorobenzene	ND	0.041	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Dichlorodifluoromethane	ND	0.082	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,1-Dichloroethane	ND	0.13	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,1-Dichloroethene	ND	0.023	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,2-Dichloropropane	ND	0.018	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,3-Dichloropropane	ND	0.045	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
2,2-Dichloropropane	ND	0.048	0.65		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,1-Dichloropropene	ND	0.049	0.65		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Hexachlorobutadiene	ND	0.045	0.65		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
2-Hexanone	ND	0.081	3.3		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Isopropylbenzene	0.16	0.028	0.33	J	mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
4-Isopropyltoluene	0.21	0.023	0.33	J	mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
4-Methyl-2-pentanone	ND	0.057	3.3		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Methylene chloride	ND	0.13	0.98		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
n-Butylbenzene	0.40	0.028	0.98	J	mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
n-Propylbenzene	0.34	0.024	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
sec-Butylbenzene	0.17	0.047	0.33	J	mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Styrene	ND	0.060	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
tert-Butylbenzene	ND	0.037	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,1,1,2-Tetrachloroethane	ND	0.027	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,1,2,2-Tetrachloroethane	ND	0.040	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505057

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-9DUP02

Project: SWMU 10

Collection Date: 4/30/2015

Lab ID: 1505057-004

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Tetrachloroethene (PCE)	ND	0.028	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
trans-1,2-DCE	ND	0.021	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
trans-1,3-Dichloropropene	ND	0.059	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,2,3-Trichlorobenzene	ND	0.070	0.65		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,2,4-Trichlorobenzene	ND	0.060	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,1,1-Trichloroethane	ND	0.050	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,1,2-Trichloroethane	ND	0.039	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Trichloroethene (TCE)	ND	0.032	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Trichlorofluoromethane	ND	0.099	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
1,2,3-Trichloropropane	ND	0.055	0.65		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Vinyl chloride	ND	0.13	0.33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Xylenes, Total	1.9	0.091	0.65		mg/Kg-dr	10	5/5/2015 5:18:50 AM	19008
Surr: Dibromofluoromethane	94.7		70-130		%REC	10	5/5/2015 5:18:50 AM	19008
Surr: 1,2-Dichloroethane-d4	86.7		70-130		%REC	10	5/5/2015 5:18:50 AM	19008
Surr: Toluene-d8	98.9		70-130		%REC	10	5/5/2015 5:18:50 AM	19008
Surr: 4-Bromofluorobenzene	74.8		70-130		%REC	10	5/5/2015 5:18:50 AM	19008
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	69	8.2	33		mg/Kg-dr	10	5/5/2015 5:18:50 AM	R25941
Surr: BFB	96.8	0	67.4-150		%REC	10	5/5/2015 5:18:50 AM	R25941

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	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505057

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-8 (2-4')

Project: SWMU 10

Collection Date: 4/30/2015 10:10:00 AM

Lab ID: 1505057-005

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	9700	61	110		mg/Kg-dr	10	5/5/2015 9:36:30 PM	19001
Motor Oil Range Organics (MRO)	2000	550	550		mg/Kg-dr	10	5/5/2015 9:36:30 PM	19001
Surr: DNOP	0	0	57.9-140	S	%REC	10	5/5/2015 9:36:30 PM	19001
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	12	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.015	0.0033	0.038	J	mg/Kg-dr	1	5/14/2015 3:34:46 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.4	2.7		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Arsenic	1.5	0.32	2.7	J	mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Barium	830	0.16	0.55		mg/Kg-dr	5	5/8/2015 2:52:27 PM	19081
Beryllium	0.65	0.0081	0.16		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Chromium	29	0.066	0.33		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Cobalt	3.9	0.042	0.33		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Iron	14000	66	270		mg/Kg-dr	100	5/7/2015 11:31:18 AM	19081
Lead	4.5	0.12	0.27		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Manganese	380	0.13	0.22		mg/Kg-dr	2	5/7/2015 2:40:16 PM	19081
Nickel	6.9	0.14	0.55		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Selenium	ND	1.7	2.7		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Silver	ND	0.033	0.27		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Vanadium	22	0.037	2.7		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
Zinc	17	0.71	2.7		mg/Kg-dr	1	5/7/2015 2:38:44 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	1.4	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Acenaphthylene	ND	1.2	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Aniline	ND	0.99	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Anthracene	ND	0.97	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Azobenzene	ND	1.3	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Benz(a)anthracene	ND	0.89	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Benzo(a)pyrene	ND	1.3	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Benzo(b)fluoranthene	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Benzo(g,h,i)perylene	ND	1.3	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Benzo(k)fluoranthene	ND	1.3	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Benzoic acid	ND	0.65	5.7		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Benzyl alcohol	ND	1.0	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Bis(2-chloroethoxy)methane	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087

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	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-8 (2-4')

Project: SWMU 10

Collection Date: 4/30/2015 10:10:00 AM

Lab ID: 1505057-005

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Bis(2-chloroethyl)ether	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Bis(2-chloroisopropyl)ether	ND	0.87	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Bis(2-ethylhexyl)phthalate	ND	1.3	5.7		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
4-Bromophenyl phenyl ether	ND	1.2	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Butyl benzyl phthalate	ND	1.4	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Carbazole	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
4-Chloro-3-methylphenol	ND	1.1	5.7		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
4-Chloroaniline	ND	1.1	5.7		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2-Chloronaphthalene	ND	1.2	2.8		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2-Chlorophenol	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
4-Chlorophenyl phenyl ether	ND	1.7	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Chrysene	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Di-n-butyl phthalate	ND	1.3	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Di-n-octyl phthalate	ND	1.3	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Dibenz(a,h)anthracene	ND	1.2	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Dibenzofuran	ND	1.2	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
1,2-Dichlorobenzene	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
1,3-Dichlorobenzene	ND	1.0	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
1,4-Dichlorobenzene	ND	1.2	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
3,3'-Dichlorobenzidine	ND	0.88	2.8		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Diethyl phthalate	ND	1.3	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Dimethyl phthalate	ND	1.0	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2,4-Dichlorophenol	ND	1.1	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2,4-Dimethylphenol	ND	0.89	3.4		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
4,6-Dinitro-2-methylphenol	ND	0.62	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2,4-Dinitrophenol	ND	0.47	5.7		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2,4-Dinitrotoluene	ND	1.0	5.7		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2,6-Dinitrotoluene	ND	1.3	5.7		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Fluoranthene	ND	1.4	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Fluorene	8.1	1.5	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Hexachlorobenzene	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Hexachlorobutadiene	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Hexachlorocyclopentadiene	ND	0.79	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Hexachloroethane	ND	1.0	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Indeno(1,2,3-cd)pyrene	ND	1.3	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Isophorone	ND	1.2	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
1-Methylnaphthalene	68	4.2	9.1		mg/Kg-dr	4	5/11/2015 3:27:10 PM	19087
2-Methylnaphthalene	89	4.2	9.1		mg/Kg-dr	4	5/11/2015 3:27:10 PM	19087
2-Methylphenol	ND	1.1	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087

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Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505057

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-8 (2-4')

Project: SWMU 10

Collection Date: 4/30/2015 10:10:00 AM

Lab ID: 1505057-005

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	ND	1.2	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
N-Nitrosodi-n-propylamine	ND	1.2	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
N-Nitrosodiphenylamine	ND	1.0	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Naphthalene	18	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2-Nitroaniline	ND	1.3	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
3-Nitroaniline	ND	1.1	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
4-Nitroaniline	ND	1.0	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Nitrobenzene	ND	1.2	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2-Nitrophenol	ND	1.0	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
4-Nitrophenol	ND	0.98	2.8		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Pentachlorophenol	ND	0.71	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Phenanthrene	15	1.2	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Phenol	ND	1.0	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Pyrene	ND	1.5	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Pyridine	ND	0.96	4.6		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
1,2,4-Trichlorobenzene	ND	1.2	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2,4,5-Trichlorophenol	ND	1.3	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
2,4,6-Trichlorophenol	ND	1.3	2.3		mg/Kg-dr	1	5/11/2015 2:18:55 PM	19087
Surr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/11/2015 2:18:55 PM	19087
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/11/2015 2:18:55 PM	19087
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/11/2015 2:18:55 PM	19087
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/11/2015 2:18:55 PM	19087
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/11/2015 2:18:55 PM	19087
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/11/2015 2:18:55 PM	19087
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	0.20	0.097	0.65	J	mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Toluene	0.48	0.078	0.65	J	mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Ethylbenzene	1.4	0.060	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Methyl tert-butyl ether (MTBE)	ND	0.092	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,2,4-Trimethylbenzene	9.7	0.033	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,3,5-Trimethylbenzene	4.7	0.043	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,2-Dichloroethane (EDC)	ND	0.26	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,2-Dibromoethane (EDB)	ND	0.052	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Naphthalene	7.8	0.16	1.3		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1-Methylnaphthalene	27	0.39	2.6		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
2-Methylnaphthalene	41	0.43	2.6		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Acetone	ND	0.49	9.8		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Bromobenzene	ND	0.049	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Bromodichloromethane	ND	0.053	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008

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	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Western Refining Company**Client Sample ID:** SWMU 10-8 (2-4')**Project:** SWMU 10**Collection Date:** 4/30/2015 10:10:00 AM**Lab ID:** 1505057-005**Matrix:** SOIL**Received Date:** 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Bromoform	ND	0.053	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Bromomethane	ND	0.13	2.0		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
2-Butanone	ND	0.42	6.5		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Carbon disulfide	ND	0.47	6.5		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Carbon tetrachloride	ND	0.064	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Chlorobenzene	ND	0.050	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Chloroethane	ND	0.51	1.3		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Chloroform	ND	0.068	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Chloromethane	ND	0.076	2.0		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
2-Chlorotoluene	ND	0.074	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
4-Chlorotoluene	ND	0.049	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
cis-1,2-DCE	ND	0.083	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
cis-1,3-Dichloropropene	ND	0.045	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,2-Dibromo-3-chloropropane	ND	0.11	1.3		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Dibromochloromethane	ND	0.049	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Dibromomethane	ND	0.069	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,2-Dichlorobenzene	ND	0.039	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,3-Dichlorobenzene	ND	0.077	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,4-Dichlorobenzene	ND	0.081	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Dichlorodifluoromethane	ND	0.16	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,1-Dichloroethane	ND	0.26	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,1-Dichloroethene	ND	0.045	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,2-Dichloropropane	ND	0.037	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,3-Dichloropropane	ND	0.090	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
2,2-Dichloropropane	ND	0.095	1.3		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,1-Dichloropropene	ND	0.097	1.3		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Hexachlorobutadiene	ND	0.091	1.3		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
2-Hexanone	ND	0.16	6.5		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Isopropylbenzene	0.52	0.055	0.65	J	mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
4-Isopropyltoluene	0.95	0.046	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
4-Methyl-2-pentanone	ND	0.11	6.5		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Methylene chloride	ND	0.26	2.0		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
n-Butylbenzene	1.2	0.056	2.0	J	mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
n-Propylbenzene	0.85	0.049	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
sec-Butylbenzene	0.51	0.093	0.65	J	mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Styrene	ND	0.12	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
tert-Butylbenzene	ND	0.075	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,1,1,2-Tetrachloroethane	ND	0.054	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,1,2,2-Tetrachloroethane	ND	0.079	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505057

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-8 (2-4')

Project: SWMU 10

Collection Date: 4/30/2015 10:10:00 AM

Lab ID: 1505057-005

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Tetrachloroethene (PCE)	ND	0.057	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
trans-1,2-DCE	ND	0.042	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
trans-1,3-Dichloropropene	ND	0.12	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,2,3-Trichlorobenzene	ND	0.14	1.3		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,2,4-Trichlorobenzene	ND	0.12	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,1,1-Trichloroethane	ND	0.099	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,1,2-Trichloroethane	ND	0.079	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Trichloroethene (TCE)	ND	0.064	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Trichlorofluoromethane	ND	0.20	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
1,2,3-Trichloropropane	ND	0.11	1.3		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Vinyl chloride	ND	0.26	0.65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Xylenes, Total	13	0.18	1.3		mg/Kg-dr	20	5/5/2015 5:47:35 AM	19008
Surr: Dibromofluoromethane	99.4		70-130		%REC	20	5/5/2015 5:47:35 AM	19008
Surr: 1,2-Dichloroethane-d4	96.4		70-130		%REC	20	5/5/2015 5:47:35 AM	19008
Surr: Toluene-d8	102		70-130		%REC	20	5/5/2015 5:47:35 AM	19008
Surr: 4-Bromofluorobenzene	74.9		70-130		%REC	20	5/5/2015 5:47:35 AM	19008
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	670	16	65		mg/Kg-dr	20	5/5/2015 5:47:35 AM	R25941
Surr: BFB	105	0	67.4-150		%REC	20	5/5/2015 5:47:35 AM	R25941

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505057

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-8 (4-6')

Project: SWMU 10

Collection Date: 4/30/2015 10:20:00 AM

Lab ID: 1505057-006

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	25	6.2	11		mg/Kg-dr	1	5/5/2015 10:19:18 PM	19001
Motor Oil Range Organics (MRO)	ND	56	56		mg/Kg-dr	1	5/5/2015 10:19:18 PM	19001
Surr: DNOP	108	0	57.9-140		%REC	1	5/5/2015 10:19:18 PM	19001
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	14	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.041	0.0032	0.036		mg/Kg-dr	1	5/14/2015 3:36:34 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.5	2.8		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Arsenic	1.9	0.33	2.8	J	mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Barium	130	0.034	0.11		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Beryllium	0.83	0.0084	0.17		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Chromium	11	0.068	0.34		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Cobalt	4.5	0.043	0.34		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Iron	13000	68	280		mg/Kg-dr	100	5/7/2015 11:32:40 AM	19081
Lead	3.4	0.12	0.28		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Manganese	370	0.13	0.23		mg/Kg-dr	2	5/7/2015 2:43:12 PM	19081
Nickel	7.8	0.15	0.57		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Silver	ND	0.034	0.28		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Vanadium	17	0.038	2.8		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
Zinc	18	0.73	2.8		mg/Kg-dr	1	5/7/2015 2:41:43 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Aniline	ND	0.10	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Anthracene	ND	0.098	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Benz(a)anthracene	ND	0.091	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Benzoic acid	ND	0.066	0.58		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-8 (4-6')

Project: SWMU 10

Collection Date: 4/30/2015 10:20:00 AM

Lab ID: 1505057-006

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Bis(2-chloroethyl)ether	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Bis(2-chloroisopropyl)ether	ND	0.088	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Bis(2-ethylhexyl)phthalate	ND	0.13	0.58		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
4-Chloro-3-methylphenol	ND	0.12	0.58		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
4-Chloroaniline	ND	0.11	0.58		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2-Chloronaphthalene	ND	0.12	0.29		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Chrysene	ND	0.12	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Di-n-butyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Di-n-octyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Dibenz(a,h)anthracene	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
3,3'-Dichlorobenzidine	ND	0.089	0.29		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2,4-Dichlorophenol	ND	0.12	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2,4-Dimethylphenol	ND	0.091	0.35		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
4,6-Dinitro-2-methylphenol	ND	0.063	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2,4-Dinitrophenol	ND	0.048	0.58		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2,4-Dinitrotoluene	ND	0.10	0.58		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2,6-Dinitrotoluene	ND	0.13	0.58		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Fluorene	ND	0.16	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Hexachlorobutadiene	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Hexachlorocyclopentadiene	ND	0.080	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Isophorone	ND	0.12	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
1-Methylnaphthalene	0.26	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2-Methylnaphthalene	0.35	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2-Methylphenol	ND	0.12	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505057

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-8 (4-6')

Project: SWMU 10

Collection Date: 4/30/2015 10:20:00 AM

Lab ID: 1505057-006

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Naphthalene	0.15	0.11	0.23	J	mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
4-Nitroaniline	ND	0.10	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2-Nitrophenol	ND	0.10	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
4-Nitrophenol	ND	0.10	0.29		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Pentachlorophenol	ND	0.072	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Pyridine	ND	0.097	0.46		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2,4,5-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
2,4,6-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/11/2015 2:46:44 PM	19087
Surr: 2-Fluorophenol	47.2		26.4-129		%REC	1	5/11/2015 2:46:44 PM	19087
Surr: Phenol-d5	45.1		34.8-118		%REC	1	5/11/2015 2:46:44 PM	19087
Surr: 2,4,6-Tribromophenol	56.2		26.8-128		%REC	1	5/11/2015 2:46:44 PM	19087
Surr: Nitrobenzene-d5	47.4		35.8-124		%REC	1	5/11/2015 2:46:44 PM	19087
Surr: 2-Fluorobiphenyl	51.0		24.5-139		%REC	1	5/11/2015 2:46:44 PM	19087
Surr: 4-Terphenyl-d14	40.0		29.4-129		%REC	1	5/11/2015 2:46:44 PM	19087
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	0.047	0.0047	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Toluene	ND	0.0037	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Ethylbenzene	0.044	0.0029	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Methyl tert-butyl ether (MTBE)	ND	0.0044	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,2,4-Trimethylbenzene	0.021	0.0016	0.031	J	mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,3,5-Trimethylbenzene	0.0048	0.0021	0.031	J	mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,2-Dichloroethane (EDC)	ND	0.013	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,2-Dibromoethane (EDB)	ND	0.0025	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Naphthalene	0.14	0.0075	0.063		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1-Methylnaphthalene	0.37	0.019	0.13		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
2-Methylnaphthalene	0.30	0.021	0.13		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Acetone	ND	0.023	0.47		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Bromobenzene	ND	0.0023	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Bromodichloromethane	ND	0.0026	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-8 (4-6')

Project: SWMU 10

Collection Date: 4/30/2015 10:20:00 AM

Lab ID: 1505057-006

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Bromoform	ND	0.0025	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Bromomethane	ND	0.0061	0.094		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
2-Butanone	ND	0.020	0.31		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Carbon disulfide	ND	0.023	0.31		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Carbon tetrachloride	ND	0.0031	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Chlorobenzene	ND	0.0024	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Chloroethane	ND	0.024	0.063		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Chloroform	ND	0.0033	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Chloromethane	ND	0.0036	0.094		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
2-Chlorotoluene	ND	0.0035	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
4-Chlorotoluene	ND	0.0024	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
cis-1,2-DCE	ND	0.0040	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
cis-1,3-Dichloropropene	ND	0.0022	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,2-Dibromo-3-chloropropane	ND	0.0054	0.063		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Dibromochloromethane	ND	0.0024	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Dibromomethane	ND	0.0033	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,2-Dichlorobenzene	ND	0.0019	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,3-Dichlorobenzene	ND	0.0037	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,4-Dichlorobenzene	ND	0.0039	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Dichlorodifluoromethane	ND	0.0079	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,1-Dichloroethane	ND	0.013	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,1-Dichloroethene	ND	0.0022	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,2-Dichloropropane	ND	0.0018	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,3-Dichloropropane	ND	0.0043	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
2,2-Dichloropropane	ND	0.0046	0.063		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,1-Dichloropropene	ND	0.0047	0.063		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Hexachlorobutadiene	ND	0.0044	0.063		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
2-Hexanone	ND	0.0077	0.31		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Isopropylbenzene	0.012	0.0026	0.031	J	mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
4-Isopropyltoluene	0.014	0.0022	0.031	J	mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
4-Methyl-2-pentanone	ND	0.0054	0.31		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Methylene chloride	ND	0.013	0.094		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
n-Butylbenzene	0.023	0.0027	0.094	J	mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
n-Propylbenzene	0.026	0.0023	0.031	J	mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
sec-Butylbenzene	0.011	0.0045	0.031	J	mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Styrene	ND	0.0058	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
tert-Butylbenzene	ND	0.0036	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,1,1,2-Tetrachloroethane	ND	0.0026	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,1,2,2-Tetrachloroethane	ND	0.0038	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505057

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-8 (4-6')

Project: SWMU 10

Collection Date: 4/30/2015 10:20:00 AM

Lab ID: 1505057-006

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Tetrachloroethene (PCE)	ND	0.0027	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
trans-1,2-DCE	ND	0.0020	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
trans-1,3-Dichloropropene	ND	0.0056	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,2,3-Trichlorobenzene	ND	0.0067	0.063		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,2,4-Trichlorobenzene	ND	0.0058	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,1,1-Trichloroethane	ND	0.0048	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,1,2-Trichloroethane	ND	0.0038	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Trichloroethene (TCE)	ND	0.0031	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Trichlorofluoromethane	ND	0.0095	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
1,2,3-Trichloropropane	ND	0.0053	0.063		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Vinyl chloride	ND	0.013	0.031		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Xylenes, Total	0.016	0.0087	0.063	J	mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Surr: Dibromofluoromethane	98.4		70-130		%REC	1	5/5/2015 2:53:06 PM	R25982
Surr: 1,2-Dichloroethane-d4	91.2		70-130		%REC	1	5/5/2015 2:53:06 PM	R25982
Surr: Toluene-d8	93.5		70-130		%REC	1	5/5/2015 2:53:06 PM	R25982
Surr: 4-Bromofluorobenzene	89.3		70-130		%REC	1	5/5/2015 2:53:06 PM	R25982
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	10	0.79	3.1		mg/Kg-dr	1	5/5/2015 2:53:06 PM	R25982
Surr: BFB	113	0	67.4-150		%REC	1	5/5/2015 2:53:06 PM	R25982

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505057

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-8 (18-20')

Project: SWMU 10

Collection Date: 4/30/2015 10:35:00 AM

Lab ID: 1505057-007

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	ND	6.3	11		mg/Kg-dr	1	5/5/2015 10:40:37 PM	19001
Motor Oil Range Organics (MRO)	ND	57	57		mg/Kg-dr	1	5/5/2015 10:40:37 PM	19001
Surr: DNOP	99.4	0	57.9-140		%REC	1	5/5/2015 10:40:37 PM	19001
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	14	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.0037	0.0034	0.039	J	mg/Kg-dr	1	5/14/2015 3:42:07 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Arsenic	2.0	0.34	2.9	J	mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Barium	470	0.068	0.23		mg/Kg-dr	2	5/7/2015 2:46:11 PM	19081
Beryllium	0.99	0.0085	0.17		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Cadmium	ND	0.032	0.11		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Chromium	20	0.069	0.34		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Cobalt	8.7	0.043	0.34		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Iron	17000	69	290		mg/Kg-dr	100	5/7/2015 11:34:04 AM	19081
Lead	0.27	0.12	0.29	J	mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Manganese	1200	0.34	0.57		mg/Kg-dr	5	5/8/2015 2:54:10 PM	19081
Nickel	16	0.15	0.57		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Silver	ND	0.034	0.29		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Vanadium	15	0.038	2.9		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
Zinc	24	0.74	2.9		mg/Kg-dr	1	5/7/2015 2:44:36 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Aniline	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Anthracene	ND	0.098	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Benz(a)anthracene	ND	0.090	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Benzoic acid	ND	0.066	0.58		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-8 (18-20')

Project: SWMU 10

Collection Date: 4/30/2015 10:35:00 AM

Lab ID: 1505057-007

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Bis(2-chloroethyl)ether	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.088	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.13	0.58		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
4-Chloro-3-methylphenol	ND	0.11	0.58		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
4-Chloroaniline	ND	0.11	0.58		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2-Chloronaphthalene	ND	0.12	0.29		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Chrysene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Di-n-butyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Di-n-octyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Dibenz(a,h)anthracene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
3,3'-Dichlorobenzidine	ND	0.089	0.29		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2,4-Dichlorophenol	ND	0.11	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2,4-Dimethylphenol	ND	0.090	0.35		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.063	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2,4-Dinitrophenol	ND	0.048	0.58		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2,4-Dinitrotoluene	ND	0.10	0.58		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2,6-Dinitrotoluene	ND	0.13	0.58		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Fluorene	ND	0.16	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Hexachlorobutadiene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Hexachlorocyclopentadiene	ND	0.080	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Isophorone	ND	0.12	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2-Methylphenol	ND	0.12	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505057

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-8 (18-20')

Project: SWMU 10

Collection Date: 4/30/2015 10:35:00 AM

Lab ID: 1505057-007

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
4-Nitroaniline	ND	0.10	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2-Nitrophenol	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
4-Nitrophenol	ND	0.099	0.29		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Pentachlorophenol	ND	0.072	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Pyridine	ND	0.097	0.46		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2,4,5-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
2,4,6-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 2:38:36 PM	19157
Surr: 2-Fluorophenol	57.6		26.4-129		%REC	1	5/13/2015 2:38:36 PM	19157
Surr: Phenol-d5	59.6		34.8-118		%REC	1	5/13/2015 2:38:36 PM	19157
Surr: 2,4,6-Tribromophenol	69.7		26.8-128		%REC	1	5/13/2015 2:38:36 PM	19157
Surr: Nitrobenzene-d5	57.5		35.8-124		%REC	1	5/13/2015 2:38:36 PM	19157
Surr: 2-Fluorobiphenyl	70.0		24.5-139		%REC	1	5/13/2015 2:38:36 PM	19157
Surr: 4-Terphenyl-d14	54.8		29.4-129		%REC	1	5/13/2015 2:38:36 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.0178	0.000429	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Toluene	0.0122	0.000198	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Ethylbenzene	0.00285	0.000320	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Xylenes, Total	0.00872	0.00114	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000798	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,2,4-Trimethylbenzene	0.00236	0.000497	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,3,5-Trimethylbenzene	0.00159	0.000334	0.00190	J	mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000510	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000228	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Naphthalene	0.000809	0.000622	0.00190	J	mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1-Methylnaphthalene	ND	0.000747	0.00381		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
2-Methylnaphthalene	ND	0.000744	0.00381		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Acetone	0.00466	0.00119	0.00952	J	mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Bromobenzene	ND	0.000530	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-8 (18-20')

Project: SWMU 10

Collection Date: 4/30/2015 10:35:00 AM

Lab ID: 1505057-007

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Bromodichloromethane	ND	0.000257	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Bromoform	ND	0.000493	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Bromomethane	ND	0.00113	0.00285		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
2-Butanone	ND	0.000609	0.00952		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Carbon tetrachloride	ND	0.000344	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Chlorobenzene	ND	0.000193	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Chloroethane	ND	0.00190	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Chloroform	ND	0.000392	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Chloromethane	ND	0.000224	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
2-Chlorotoluene	ND	0.000371	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Carbon disulfide	ND	0.000861	0.00952		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
4-Chlorotoluene	ND	0.000367	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
cis-1,2-DCE	ND	0.000503	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
cis-1,3-Dichloropropene	ND	0.00190	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000559	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Dibromochloromethane	ND	0.000213	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Dibromomethane	ND	0.00108	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,2-Dichlorobenzene	ND	0.000422	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,3-Dichlorobenzene	ND	0.000323	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,4-Dichlorobenzene	ND	0.000299	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Dichlorodifluoromethane	ND	0.000777	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,1-Dichloroethane	ND	0.000445	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,1-Dichloroethene	ND	0.000318	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,2-Dichloropropane	ND	0.000407	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,3-Dichloropropane	ND	0.000296	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
2,2-Dichloropropane	ND	0.000331	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,1-Dichloropropene	ND	0.000349	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Hexachlorobutadiene	ND	0.000384	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Isopropylbenzene	0.000447	0.000442	0.00190	J	mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
4-Isopropyltoluene	ND	0.000739	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Methylene chloride	ND	0.000470	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
n-Butylbenzene	ND	0.000781	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
2-Hexanone	ND	0.000396	0.00952		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
n-Propylbenzene	0.000428	0.000356	0.00190	J	mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
sec-Butylbenzene	0.000714	0.000481	0.00190	J	mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Styrene	ND	0.000315	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
4-Methyl-2-pentanone	ND	0.000804	0.00952		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
tert-Butylbenzene	ND	0.000292	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000310	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505057

Date Reported: 10/8/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-8 (18-20')

Project: SWMU 10

Collection Date: 4/30/2015 10:35:00 AM

Lab ID: 1505057-007

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
1,1,2,2-Tetrachloroethane	ND	0.000418	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Tetrachloroethene (PCE)	ND	0.000377	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
trans-1,2-DCE	ND	0.000308	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
trans-1,3-Dichloropropene	ND	0.000249	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,2,3-Trichlorobenzene	ND	0.000696	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,2,4-Trichlorobenzene	ND	0.000713	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,1,1-Trichloroethane	ND	0.000271	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,1,2-Trichloroethane	ND	0.00190	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Trichloroethene (TCE)	ND	0.000378	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Trichlorofluoromethane	ND	0.000385	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
1,2,3-Trichloropropane	ND	0.000668	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Vinyl chloride	ND	0.000217	0.00190		mg/Kg-dr	1	5/6/2015 9:47:21 PM	19032
Surr: 1,2-Dichloroethane-d4	93.4	0	70-130		%REC	1	5/6/2015 9:47:21 PM	19032
Surr: 4-Bromofluorobenzene	95.8	0	70-130		%REC	1	5/6/2015 9:47:21 PM	19032
Surr: Dibromofluoromethane	99.8	0	70-130		%REC	1	5/6/2015 9:47:21 PM	19032
Surr: Toluene-d8	84.7	0	70-130		%REC	1	5/6/2015 9:47:21 PM	19032
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.88	3.5		mg/Kg-dr	1	5/6/2015 2:53:53 AM	R25982
Surr: BFB	105	0	67.4-150		%REC	1	5/6/2015 2:53:53 AM	R25982

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		



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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 05, 2015
Description :
Sample ID : 1505057-001C SWMU 10-9 2-4 FT
Collected By :
Collection Date : 04/30/15 13:50

ESC Sample # : L762972-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	120		mV	2580 B-2011	05/10/15	1
pH	7.7	0.10	su	9045D	05/07/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762972-01 (PH) - 7.7 at 20.5C



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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 05, 2015
Description :

Sample ID : 1505057-002C SWMU 10-09 4-6 FT

Collected By :
Collection Date : 04/30/15 14:00

ESC Sample # : L762972-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	110		mV	2580 B-2011	05/10/15	1
pH	7.8	0.10	su	9045D	05/07/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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L762972-02 (PH) - 7.8 at 21.0C



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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 05, 2015
Description :
Sample ID : 1505057-003C SWMU 10-9 18-20 FT
Collected By :
Collection Date : 04/30/15 14:15

ESC Sample # : L762972-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	100		mV	2580 B-2011	05/10/15	1
pH	8.5	0.10	su	9045D	05/07/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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L762972-03 (PH) - 8.5 at 21.0C



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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 05, 2015
Description :
Sample ID : 1505057-004C SWMU 10-9 DUP02
Collected By :
Collection Date : 04/30/15 00:00

ESC Sample # : L762972-04

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	110		mV	2580 B-2011	05/10/15	1
pH	7.6	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762972-04 (PH) - 7.6 at 21.5c



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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 05, 2015
Description :
Sample ID : 1505057-005C SWMU 10-8 2-4 FT
Collected By :
Collection Date : 04/30/15 10:10

ESC Sample # : L762972-05

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/07/15	1
ORP	100		mV	2580 B-2011	05/10/15	1
pH	8.3	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762972-05 (PH) - 8.3 at 21.2c



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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 05, 2015
Description :
Sample ID : 1505057-006C SWMU 10-8 4-6 FT
Collected By :
Collection Date : 04/30/15 10:20

ESC Sample # : L762972-06

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	120		mV	2580 B-2011	05/10/15	1
pH	7.7	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762972-06 (PH) - 7.7 at 20.8c



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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 05, 2015
Description :
Sample ID : 1505057-007C SWMU 10-8 18-20 FT
Collected By :
Collection Date : 04/30/15 10:35

ESC Sample # : L762972-07

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	190		mV	2580 B-2011	05/10/15	1
pH	8.7	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762972-07 (PH) - 8.7 at 20.3c



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Quality Assurance Report
Level II

L762972

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May 13, 2015

Analyte	Result	Laboratory Blank Units % Rec	Limit	Batch	Date Analyzed
Chromium, Hexavalent	< 2	mg/kg		WG786845	05/07/15 05:34
Chromium, Hexavalent	< 2	mg/kg		WG787134	05/09/15 04:55
Cyanide	< .25	mg/kg		WG787733	05/12/15 10:23

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Chromium, Hexavalent	mg/kg	0.0	0.0	0.0	20	L762970-04	WG786845
pH	su	7.80	7.80	0.385	1	L762507-04	WG787133
pH	su	8.00	8.10	1.12*	1	L763345-03	WG787133
pH	su	7.60	7.60	0.656	1	L762972-04	WG787168
pH	su	6.70	6.70	0.449	1	L763354-01	WG787168
Chromium, Hexavalent	mg/kg	0.0	0.0	0.0	20	L762972-07	WG787134
ORP	mV	70.0	70.0	0.0	20	L762970-02	WG787860
ORP	mV	140.	140.	0.0	20	L762978-01	WG787860
Cyanide	mg/kg	0.0	0.0	0.0	20	L762970-02	WG787733
Cyanide	mg/kg	0.0	0.0	0.0	20	L762976-05	WG787733

Analyte	Units	Laboratory Control Known Val	Sample Result	% Rec	Limit	Batch
Chromium, Hexavalent	mg/kg	59.8	65.2	109.	80-120	WG786845
pH	su	7.84	7.82	99.7	98.3-101.7	WG787133
pH	su	7.84	7.80	99.5	98.3-101.7	WG787168
Chromium, Hexavalent	mg/kg	59.8	66.4	111.	80-120	WG787134
ORP	mV	100	100.	100.	90-110	WG787860
Cyanide	mg/kg	101	102.	101.	50-150	WG787733

Analyte	Units	Laboratory Control Result	Sample Ref	Duplicate % Rec	Limit	RPD	Limit	Batch
Chromium, Hexavalent	mg/kg	65.8	65.2	110.	80-120	0.916	20	WG786845
pH	su	7.81	7.82	100.	98.3-101.7	0.128	20	WG787133

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



L.A.B S.C.I.E.N.C.E.S

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Hall Environmental Analysis Laboratory

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Quality Assurance Report
Level II

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May 13, 2015

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
pH	su	7.80	7.80	99.0	98.3-101.7	0.0	20	WG787168
Chromium, Hexavalent	mg/kg	66.6	66.4	111.	80-120	0.301	20	WG787134
ORP	mV	100.	100.	100.	90-110	0.0	20	WG787860
Cyanide	mg/kg	107.	102.	106.	50-150	4.78	20	WG787733

Analyte	Units	MS Res	Matrix Spike			Limit	Ref Samp	Batch
			Ref Res	TV	% Rec			
Chromium, Hexavalent	mg/kg	20.8	0.0	20	100.	75-125	L762970-04	WG786845
Chromium, Hexavalent	mg/kg	19.3	0.0	20	96.0	75-125	L762972-07	WG787134

Analyte	Units	MSD	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec						
Chromium, Hexavalent	mg/kg	20.8	20.8	104.		75-125	0.0	20	L762970-04	WG786845
Chromium, Hexavalent	mg/kg	19.5	19.3	97.5		75-125	1.03	20	L762972-07	WG787134

Batch number / Run number / Sample number cross reference

WG786845: R3035419: L762972-01 02 03 04 05
WG787133: R3035650: L762972-01 02 03
WG787168: R3035796: L762972-04 05 06 07
WG787134: R3035910: L762972-06 07
WG787860: R3036066: L762972-01 02 03 04 05 06 07
WG787733: R3036388: L762972-01 02 03 04 05 06 07

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505057

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19001	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID:	PBS	Batch ID: 19001		RunNo: 25956						
Prep Date:	5/1/2015	Analysis Date: 5/5/2015		SeqNo: 769479			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	12		10.00		116	57.9	140			

Sample ID	LCS-19001		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 19001		RunNo: 25956					
Prep Date:	5/1/2015		Analysis Date: 5/5/2015		SeqNo: 769591		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	67.8	130			
Surr: DNOP	6.3		5.000		127	57.9	140			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505057

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19008		SampType: MBLK		TestCode: EPA Method 8260B: Volatiles					
Client ID:	PBS		Batch ID: 19008		RunNo: 25941					
Prep Date:	5/1/2015		Analysis Date: 5/4/2015		SeqNo: 768949		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0091	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	0.054	0.75								J
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	0.038	0.50								J
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	0.0048	0.050								J
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	0.012	0.050								J
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505057

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19008		SampType:	MBLK		TestCode:	EPA Method 8260B: Volatiles			
Client ID:	PBS		Batch ID:	19008		RunNo:	25941			
Prep Date:	5/1/2015		Analysis Date:	5/4/2015		SeqNo:	768949		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.51		0.5000		102	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.1	70	130			
Surr: Toluene-d8	0.46		0.5000		92.4	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		91.7	70	130			

Sample ID	lcs-19008		SampType:	LCS		TestCode:	EPA Method 8260B: Volatiles			
Client ID:	LCSS		Batch ID:	19008		RunNo:	25941			
Prep Date:	5/1/2015		Analysis Date:	5/4/2015		SeqNo:	768950		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.050	1.000	0	97.5	70	130			
Toluene	0.89	0.050	1.000	0	89.1	70	130			
Chlorobenzene	1.0	0.050	1.000	0	99.7	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505057

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-19008		SampType: LCS		TestCode: EPA Method 8260B: Volatiles					
Client ID:	LCSS		Batch ID: 19008		RunNo: 25941					
Prep Date:	5/1/2015		Analysis Date: 5/4/2015		SeqNo: 768950		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.2	0.050	1.000	0	123	60.6	134			
Trichloroethene (TCE)	0.90	0.050	1.000	0	90.3	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		103	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.7	70	130			
Surr: Toluene-d8	0.44		0.5000		88.0	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.9	70	130			

Sample ID	5mL rb	SampType: MBLK			TestCode: EPA Method 8260B: Volatiles					
Client ID:	PBS	Batch ID: R25982			RunNo: 25982					
Prep Date:		Analysis Date: 5/5/2015			SeqNo: 770974		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0083	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505057

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5mL rb	SampType: MBLK			TestCode: EPA Method 8260B: Volatiles					
Client ID:	PBS	Batch ID: R25982			RunNo: 25982					
Prep Date:		Analysis Date: 5/5/2015			SeqNo: 770974		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.49		0.5000		98.1	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505057

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260B: Volatiles					
Client ID:	PBS	Batch ID:	R25982	RunNo:	25982					
Prep Date:		Analysis Date:	5/5/2015	SeqNo:	770974	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		89.0	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		100	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: Volatiles					
Client ID:	LCSS	Batch ID:	R25982	RunNo:	25982					
Prep Date:		Analysis Date:	5/5/2015	SeqNo:	770975	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	101	70	130			
Toluene	1.1	0.050	1.000	0	105	70	130			
Chlorobenzene	1.0	0.050	1.000	0	102	70	130			
1,1-Dichloroethene	1.2	0.050	1.000	0	116	60.6	134			
Trichloroethene (TCE)	0.92	0.050	1.000	0	92.4	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		99.5	70	130			
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		91.1	70	130			
Surr: Toluene-d8	0.51		0.5000		103	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.2	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505057

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-19032		SampType: LCS			TestCode: Method 8260B/5035LOW: VOLATILES				
Client ID:	LCSS		Batch ID: 19032			RunNo: 26013				
Prep Date:	5/4/2015		Analysis Date: 5/6/2015			SeqNo: 771128		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0108	0.00200	0.01000	0	108	70	130			
Toluene	0.00992	0.00200	0.01000	0	99.2	70	130			
Chlorobenzene	0.00872	0.00200	0.01000	0	87.2	70	130			
1,1-Dichloroethene	0.0112	0.00200	0.01000	0	112	70	130			
Trichloroethene (TCE)	0.0105	0.00200	0.01000	0	105	61.6	131			
Surr: 1,2-Dichloroethane-d4	0.0266		0.02500		106	70	130			
Surr: 4-Bromofluorobenzene	0.0221		0.02500		88.5	70	130			
Surr: Dibromofluoromethane	0.0266		0.02500		107	70	130			
Surr: Toluene-d8	0.0248		0.02500		99.4	70	130			

Sample ID	MB-19032		SampType: MBLK			TestCode: Method 8260B/5035LOW: VOLATILES				
Client ID:	PBS		Batch ID: 19032			RunNo: 26013				
Prep Date:	5/4/2015		Analysis Date: 5/6/2015			SeqNo: 771129		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	0.000210	0.00200								J
Ethylbenzene	ND	0.00200								
Xylenes, Total	ND	0.00200								
Methyl tert-butyl ether (MTBE)	ND	0.00200								
1,2,4-Trimethylbenzene	ND	0.00200								
1,3,5-Trimethylbenzene	ND	0.00200								
1,2-Dichloroethane (EDC)	ND	0.00200								
1,2-Dibromoethane (EDB)	ND	0.00200								
Naphthalene	ND	0.00200								
1-Methylnaphthalene	ND	0.00400								
2-Methylnaphthalene	ND	0.00400								
Acetone	ND	0.0100								
Bromobenzene	ND	0.00200								
Bromodichloromethane	ND	0.00200								
Bromoform	ND	0.00200								
Bromomethane	ND	0.00300								
2-Butanone	0.000830	0.0100								J
Carbon tetrachloride	ND	0.00200								
Chlorobenzene	ND	0.00200								
Chloroethane	ND	0.00200								
Chloroform	ND	0.00200								
Chloromethane	ND	0.00200								
2-Chlorotoluene	ND	0.00200								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505057

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19032		SampType: MBLK		TestCode: Method 8260B/5035LOW: VOLATILES					
Client ID:	PBS		Batch ID: 19032		RunNo: 26013					
Prep Date:	5/4/2015		Analysis Date: 5/6/2015		SeqNo: 771129		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Carbon disulfide	ND	0.0100								
4-Chlorotoluene	ND	0.00200								
cis-1,2-DCE	ND	0.00200								
cis-1,3-Dichloropropene	ND	0.00200								
1,2-Dibromo-3-chloropropane	ND	0.00200								
Dibromochloromethane	ND	0.00200								
Dibromomethane	ND	0.00200								
1,2-Dichlorobenzene	ND	0.00200								
1,3-Dichlorobenzene	ND	0.00200								
1,4-Dichlorobenzene	ND	0.00200								
Dichlorodifluoromethane	ND	0.00200								
1,1-Dichloroethane	ND	0.00200								
1,1-Dichloroethene	ND	0.00200								
1,2-Dichloropropane	ND	0.00200								
1,3-Dichloropropane	ND	0.00200								
2,2-Dichloropropane	ND	0.00200								
1,1-Dichloropropene	ND	0.00200								
Hexachlorobutadiene	ND	0.00200								
Isopropylbenzene	ND	0.00200								
4-Isopropyltoluene	ND	0.00200								
Methylene chloride	ND	0.00200								
n-Butylbenzene	ND	0.00200								
2-Hexanone	ND	0.0100								
n-Propylbenzene	ND	0.00200								
sec-Butylbenzene	ND	0.00200								
Styrene	ND	0.00200								
4-Methyl-2-pentanone	ND	0.0100								
tert-Butylbenzene	ND	0.00200								
1,1,1,2-Tetrachloroethane	ND	0.00200								
1,1,2,2-Tetrachloroethane	ND	0.00200								
Tetrachloroethene (PCE)	ND	0.00200								
trans-1,2-DCE	ND	0.00200								
trans-1,3-Dichloropropene	ND	0.00200								
1,2,3-Trichlorobenzene	ND	0.00200								
1,2,4-Trichlorobenzene	ND	0.00200								
1,1,1-Trichloroethane	ND	0.00200								
1,1,2-Trichloroethane	ND	0.00200								
Trichloroethene (TCE)	ND	0.00200								
Trichlorofluoromethane	ND	0.00200								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505057

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19032		SampType:	MBLK		TestCode:	Method 8260B/5035LOW: VOLATILES			
Client ID:	PBS		Batch ID:	19032		RunNo:	26013			
Prep Date:	5/4/2015		Analysis Date:	5/6/2015		SeqNo:	771129		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2,3-Trichloropropane	ND	0.00200								
Vinyl chloride	ND	0.00200								
Surr: 1,2-Dichloroethane-d4	0.0275		0.02500		110	70	130			
Surr: 4-Bromofluorobenzene	0.0232		0.02500		93.0	70	130			
Surr: Dibromofluoromethane	0.0276		0.02500		110	70	130			
Surr: Toluene-d8	0.0239		0.02500		95.4	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505057

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19054	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBS	Batch ID:	19054	RunNo:	26018					
Prep Date:	5/5/2015	Analysis Date:	5/6/2015	SeqNo:	771331	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3'-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505057

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19054	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBS	Batch ID:	19054	RunNo:	26018					
Prep Date:	5/5/2015	Analysis Date:	5/6/2015	SeqNo:	771331	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	1.9		3.330		58.4	26.4	129			
Surr: Phenol-d5	2.2		3.330		65.5	34.8	118			
Surr: 2,4,6-Tribromophenol	2.3		3.330		70.3	26.8	128			
Surr: Nitrobenzene-d5	1.1		1.670		65.7	35.8	124			
Surr: 2-Fluorobiphenyl	1.1		1.670		67.9	24.5	139			
Surr: 4-Terphenyl-d14	1.8		1.670		108	29.4	129			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505057

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-19054		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS		Batch ID: 19054		RunNo: 26018					
Prep Date:	5/5/2015		Analysis Date: 5/6/2015		SeqNo: 771332		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.1	0.20	1.670	0	64.2	45.8	114			
4-Chloro-3-methylphenol	2.4	0.50	3.330	0	72.5	52.3	122			
2-Chlorophenol	2.1	0.20	3.330	0	61.9	49.9	115			
1,4-Dichlorobenzene	1.0	0.20	1.670	0	62.1	43.7	107			
2,4-Dinitrotoluene	0.91	0.50	1.670	0	54.7	36	106			
N-Nitrosodi-n-propylamine	1.1	0.20	1.670	0	66.8	39.5	110			
4-Nitrophenol	2.2	0.25	3.330	0	64.7	45.1	121			
Pentachlorophenol	1.9	0.40	3.330	0	57.2	23.7	111			
Phenol	2.2	0.20	3.330	0	66.1	52.7	119			
Pyrene	1.0	0.20	1.670	0	61.3	50.4	116			
1,2,4-Trichlorobenzene	1.2	0.20	1.670	0	72.1	40.1	114			
Surr: 2-Fluorophenol	1.8		3.330		55.1	26.4	129			
Surr: Phenol-d5	2.1		3.330		63.9	34.8	118			
Surr: 2,4,6-Tribromophenol	1.9		3.330		58.5	26.8	128			
Surr: Nitrobenzene-d5	1.1		1.670		62.9	35.8	124			
Surr: 2-Fluorobiphenyl	1.0		1.670		61.8	24.5	139			
Surr: 4-Terphenyl-d14	1.3		1.670		75.1	29.4	129			

Sample ID	mb-19026		SampType: MBLK		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	PBS		Batch ID: 19026		RunNo: 26053					
Prep Date:	5/4/2015		Analysis Date: 5/7/2015		SeqNo: 772520		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	2.6		3.330		79.4	26.4	129			
Surr: Phenol-d5	2.7		3.330		80.7	34.8	118			
Surr: 2,4,6-Tribromophenol	2.5		3.330		75.6	26.8	128			
Surr: Nitrobenzene-d5	1.3		1.670		76.1	35.8	124			
Surr: 2-Fluorobiphenyl	1.4		1.670		81.2	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		88.4	29.4	129			

Sample ID	Ics-19026		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS		Batch ID: 19026		RunNo: 26053					
Prep Date:	5/4/2015		Analysis Date: 5/7/2015		SeqNo: 772521		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	2.6		3.330		78.7	26.4	129			
Surr: Phenol-d5	2.7		3.330		81.5	34.8	118			
Surr: 2,4,6-Tribromophenol	3.0		3.330		91.3	26.8	128			
Surr: Nitrobenzene-d5	1.4		1.670		83.7	35.8	124			
Surr: 2-Fluorobiphenyl	1.5		1.670		90.8	24.5	139			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505057

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-19026		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS		Batch ID: 19026		RunNo: 26053					
Prep Date:	5/4/2015		Analysis Date: 5/7/2015		SeqNo: 772521		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	1.5		1.670		87.3	29.4	129			

Sample ID	MB-19087		SampType: MBLK		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	PBS		Batch ID: 19087		RunNo: 26117					
Prep Date:	5/6/2015		Analysis Date: 5/11/2015		SeqNo: 774670		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505057

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19087	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBS	Batch ID:	19087	RunNo:	26117					
Prep Date:	5/6/2015	Analysis Date:	5/11/2015	SeqNo:	774670	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
3,3'-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.8		3.330		85.4	26.4	129			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505057

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19087		SampType: MBLK		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	PBS		Batch ID: 19087		RunNo: 26117					
Prep Date:	5/6/2015		Analysis Date: 5/11/2015		SeqNo: 774670		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Phenol-d5	2.8		3.330		84.8	34.8	118			
Surr: 2,4,6-Tribromophenol	2.9		3.330		86.3	26.8	128			
Surr: Nitrobenzene-d5	1.5		1.670		90.3	35.8	124			
Surr: 2-Fluorobiphenyl	1.7		1.670		98.8	24.5	139			
Surr: 4-Terphenyl-d14	1.4		1.670		84.6	29.4	129			

Sample ID	lcs-19087		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS		Batch ID: 19087		RunNo: 26117					
Prep Date:	5/6/2015		Analysis Date: 5/11/2015		SeqNo: 774671		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.2	0.20	1.670	0	72.6	45.8	114			
4-Chloro-3-methylphenol	2.5	0.50	3.330	0	74.7	52.3	122			
2-Chlorophenol	2.4	0.20	3.330	0	70.8	49.9	115			
1,4-Dichlorobenzene	1.2	0.20	1.670	0	71.5	43.7	107			
2,4-Dinitrotoluene	1.0	0.50	1.670	0	60.6	36	106			
N-Nitrosodi-n-propylamine	1.2	0.20	1.670	0	73.6	39.5	110			
4-Nitrophenol	2.5	0.25	3.330	0	75.7	45.1	121			
Pentachlorophenol	2.3	0.40	3.330	0	69.3	23.7	111			
Phenol	2.5	0.20	3.330	0	74.1	52.7	119			
Pyrene	1.1	0.20	1.670	0	68.6	50.4	116			
1,2,4-Trichlorobenzene	1.5	0.20	1.670	0	87.6	40.1	114			
Surr: 2-Fluorophenol	2.6		3.330		76.8	26.4	129			
Surr: Phenol-d5	2.6		3.330		78.4	34.8	118			
Surr: 2,4,6-Tribromophenol	2.7		3.330		82.5	26.8	128			
Surr: Nitrobenzene-d5	1.5		1.670		87.0	35.8	124			
Surr: 2-Fluorobiphenyl	1.4		1.670		81.6	24.5	139			
Surr: 4-Terphenyl-d14	1.0		1.670		61.0	29.4	129			

Sample ID	1505057-004Bms		SampType: MS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	SWMU 10-9DUP02		Batch ID: 19087		RunNo: 26117					
Prep Date:	5/6/2015		Analysis Date: 5/11/2015		SeqNo: 774677		Units: mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.7	0.24	1.964	0	84.2	36.3	121			
4-Chloro-3-methylphenol	3.1	0.59	3.916	0	78.1	48.2	119			
2-Chlorophenol	2.9	0.24	3.916	0	75.3	37.2	114			
1,4-Dichlorobenzene	1.6	0.24	1.964	0	81.7	28.8	106			
2,4-Dinitrotoluene	2.0	0.59	1.964	0	100	34.6	111			
N-Nitrosodi-n-propylamine	2.0	0.24	1.964	0	101	32.7	117			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505057

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	1505057-004Bms	SampType: MS			TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	SWMU 10-9DUP02	Batch ID: 19087			RunNo: 26117					
Prep Date:	5/6/2015	Analysis Date: 5/11/2015			SeqNo: 774677		Units: mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Nitrophenol	3.7	0.29	3.916	0	94.7	30.1	134			
Pentachlorophenol	2.6	0.47	3.916	0	66.9	24	120			
Phenol	3.1	0.24	3.916	0	80.2	38.3	118			
Pyrene	1.7	0.24	1.964	0	84.7	38.3	134			
1,2,4-Trichlorobenzene	1.7	0.24	1.964	0	84.2	31.8	110			
Surr: 2-Fluorophenol	3.2		3.916		82.5	26.4	129			
Surr: Phenol-d5	3.2		3.916		81.7	34.8	118			
Surr: 2,4,6-Tribromophenol	2.6		3.916		66.5	26.8	128			
Surr: Nitrobenzene-d5	1.6		1.964		80.3	35.8	124			
Surr: 2-Fluorobiphenyl	1.5		1.964		76.1	24.5	139			
Surr: 4-Terphenyl-d14	1.2		1.964		62.9	29.4	129			

Sample ID	1505057-004Bmsd		SampType: MSD		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	SWMU 10-9DUP02		Batch ID: 19087		RunNo: 26117					
Prep Date:	5/6/2015		Analysis Date: 5/11/2015		SeqNo: 774678		Units: mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	2.0	0.24	1.971	0	100	36.3	121	18.0	25.4	
4-Chloro-3-methylphenol	2.9	0.59	3.930	0	72.7	48.2	119	6.77	30.4	
2-Chlorophenol	2.8	0.24	3.930	0	72.1	37.2	114	3.91	33.4	
1,4-Dichlorobenzene	1.5	0.24	1.971	0	75.4	28.8	106	7.67	20.9	
2,4-Dinitrotoluene	2.1	0.59	1.971	0	105	34.6	111	5.69	27.9	
N-Nitrosodi-n-propylamine	1.8	0.24	1.971	0	93.0	32.7	117	7.78	27.5	
4-Nitrophenol	3.3	0.30	3.930	0	84.3	30.1	134	11.3	33.7	
Pentachlorophenol	2.2	0.47	3.930	0	55.5	24	120	18.2	39.7	
Phenol	2.9	0.24	3.930	0	72.9	38.3	118	9.17	30.1	
Pyrene	1.7	0.24	1.971	0	85.5	38.3	134	1.33	22.7	
1,2,4-Trichlorobenzene	1.5	0.24	1.971	0	76.8	31.8	110	8.76	27.8	
Surr: 2-Fluorophenol	3.0		3.930		76.0	26.4	129	0	0	
Surr: Phenol-d5	3.0		3.930		75.1	34.8	118	0	0	
Surr: 2,4,6-Tribromophenol	2.0		3.930		51.5	26.8	128	0	0	
Surr: Nitrobenzene-d5	1.6		1.971		80.7	35.8	124	0	0	
Surr: 2-Fluorobiphenyl	1.4		1.971		69.9	24.5	139	0	0	
Surr: 4-Terphenyl-d14	1.2		1.971		60.4	29.4	129	0	0	

Sample ID	mb-19157		SampType: MBLK			TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	PBS		Batch ID: 19157			RunNo: 26173					
Prep Date:	5/11/2015		Analysis Date: 5/13/2015			SeqNo: 776628		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505057

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19157		SampType: MBLK		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	PBS		Batch ID: 19157		RunNo: 26173					
Prep Date:	5/11/2015		Analysis Date: 5/13/2015		SeqNo: 776628		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3'-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505057

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19157		SampType: MBLK			TestCode: EPA Method 8270C: Semivolatiles				
Client ID:	PBS		Batch ID: 19157			RunNo: 26173				
Prep Date:	5/11/2015		Analysis Date: 5/13/2015			SeqNo: 776628		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.5		3.330		75.2	26.4	129			
Surr: Phenol-d5	2.5		3.330		73.9	34.8	118			
Surr: 2,4,6-Tribromophenol	2.7		3.330		80.2	26.8	128			
Surr: Nitrobenzene-d5	1.3		1.670		78.9	35.8	124			
Surr: 2-Fluorobiphenyl	1.4		1.670		82.1	24.5	139			
Surr: 4-Terphenyl-d14	1.3		1.670		77.5	29.4	129			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505057

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-19157		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS		Batch ID: 19157		RunNo: 26173					
Prep Date:	5/11/2015		Analysis Date: 5/13/2015		SeqNo: 776629		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.1	0.20	1.670	0	64.5	45.8	114			
4-Chloro-3-methylphenol	2.1	0.50	3.330	0	64.3	52.3	122			
2-Chlorophenol	2.0	0.20	3.330	0	59.0	49.9	115			
1,4-Dichlorobenzene	1.1	0.20	1.670	0	65.4	43.7	107			
2,4-Dinitrotoluene	0.92	0.50	1.670	0	55.3	36	106			
N-Nitrosodi-n-propylamine	0.92	0.20	1.670	0	55.4	39.5	110			
4-Nitrophenol	2.3	0.25	3.330	0	69.0	45.1	121			
Pentachlorophenol	2.1	0.40	3.330	0	63.3	23.7	111			
Phenol	2.1	0.20	3.330	0	63.1	52.7	119			
Pyrene	0.95	0.20	1.670	0	57.1	50.4	116			
1,2,4-Trichlorobenzene	1.3	0.20	1.670	0	75.2	40.1	114			
Surr: 2-Fluorophenol	2.3		3.330		67.8	26.4	129			
Surr: Phenol-d5	2.3		3.330		70.4	34.8	118			
Surr: 2,4,6-Tribromophenol	2.5		3.330		74.6	26.8	128			
Surr: Nitrobenzene-d5	1.2		1.670		71.3	35.8	124			
Surr: 2-Fluorobiphenyl	1.2		1.670		72.2	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		91.5	29.4	129			

Sample ID	1505057-007Bms	SampType: MS			TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	SWMU 10-8 (18-20')	Batch ID: 19157			RunNo: 26173					
Prep Date:	5/11/2015	Analysis Date: 5/13/2015			SeqNo: 776631		Units: mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.1	0.23	1.925	0	57.3	36.3	121			
4-Chloro-3-methylphenol	2.3	0.58	3.839	0	58.6	48.2	119			
2-Chlorophenol	1.9	0.23	3.839	0	49.6	37.2	114			
1,4-Dichlorobenzene	1.0	0.23	1.925	0	52.9	28.8	106			
2,4-Dinitrotoluene	0.94	0.58	1.925	0	48.6	34.6	111			
N-Nitrosodi-n-propylamine	1.1	0.23	1.925	0	57.5	32.7	117			
4-Nitrophenol	2.3	0.29	3.839	0	59.6	30.1	134			
Pentachlorophenol	2.2	0.46	3.839	0.1505	52.7	24	120			
Phenol	2.1	0.23	3.839	0	55.1	38.3	118			
Pyrene	0.96	0.23	1.925	0	50.0	38.3	134			
1,2,4-Trichlorobenzene	1.1	0.23	1.925	0	58.0	31.8	110			
Surr: 2-Fluorophenol	2.2		3.839		56.5	26.4	129			
Surr: Phenol-d5	2.2		3.839		58.4	34.8	118			
Surr: 2,4,6-Tribromophenol	2.5		3.839		65.9	26.8	128			
Surr: Nitrobenzene-d5	1.1		1.925		57.0	35.8	124			
Surr: 2-Fluorobiphenyl	1.2		1.925		63.4	24.5	139			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505057

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	1505057-007Bms	SampType:	MS	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	SWMU 10-8 (18-20')	Batch ID:	19157	RunNo:	26173					
Prep Date:	5/11/2015	Analysis Date:	5/13/2015	SeqNo:	776631	Units:	mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	1.1		1.925		55.2	29.4	129			

Sample ID	1505057-007Bmsd	SampType:	MSD	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	SWMU 10-8 (18-20')	Batch ID:	19157	RunNo:	26173					
Prep Date:	5/11/2015	Analysis Date:	5/13/2015	SeqNo:	776632	Units:	mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.1	0.23	1.936	0	58.5	36.3	121	2.67	25.4	
4-Chloro-3-methylphenol	2.4	0.58	3.860	0	61.0	48.2	119	4.55	30.4	
2-Chlorophenol	1.9	0.23	3.860	0	50.1	37.2	114	1.64	33.4	
1,4-Dichlorobenzene	1.0	0.23	1.936	0	53.4	28.8	106	1.47	20.9	
2,4-Dinitrotoluene	0.96	0.58	1.936	0	49.6	34.6	111	2.52	27.9	
N-Nitrosodi-n-propylamine	1.1	0.23	1.936	0	59.2	32.7	117	3.34	27.5	
4-Nitrophenol	2.4	0.29	3.860	0	62.6	30.1	134	5.42	33.7	
Pentachlorophenol	2.2	0.46	3.860	0.1505	53.7	24	120	2.23	39.7	
Phenol	2.1	0.23	3.860	0	55.5	38.3	118	1.36	30.1	
Pyrene	0.99	0.23	1.936	0	51.3	38.3	134	3.13	22.7	
1,2,4-Trichlorobenzene	1.2	0.23	1.936	0	61.5	31.8	110	6.24	27.8	
Surr: 2-Fluorophenol	2.1		3.860		55.5	26.4	129	0	0	
Surr: Phenol-d5	2.3		3.860		60.6	34.8	118	0	0	
Surr: 2,4,6-Tribromophenol	2.6		3.860		66.4	26.8	128	0	0	
Surr: Nitrobenzene-d5	1.1		1.936		56.1	35.8	124	0	0	
Surr: 2-Fluorobiphenyl	1.2		1.936		62.6	24.5	139	0	0	
Surr: 4-Terphenyl-d14	1.1		1.936		55.7	29.4	129	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505057

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19227		SampType: MBLK		TestCode: EPA Method 7471: Mercury					
Client ID:	PBS		Batch ID: 19227		RunNo: 26201					
Prep Date:	5/14/2015		Analysis Date: 5/14/2015		SeqNo: 777418		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	LCS-19227		SampType: LCS		TestCode: EPA Method 7471: Mercury					
Client ID:	LCSS		Batch ID: 19227		RunNo: 26201					
Prep Date:	5/14/2015		Analysis Date: 5/14/2015		SeqNo: 777419		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	100	80	120			

Sample ID	MB-19445		SampType: MBLK		TestCode: EPA Method 7471: Mercury					
Client ID:	PBS		Batch ID: 19445		RunNo: 26497					
Prep Date:	5/28/2015		Analysis Date: 5/29/2015		SeqNo: 787358		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	LCS-19445		SampType: LCS		TestCode: EPA Method 7471: Mercury					
Client ID:	LCSS		Batch ID: 19445		RunNo: 26497					
Prep Date:	5/28/2015		Analysis Date: 5/29/2015		SeqNo: 787359		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	99.7	80	120			

Sample ID	1505057-001BMS		SampType: MS		TestCode: EPA Method 7471: Mercury					
Client ID:	SWMU 10-9 (2-4')		Batch ID: 19445		RunNo: 26497					
Prep Date:	5/28/2015		Analysis Date: 5/29/2015		SeqNo: 787390		Units: mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.34	0.21	0.2110	0.07022	127	75	125			S

Sample ID	1505057-001BMSD		SampType: MSD		TestCode: EPA Method 7471: Mercury					
Client ID:	SWMU 10-9 (2-4')		Batch ID: 19445		RunNo: 26497					
Prep Date:	5/28/2015		Analysis Date: 5/29/2015		SeqNo: 787391		Units: mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.41	0.20	0.1970	0.07022	172	75	125	19.2	20	S

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505057

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS-19081		SampType: LCS			TestCode: EPA Method 6010B: Soil Metals				
Client ID:	LCSS		Batch ID: 19081			RunNo: 26050				
Prep Date:	5/6/2015		Analysis Date: 5/7/2015			SeqNo: 772230		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	25	2.5	25.00	0	99.7	80	120			
Arsenic	25	2.5	25.00	0	99.5	80	120			
Barium	24	0.10	25.00	0	97.4	80	120			
Beryllium	26	0.15	25.00	0	105	80	120			
Cadmium	25	0.10	25.00	0	98.6	80	120			
Chromium	25	0.30	25.00	0	99.6	80	120			
Cobalt	24	0.30	25.00	0	97.1	80	120			
Iron	26	2.5	25.00	0	104	80	120			B
Lead	25	0.25	25.00	0	99.3	80	120			
Manganese	25	0.10	25.00	0	98.4	80	120			
Nickel	24	0.50	25.00	0	96.7	80	120			
Selenium	25	2.5	25.00	0	102	80	120			
Silver	5.2	0.25	5.000	0	105	80	120			
Vanadium	26	2.5	25.00	0	103	80	120			
Zinc	25	2.5	25.00	0	98.1	80	120			

Sample ID	MB-19081		SampType: MBLK			TestCode: EPA Method 6010B: Soil Metals				
Client ID:	PBS		Batch ID: 19081			RunNo: 26050				
Prep Date:	5/6/2015		Analysis Date: 5/7/2015			SeqNo: 772232		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	3.8	2.5								
Lead	0.14	0.25								J
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505057

08-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	PBS	Batch ID:	R25941	RunNo:	25941					
Prep Date:		Analysis Date:	5/4/2015	SeqNo:	770909	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	470		500.0		93.3	67.4	150			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	LCSS	Batch ID:	R25941	RunNo:	25941					
Prep Date:		Analysis Date:	5/4/2015	SeqNo:	770910	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.6	79.9	135			
Surr: BFB	470		500.0		93.3	67.4	150			

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	PBS	Batch ID:	R25982	RunNo:	25982					
Prep Date:		Analysis Date:	5/5/2015	SeqNo:	771006	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	470		500.0		94.7	67.4	150			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	LCSS	Batch ID:	R25982	RunNo:	25982					
Prep Date:		Analysis Date:	5/5/2015	SeqNo:	771007	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.5	79.9	135			
Surr: BFB	460		500.0		92.6	67.4	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit



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

Sample Log-In Check List

Client Name: **Western Refining Gallup**

Work Order Number: **1505057**

RcptNo: 1

Received by/date:

AT

05/01/15

Logged By: **Lindsay Mangin**

5/1/2015 1:50:00 PM

Completed By: **Lindsay Mangin**

5/2/2015 10:01:27 AM

Reviewed By:

Ag

05/04/15

Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☒

No ☐

Not Present ☐

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Client

Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

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

Yes ☒

No ☐

NA ☐

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

Yes ☒

No ☐

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

Yes ☒

No ☐

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

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☐

No ☐

No VOA Vials ☒

11. Were any sample containers received broken?

Yes ☐

No ☒

12. Does paperwork match bottle labels?

Yes ☒

No ☐

(Note discrepancies on chain of custody)

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

Yes ☒

No ☐

(If no, notify customer for authorization.)

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted?

Checked by:

Special Handling (if applicable)

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

Yes ☐

No ☐

NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

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

WESTERN REFINING SOUTHWEST, INC.
GALLUP REFINERY - SWMU 10
METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020



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

October 12, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10

OrderNo.: 1505058

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 3 sample(s) on 5/1/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 14, 2015.

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#: 1505058
Date: 10/12/2015

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding EPA Method 8015 and 8270:
The surrogates with "S" flags are unrecoverable due to sample dilution and matrix interferences.

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505058

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-10 (2-4')

Project: SWMU 10

Collection Date: 4/30/2015 3:30:00 PM

Lab ID: 1505058-001

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	59	5.5	9.9		mg/Kg-dr	1	5/5/2015 10:54:12 PM	19040
Motor Oil Range Organics (MRO)	98	50	50		mg/Kg-dr	1	5/5/2015 10:54:12 PM	19040
Surr: DNOP	119	0	57.9-140		%REC	1	5/5/2015 10:54:12 PM	19040
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	12	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.044	0.0032	0.036		mg/Kg-dr	1	5/14/2015 3:43:58 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.4	2.7		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Arsenic	2.4	0.32	2.7	J	mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Barium	450	0.065	0.22		mg/Kg-dr	2	5/7/2015 2:49:05 PM	19081
Beryllium	0.28	0.0081	0.16		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Chromium	13	0.066	0.33		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Cobalt	3.1	0.042	0.33		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Iron	9200	66	270		mg/Kg-dr	100	5/7/2015 11:35:25 AM	19081
Lead	4.1	0.12	0.27		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Manganese	94	0.064	0.11		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Nickel	4.4	0.14	0.55		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Selenium	ND	1.7	2.7		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Silver	ND	0.033	0.27		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Vanadium	21	0.037	2.7		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
Zinc	15	0.71	2.7		mg/Kg-dr	1	5/7/2015 2:47:41 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.28	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Acenaphthylene	ND	0.23	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Aniline	ND	0.20	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Anthracene	ND	0.19	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Azobenzene	ND	0.25	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Benz(a)anthracene	ND	0.18	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Benzo(a)pyrene	ND	0.26	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Benzo(b)fluoranthene	ND	0.22	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Benzo(g,h,i)perylene	ND	0.26	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Benzo(k)fluoranthene	ND	0.26	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Benzoic acid	ND	0.13	1.1		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Benzyl alcohol	ND	0.20	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Bis(2-chloroethoxy)methane	ND	0.22	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-10 (2-4')

Project: SWMU 10

Collection Date: 4/30/2015 3:30:00 PM

Lab ID: 1505058-001

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Bis(2-chloroethyl)ether	ND	0.22	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.17	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.26	1.1		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
4-Bromophenyl phenyl ether	ND	0.24	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Butyl benzyl phthalate	ND	0.28	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Carbazole	ND	0.21	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
4-Chloro-3-methylphenol	ND	0.23	1.1		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
4-Chloroaniline	ND	0.21	1.1		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2-Chloronaphthalene	ND	0.24	0.57		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2-Chlorophenol	ND	0.21	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
4-Chlorophenyl phenyl ether	ND	0.34	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Chrysene	ND	0.23	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Di-n-butyl phthalate	ND	0.26	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Di-n-octyl phthalate	ND	0.25	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Dibenz(a,h)anthracene	ND	0.25	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Dibenzofuran	ND	0.24	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
1,2-Dichlorobenzene	ND	0.22	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
1,3-Dichlorobenzene	ND	0.20	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
1,4-Dichlorobenzene	ND	0.24	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
3,3'-Dichlorobenzidine	ND	0.18	0.57		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Diethyl phthalate	ND	0.26	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Dimethyl phthalate	ND	0.21	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2,4-Dichlorophenol	ND	0.23	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2,4-Dimethylphenol	ND	0.18	0.68		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.12	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2,4-Dinitrophenol	ND	0.094	1.1		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2,4-Dinitrotoluene	ND	0.20	1.1		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2,6-Dinitrotoluene	ND	0.25	1.1		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Fluoranthene	ND	0.28	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Fluorene	ND	0.31	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Hexachlorobenzene	ND	0.21	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Hexachlorobutadiene	ND	0.22	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Hexachlorocyclopentadiene	ND	0.16	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Hexachloroethane	ND	0.20	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.26	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Isophorone	ND	0.24	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
1-Methylnaphthalene	ND	0.21	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2-Methylnaphthalene	ND	0.21	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2-Methylphenol	ND	0.23	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505058

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-10 (2-4')

Project: SWMU 10

Collection Date: 4/30/2015 3:30:00 PM

Lab ID: 1505058-001

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	ND	0.24	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
N-Nitrosodi-n-propylamine	ND	0.24	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
N-Nitrosodiphenylamine	ND	0.20	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Naphthalene	ND	0.22	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2-Nitroaniline	ND	0.26	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
3-Nitroaniline	ND	0.22	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
4-Nitroaniline	ND	0.20	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Nitrobenzene	ND	0.23	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2-Nitrophenol	ND	0.20	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
4-Nitrophenol	ND	0.20	0.57		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Pentachlorophenol	ND	0.14	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Phenanthrene	ND	0.24	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Phenol	ND	0.20	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Pyrene	ND	0.29	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Pyridine	ND	0.19	0.91		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
1,2,4-Trichlorobenzene	ND	0.23	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2,4,5-Trichlorophenol	ND	0.26	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
2,4,6-Trichlorophenol	ND	0.26	0.46		mg/Kg-dr	1	5/13/2015 4:01:32 PM	19157
Surr: 2-Fluorophenol	59.3		26.4-129		%REC	1	5/13/2015 4:01:32 PM	19157
Surr: Phenol-d5	58.8		34.8-118		%REC	1	5/13/2015 4:01:32 PM	19157
Surr: 2,4,6-Tribromophenol	69.7		26.8-128		%REC	1	5/13/2015 4:01:32 PM	19157
Surr: Nitrobenzene-d5	62.5		35.8-124		%REC	1	5/13/2015 4:01:32 PM	19157
Surr: 2-Fluorobiphenyl	63.4		24.5-139		%REC	1	5/13/2015 4:01:32 PM	19157
Surr: 4-Terphenyl-d14	55.4		29.4-129		%REC	1	5/13/2015 4:01:32 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	ND	0.000359	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Toluene	0.000255	0.000166	0.00159	J	mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Ethylbenzene	ND	0.000268	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Xylenes, Total	ND	0.000951	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000668	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,2,4-Trimethylbenzene	ND	0.000417	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,3,5-Trimethylbenzene	ND	0.000280	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000427	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000191	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Naphthalene	ND	0.000521	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1-Methylnaphthalene	ND	0.000626	0.00319		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
2-Methylnaphthalene	ND	0.000623	0.00319		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Acetone	0.00792	0.000996	0.00797	J	mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Bromobenzene	ND	0.000444	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-10 (2-4')

Project: SWMU 10

Collection Date: 4/30/2015 3:30:00 PM

Lab ID: 1505058-001

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Bromodichloromethane	ND	0.000215	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Bromoform	ND	0.000413	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Bromomethane	ND	0.000943	0.00239		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
2-Butanone	0.00161	0.000510	0.00797	J	mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Carbon tetrachloride	ND	0.000289	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Chlorobenzene	ND	0.000162	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Chloroethane	ND	0.00159	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Chloroform	ND	0.000328	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Chloromethane	ND	0.000188	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
2-Chlorotoluene	ND	0.000311	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Carbon disulfide	ND	0.000721	0.00797		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
4-Chlorotoluene	ND	0.000307	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
cis-1,2-DCE	ND	0.000422	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
cis-1,3-Dichloropropene	ND	0.00159	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000468	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Dibromochloromethane	ND	0.000179	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Dibromomethane	ND	0.000905	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,2-Dichlorobenzene	ND	0.000354	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,3-Dichlorobenzene	ND	0.000270	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,4-Dichlorobenzene	ND	0.000250	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Dichlorodifluoromethane	ND	0.000651	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,1-Dichloroethane	ND	0.000372	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,1-Dichloroethene	ND	0.000266	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,2-Dichloropropane	ND	0.000341	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,3-Dichloropropane	ND	0.000248	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
2,2-Dichloropropane	ND	0.000277	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,1-Dichloropropene	ND	0.000292	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Hexachlorobutadiene	ND	0.000322	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Isopropylbenzene	ND	0.000370	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
4-Isopropyltoluene	ND	0.000619	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Methylene chloride	0.000510	0.000394	0.00159	J	mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
n-Butylbenzene	ND	0.000654	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
2-Hexanone	0.000582	0.000332	0.00797	J	mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
n-Propylbenzene	ND	0.000298	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
sec-Butylbenzene	ND	0.000403	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Styrene	ND	0.000264	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
4-Methyl-2-pentanone	ND	0.000673	0.00797		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
tert-Butylbenzene	ND	0.000244	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000259	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505058

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-10 (2-4')

Project: SWMU 10

Collection Date: 4/30/2015 3:30:00 PM

Lab ID: 1505058-001

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
1,1,2,2-Tetrachloroethane	ND	0.000351	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Tetrachloroethene (PCE)	ND	0.000316	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
trans-1,2-DCE	ND	0.000258	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
trans-1,3-Dichloropropene	ND	0.000208	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,2,3-Trichlorobenzene	ND	0.000583	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,2,4-Trichlorobenzene	ND	0.000597	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,1,1-Trichloroethane	ND	0.000227	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,1,2-Trichloroethane	ND	0.00159	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Trichloroethene (TCE)	ND	0.000317	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Trichlorofluoromethane	ND	0.000322	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
1,2,3-Trichloropropane	ND	0.000560	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Vinyl chloride	ND	0.000182	0.00159		mg/Kg-dr	1	5/6/2015 10:16:42 PM	19032
Surr: 1,2-Dichloroethane-d4	95.0	0	70-130		%REC	1	5/6/2015 10:16:42 PM	19032
Surr: 4-Bromofluorobenzene	93.1	0	70-130		%REC	1	5/6/2015 10:16:42 PM	19032
Surr: Dibromofluoromethane	100	0	70-130		%REC	1	5/6/2015 10:16:42 PM	19032
Surr: Toluene-d8	87.9	0	70-130		%REC	1	5/6/2015 10:16:42 PM	19032
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.74	2.9		mg/Kg-dr	1	5/6/2015 3:22:42 AM	R25982
Surr: BFB	104	0	67.4-150		%REC	1	5/6/2015 3:22:42 AM	R25982

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505058

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-10 (4-6')

Project: SWMU 10

Collection Date: 4/30/2015 3:45:00 PM

Lab ID: 1505058-002

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	8900	53	95		mg/Kg-dr	10	5/5/2015 11:48:21 PM	19040
Motor Oil Range Organics (MRO)	1600	480	480		mg/Kg-dr	10	5/5/2015 11:48:21 PM	19040
Surr: DNOP	0	0	57.9-140	S	%REC	10	5/5/2015 11:48:21 PM	19040
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	18	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.012	0.0034	0.039	J	mg/Kg-dr	1	5/14/2015 3:45:49 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Arsenic	1.6	0.35	2.9	J	mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Barium	360	0.070	0.24		mg/Kg-dr	2	5/7/2015 2:51:53 PM	19081
Beryllium	0.93	0.0087	0.18		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Chromium	12	0.071	0.35		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Cobalt	4.1	0.044	0.35		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Iron	13000	71	290		mg/Kg-dr	100	5/7/2015 11:36:48 AM	19081
Lead	4.0	0.13	0.29		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Manganese	170	0.069	0.12		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Nickel	7.7	0.15	0.59		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Vanadium	18	0.039	2.9		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
Zinc	19	0.76	2.9		mg/Kg-dr	1	5/7/2015 2:50:27 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	1.5	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Acenaphthylene	ND	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Aniline	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Anthracene	ND	1.0	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Azobenzene	ND	1.4	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Benz(a)anthracene	ND	0.95	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Benzo(a)pyrene	ND	1.4	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Benzo(b)fluoranthene	ND	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Benzo(g,h,i)perylene	ND	1.4	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Benzo(k)fluoranthene	ND	1.4	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Benzoic acid	ND	0.69	6.1		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Benzyl alcohol	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Bis(2-chloroethoxy)methane	ND	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-10 (4-6')

Project: SWMU 10

Collection Date: 4/30/2015 3:45:00 PM

Lab ID: 1505058-002

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Bis(2-chloroethyl)ether	ND	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.93	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Bis(2-ethylhexyl)phthalate	ND	1.4	6.1		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
4-Bromophenyl phenyl ether	ND	1.3	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Butyl benzyl phthalate	ND	1.5	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Carbazole	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
4-Chloro-3-methylphenol	ND	1.2	6.1		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
4-Chloroaniline	ND	1.1	6.1		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2-Chloronaphthalene	ND	1.3	3.0		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2-Chlorophenol	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
4-Chlorophenyl phenyl ether	ND	1.8	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Chrysene	ND	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Di-n-butyl phthalate	ND	1.4	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Di-n-octyl phthalate	ND	1.4	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Dibenz(a,h)anthracene	ND	1.3	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Dibenzofuran	ND	1.3	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
1,2-Dichlorobenzene	ND	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
1,3-Dichlorobenzene	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
1,4-Dichlorobenzene	ND	1.3	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
3,3'-Dichlorobenzidine	ND	0.93	3.0		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Diethyl phthalate	ND	1.4	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Dimethyl phthalate	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2,4-Dichlorophenol	ND	1.2	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2,4-Dimethylphenol	ND	0.95	3.6		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.66	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2,4-Dinitrophenol	ND	0.50	6.1		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2,4-Dinitrotoluene	ND	1.1	6.1		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2,6-Dinitrotoluene	ND	1.3	6.1		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Fluoranthene	ND	1.5	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Fluorene	2.2	1.7	2.4	J	mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Hexachlorobenzene	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Hexachlorobutadiene	ND	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Hexachlorocyclopentadiene	ND	0.84	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Hexachloroethane	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Indeno(1,2,3-cd)pyrene	ND	1.4	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Isophorone	ND	1.3	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
1-Methylnaphthalene	17	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2-Methylnaphthalene	25	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2-Methylphenol	ND	1.2	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505058

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-10 (4-6')

Project: SWMU 10

Collection Date: 4/30/2015 3:45:00 PM

Lab ID: 1505058-002

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	ND	1.3	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
N-Nitrosodi-n-propylamine	ND	1.3	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
N-Nitrosodiphenylamine	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Naphthalene	5.9	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2-Nitroaniline	ND	1.4	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
3-Nitroaniline	ND	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
4-Nitroaniline	ND	1.1	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Nitrobenzene	ND	1.2	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2-Nitrophenol	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
4-Nitrophenol	ND	1.0	3.0		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Pentachlorophenol	ND	0.76	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Phenanthrene	4.1	1.3	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Phenol	ND	1.1	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Pyrene	ND	1.6	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Pyridine	ND	1.0	4.9		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
1,2,4-Trichlorobenzene	ND	1.2	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2,4,5-Trichlorophenol	ND	1.4	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
2,4,6-Trichlorophenol	ND	1.4	2.4		mg/Kg-dr	1	5/13/2015 4:29:18 PM	19157
Surr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/13/2015 4:29:18 PM	19157
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/13/2015 4:29:18 PM	19157
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/13/2015 4:29:18 PM	19157
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/13/2015 4:29:18 PM	19157
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/13/2015 4:29:18 PM	19157
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/13/2015 4:29:18 PM	19157
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	0.20	0.088	0.60	J	mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Toluene	5.0	0.071	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Ethylbenzene	3.6	0.055	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Methyl tert-butyl ether (MTBE)	ND	0.084	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,2,4-Trimethylbenzene	13	0.030	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,3,5-Trimethylbenzene	4.7	0.039	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,2-Dichloroethane (EDC)	ND	0.24	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,2-Dibromoethane (EDB)	ND	0.047	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Naphthalene	11	0.14	1.2		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1-Methylnaphthalene	28	0.36	2.4		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
2-Methylnaphthalene	48	0.39	2.4		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Acetone	ND	0.44	8.9		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Bromobenzene	ND	0.044	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Bromodichloromethane	ND	0.049	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-10 (4-6')

Project: SWMU 10

Collection Date: 4/30/2015 3:45:00 PM

Lab ID: 1505058-002

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Bromoform	ND	0.048	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Bromomethane	ND	0.12	1.8		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
2-Butanone	ND	0.38	6.0		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Carbon disulfide	ND	0.43	6.0		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Carbon tetrachloride	ND	0.058	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Chlorobenzene	ND	0.046	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Chloroethane	ND	0.46	1.2		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Chloroform	ND	0.062	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Chloromethane	ND	0.069	1.8		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
2-Chlorotoluene	ND	0.067	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
4-Chlorotoluene	ND	0.045	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
cis-1,2-DCE	ND	0.075	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
cis-1,3-Dichloropropene	ND	0.041	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,2-Dibromo-3-chloropropane	ND	0.10	1.2		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Dibromochloromethane	ND	0.045	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Dibromomethane	ND	0.063	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,2-Dichlorobenzene	ND	0.036	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,3-Dichlorobenzene	ND	0.070	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,4-Dichlorobenzene	ND	0.074	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Dichlorodifluoromethane	ND	0.15	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,1-Dichloroethane	ND	0.24	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,1-Dichloroethene	ND	0.041	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,2-Dichloropropane	ND	0.033	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,3-Dichloropropane	ND	0.082	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
2,2-Dichloropropane	ND	0.087	1.2		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,1-Dichloropropene	ND	0.089	1.2		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Hexachlorobutadiene	ND	0.083	1.2		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
2-Hexanone	ND	0.15	6.0		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Isopropylbenzene	1.2	0.050	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
4-Isopropyltoluene	0.74	0.042	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
4-Methyl-2-pentanone	ND	0.10	6.0		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Methylene chloride	ND	0.24	1.8		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
n-Butylbenzene	1.4	0.051	1.8	J	mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
n-Propylbenzene	1.8	0.045	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
sec-Butylbenzene	0.75	0.085	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Styrene	ND	0.11	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
tert-Butylbenzene	ND	0.068	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,1,1,2-Tetrachloroethane	ND	0.049	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,1,2,2-Tetrachloroethane	ND	0.072	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505058

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-10 (4-6')

Project: SWMU 10

Collection Date: 4/30/2015 3:45:00 PM

Lab ID: 1505058-002

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Tetrachloroethene (PCE)	ND	0.052	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
trans-1,2-DCE	ND	0.039	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
trans-1,3-Dichloropropene	ND	0.11	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,2,3-Trichlorobenzene	ND	0.13	1.2		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,2,4-Trichlorobenzene	ND	0.11	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,1,1-Trichloroethane	ND	0.091	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,1,2-Trichloroethane	ND	0.072	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Trichloroethene (TCE)	ND	0.058	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Trichlorofluoromethane	ND	0.18	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
1,2,3-Trichloropropane	ND	0.10	1.2		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Vinyl chloride	ND	0.24	0.60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Xylenes, Total	29	0.17	1.2		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Surr: Dibromofluoromethane	94.2		70-130		%REC	20	5/5/2015 3:21:56 PM	R25982
Surr: 1,2-Dichloroethane-d4	93.4		70-130		%REC	20	5/5/2015 3:21:56 PM	R25982
Surr: Toluene-d8	104		70-130		%REC	20	5/5/2015 3:21:56 PM	R25982
Surr: 4-Bromofluorobenzene	76.2		70-130		%REC	20	5/5/2015 3:21:56 PM	R25982
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	560	15	60		mg/Kg-dr	20	5/5/2015 3:21:56 PM	R25982
Surr: BFB	96.7	0	67.4-150		%REC	20	5/5/2015 3:21:56 PM	R25982

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505058

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-10 (18-20')

Project: SWMU 10

Collection Date: 4/30/2015 3:55:00 PM

Lab ID: 1505058-003

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	ND	5.5	9.9		mg/Kg-dr	1	5/6/2015 12:14:58 AM	19040
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	5/6/2015 12:14:58 AM	19040
Surr: DNOP	102	0	57.9-140		%REC	1	5/6/2015 12:14:58 AM	19040
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	15	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	ND	0.0032	0.037		mg/Kg-dr	1	5/14/2015 3:47:40 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	2.7	1.5	2.9	J	mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Arsenic	1.9	0.34	2.9	J	mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Barium	240	0.035	0.12		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Beryllium	1.0	0.0086	0.17		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Chromium	14	0.070	0.35		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Cobalt	7.9	0.044	0.35		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Iron	20000	70	290		mg/Kg-dr	100	5/8/2015 2:23:33 PM	19081
Lead	2.0	0.13	0.29		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Manganese	990	0.34	0.58		mg/Kg-dr	5	5/8/2015 2:21:51 PM	19081
Nickel	17	0.15	0.58		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Vanadium	21	0.039	2.9		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
Zinc	25	0.75	2.9		mg/Kg-dr	1	5/8/2015 2:18:14 PM	19081
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Acenaphthylene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Aniline	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Azobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Benz(a)anthracene	ND	0.093	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Benzo(a)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Benzo(g,h,i)perylene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Benzo(k)fluoranthene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Benzoic acid	ND	0.067	0.59		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Benzyl alcohol	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Bis(2-chloroethoxy)methane	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-10 (18-20')

Project: SWMU 10

Collection Date: 4/30/2015 3:55:00 PM

Lab ID: 1505058-003

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Bis(2-chloroethyl)ether	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.090	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
4-Bromophenyl phenyl ether	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Butyl benzyl phthalate	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Carbazole	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2-Chloronaphthalene	ND	0.13	0.29		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2-Chlorophenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
4-Chlorophenyl phenyl ether	ND	0.18	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Chrysene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Di-n-butyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Di-n-octyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Dibenz(a,h)anthracene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Dibenzofuran	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
1,2-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
1,3-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
1,4-Dichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
3,3'-Dichlorobenzidine	ND	0.091	0.29		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Diethyl phthalate	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Dimethyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2,4-Dichlorophenol	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2,4-Dimethylphenol	ND	0.093	0.35		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.064	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2,4-Dinitrotoluene	ND	0.11	0.59		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Fluoranthene	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Fluorene	ND	0.16	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Hexachlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Hexachlorobutadiene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Hexachlorocyclopentadiene	ND	0.082	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Hexachloroethane	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Isophorone	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
1-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2-Methylphenol	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505058

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-10 (18-20')

Project: SWMU 10

Collection Date: 4/30/2015 3:55:00 PM

Lab ID: 1505058-003

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
N-Nitrosodiphenylamine	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Naphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
4-Nitroaniline	ND	0.11	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2-Nitrophenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
4-Nitrophenol	ND	0.10	0.29		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Pentachlorophenol	ND	0.074	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Phenanthrene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Phenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Pyrene	ND	0.15	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Pyridine	ND	0.099	0.47		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
1,2,4-Trichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2,4,5-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
2,4,6-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 4:56:50 PM	19157
Surr: 2-Fluorophenol	83.7		26.4-129		%REC	1	5/13/2015 4:56:50 PM	19157
Surr: Phenol-d5	84.5		34.8-118		%REC	1	5/13/2015 4:56:50 PM	19157
Surr: 2,4,6-Tribromophenol	82.7		26.8-128		%REC	1	5/13/2015 4:56:50 PM	19157
Surr: Nitrobenzene-d5	81.4		35.8-124		%REC	1	5/13/2015 4:56:50 PM	19157
Surr: 2-Fluorobiphenyl	82.4		24.5-139		%REC	1	5/13/2015 4:56:50 PM	19157
Surr: 4-Terphenyl-d14	73.6		29.4-129		%REC	1	5/13/2015 4:56:50 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.0180	0.000419	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Toluene	0.0104	0.000193	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Ethylbenzene	0.00241	0.000312	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Xylenes, Total	0.00797	0.00111	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Methyl tert-butyl ether (MTBE)	ND	0.000779	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,2,4-Trimethylbenzene	0.00238	0.000486	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,3,5-Trimethylbenzene	0.00151	0.000326	0.00186	J	mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,2-Dichloroethane (EDC)	ND	0.000498	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,2-Dibromoethane (EDB)	ND	0.000222	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Naphthalene	0.000725	0.000607	0.00186	J	mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1-Methylnaphthalene	ND	0.000730	0.00372		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
2-Methylnaphthalene	ND	0.000726	0.00372		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Acetone	0.00422	0.00116	0.00929	J	mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Bromobenzene	ND	0.000517	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-10 (18-20')

Project: SWMU 10

Collection Date: 4/30/2015 3:55:00 PM

Lab ID: 1505058-003

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Bromodichloromethane	ND	0.000251	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Bromoform	ND	0.000481	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Bromomethane	ND	0.00110	0.00279		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
2-Butanone	0.00159	0.000595	0.00929	J	mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Carbon tetrachloride	ND	0.000336	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Chlorobenzene	ND	0.000188	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Chloroethane	ND	0.00186	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Chloroform	ND	0.000383	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Chloromethane	ND	0.000219	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
2-Chlorotoluene	ND	0.000363	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Carbon disulfide	ND	0.000841	0.00929		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
4-Chlorotoluene	ND	0.000358	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
cis-1,2-DCE	ND	0.000491	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
cis-1,3-Dichloropropene	ND	0.00186	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,2-Dibromo-3-chloropropane	ND	0.000546	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Dibromochloromethane	ND	0.000208	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Dibromomethane	ND	0.00105	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,2-Dichlorobenzene	ND	0.000412	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,3-Dichlorobenzene	ND	0.000315	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,4-Dichlorobenzene	ND	0.000292	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Dichlorodifluoromethane	ND	0.000759	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,1-Dichloroethane	ND	0.000434	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,1-Dichloroethene	ND	0.000310	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,2-Dichloropropane	ND	0.000397	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,3-Dichloropropane	ND	0.000289	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
2,2-Dichloropropane	ND	0.000323	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,1-Dichloropropene	ND	0.000340	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Hexachlorobutadiene	ND	0.000375	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Isopropylbenzene	ND	0.000431	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
4-Isopropyltoluene	ND	0.000721	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Methylene chloride	ND	0.000459	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
n-Butylbenzene	ND	0.000763	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
2-Hexanone	ND	0.000387	0.00929		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
n-Propylbenzene	0.000372	0.000348	0.00186	J	mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
sec-Butylbenzene	0.000688	0.000469	0.00186	J	mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Styrene	ND	0.000308	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
4-Methyl-2-pentanone	ND	0.000785	0.00929		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
tert-Butylbenzene	ND	0.000285	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,1,1,2-Tetrachloroethane	ND	0.000302	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505058

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-10 (18-20')

Project: SWMU 10

Collection Date: 4/30/2015 3:55:00 PM

Lab ID: 1505058-003

Matrix: SOIL

Received Date: 5/1/2015 1:50:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
1,1,2,2-Tetrachloroethane	ND	0.000409	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Tetrachloroethene (PCE)	ND	0.000368	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
trans-1,2-DCE	ND	0.000300	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
trans-1,3-Dichloropropene	ND	0.000243	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,2,3-Trichlorobenzene	ND	0.000680	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,2,4-Trichlorobenzene	ND	0.000696	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,1,1-Trichloroethane	ND	0.000264	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,1,2-Trichloroethane	ND	0.00186	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Trichloroethene (TCE)	ND	0.000369	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Trichlorofluoromethane	ND	0.000375	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
1,2,3-Trichloropropane	ND	0.000652	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Vinyl chloride	ND	0.000212	0.00186		mg/Kg-dr	1	5/6/2015 10:45:59 PM	19032
Surr: 1,2-Dichloroethane-d4	98.9	0	70-130		%REC	1	5/6/2015 10:45:59 PM	19032
Surr: 4-Bromofluorobenzene	99.2	0	70-130		%REC	1	5/6/2015 10:45:59 PM	19032
Surr: Dibromofluoromethane	102	0	70-130		%REC	1	5/6/2015 10:45:59 PM	19032
Surr: Toluene-d8	88.2	0	70-130		%REC	1	5/6/2015 10:45:59 PM	19032
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.93	3.7		mg/Kg-dr	1	5/6/2015 3:51:34 AM	R25982
Surr: BFB	107	0	67.4-150		%REC	1	5/6/2015 3:51:34 AM	R25982

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	



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Est. 1970

REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 05, 2015
Description :
Sample ID : 1505058-001C SWMU 10-10 2-4 FT
Collected By :
Collection Date : 04/30/15 15:30

ESC Sample # : L762974-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	190		mV	2580 B-2011	05/10/15	1
pH	7.3	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762974-01 (PH) - 7.3 at 21.1c



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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 05, 2015
Description :

Sample ID : 1505058-002C SWMU 10-10 4-6 FT

Collected By :
Collection Date : 04/30/15 15:45

ESC Sample # : L762974-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	180		mV	2580 B-2011	05/10/15	1
pH	7.8	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762974-02 (PH) - 7.8 at 21.5c



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Est. 1970

REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 05, 2015
Description :
Sample ID : 1505058-003C SWMU 10-10 18-20 FT
Collected By :
Collection Date : 04/30/15 15:55

ESC Sample # : L762974-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/09/15	1
ORP	150		mV	2580 B-2011	05/10/15	1
pH	9.1	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
L762974-03 (PH) - 9.1 at 21.0c



YOUR LAB OF CHOICE

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762974

12065 Lebanon Rd.
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(615) 758-5858
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

May 13, 2015

Analyte	Result	Laboratory Blank Units % Rec	Limit	Batch	Date Analyzed
Chromium, Hexavalent	< 2	mg/kg		WG787134	05/09/15 04:55
Cyanide	< .25	mg/kg		WG787733	05/12/15 10:23

Analyte	Units	Result	Duplicate Duplicate	RPD	Limit	Ref Samp	Batch
pH	su	7.60	7.60	0.656	1	L762972-04	WG787168
pH	su	6.70	6.70	0.449	1	L763354-01	WG787168
Chromium, Hexavalent	mg/kg	0.0	0.0	0.0	20	L762972-07	WG787134
ORP	mV	70.0	70.0	0.0	20	L762970-02	WG787860
ORP	mV	140.	140.	0.0	20	L762978-01	WG787860
Cyanide	mg/kg	0.0	0.0	0.0	20	L762970-02	WG787733
Cyanide	mg/kg	0.0	0.0	0.0	20	L762976-05	WG787733

Analyte	Units	Laboratory Control Known Val	Sample Result	% Rec	Limit	Batch
pH	su	7.84	7.80	99.5	98.3-101.7	WG787168
Chromium, Hexavalent	mg/kg	59.8	66.4	111.	80-120	WG787134
ORP	mV	100	100.	100.	90-110	WG787860
Cyanide	mg/kg	101	102.	101.	50-150	WG787733

Analyte	Units	Laboratory Control Result	Sample Ref	Duplicate %Rec	Limit	RPD	Limit	Batch
pH	su	7.80	7.80	99.0	98.3-101.7	0.0	20	WG787168
Chromium, Hexavalent	mg/kg	66.6	66.4	111.	80-120	0.301	20	WG787134
ORP	mV	100.	100.	100.	90-110	0.0	20	WG787860
Cyanide	mg/kg	107.	102.	106.	50-150	4.78	20	WG787733

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Chromium, Hexavalent	mg/kg	19.3	0.0	20	96.0	75-125	L762972-07	WG787134

Analyte	Units	Matrix Spike MSD	Ref	Duplicate %Rec	Limit	RPD	Limit	Ref Samp	Batch
Chromium, Hexavalent	mg/kg	19.5	19.3	97.5	75-125	1.03	20	L762972-07	WG787134

* Performance of this Analyte is outside of established criteria.

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505058

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19040	SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID: 19040			RunNo: 25952					
Prep Date:	5/4/2015	Analysis Date: 5/5/2015			SeqNo: 769701		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	9.5		10.00		95.4	57.9	140			

Sample ID	LCS-19040		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 19040		RunNo: 25952					
Prep Date:	5/4/2015		Analysis Date: 5/5/2015		SeqNo: 769702		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	102	67.8	130			
Surr: DNOP	4.9		5.000		97.4	57.9	140			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505058

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19008		SampType:	MBLK		TestCode:	EPA Method 8260B: Volatiles			
Client ID:	PBS		Batch ID:	19008		RunNo:	25941			
Prep Date:	5/1/2015		Analysis Date:	5/4/2015		SeqNo:	768949		Units: %REC	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.51		0.5000		102	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.1	70	130			
Surr: Toluene-d8	0.46		0.5000		92.4	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		91.7	70	130			

Sample ID	lcs-19008		SampType:	LCS		TestCode:	EPA Method 8260B: Volatiles			
Client ID:	LCSS		Batch ID:	19008		RunNo:	25941			
Prep Date:	5/1/2015		Analysis Date:	5/4/2015		SeqNo:	768950		Units: %REC	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.51		0.5000		103	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.7	70	130			
Surr: Toluene-d8	0.44		0.5000		88.0	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.9	70	130			

Sample ID	5mL rb		SampType:	MBLK		TestCode:	EPA Method 8260B: Volatiles			
Client ID:	PBS		Batch ID:	R25982		RunNo:	25982			
Prep Date:			Analysis Date:	5/5/2015		SeqNo:	770974		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	0.0083	0.050								J
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505058

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5mL rb	SampType: MBLK			TestCode: EPA Method 8260B: Volatiles					
Client ID:	PBS	Batch ID: R25982			RunNo: 25982					
Prep Date:		Analysis Date: 5/5/2015			SeqNo: 770974		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505058

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260B: Volatiles					
Client ID:	PBS	Batch ID:	R25982	RunNo:	25982					
Prep Date:		Analysis Date:	5/5/2015	SeqNo:	770974	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.49		0.5000		98.1	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		89.0	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		100	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: Volatiles					
Client ID:	LCSS	Batch ID:	R25982	RunNo:	25982					
Prep Date:		Analysis Date:	5/5/2015	SeqNo:	770975	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	101	70	130			
Toluene	1.1	0.050	1.000	0	105	70	130			
Chlorobenzene	1.0	0.050	1.000	0	102	70	130			
1,1-Dichloroethene	1.2	0.050	1.000	0	116	60.6	134			
Trichloroethene (TCE)	0.92	0.050	1.000	0	92.4	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		99.5	70	130			
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		91.1	70	130			
Surr: Toluene-d8	0.51		0.5000		103	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.2	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505058

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-19032		SampType: LCS			TestCode: Method 8260B/5035LOW: VOLATILES				
Client ID:	LCSS		Batch ID: 19032			RunNo: 26013				
Prep Date:	5/4/2015		Analysis Date: 5/6/2015			SeqNo: 771128		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0108	0.00200	0.01000	0	108	70	130			
Toluene	0.00992	0.00200	0.01000	0	99.2	70	130			
Chlorobenzene	0.00872	0.00200	0.01000	0	87.2	70	130			
1,1-Dichloroethene	0.0112	0.00200	0.01000	0	112	70	130			
Trichloroethene (TCE)	0.0105	0.00200	0.01000	0	105	61.6	131			
Surr: 1,2-Dichloroethane-d4	0.0266		0.02500		106	70	130			
Surr: 4-Bromofluorobenzene	0.0221		0.02500		88.5	70	130			
Surr: Dibromofluoromethane	0.0266		0.02500		107	70	130			
Surr: Toluene-d8	0.0248		0.02500		99.4	70	130			

Sample ID	MB-19032		SampType: MBLK			TestCode: Method 8260B/5035LOW: VOLATILES				
Client ID:	PBS		Batch ID: 19032			RunNo: 26013				
Prep Date:	5/4/2015		Analysis Date: 5/6/2015			SeqNo: 771129		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	0.000210	0.00200								J
Ethylbenzene	ND	0.00200								
Xylenes, Total	ND	0.00200								
Methyl tert-butyl ether (MTBE)	ND	0.00200								
1,2,4-Trimethylbenzene	ND	0.00200								
1,3,5-Trimethylbenzene	ND	0.00200								
1,2-Dichloroethane (EDC)	ND	0.00200								
1,2-Dibromoethane (EDB)	ND	0.00200								
Naphthalene	ND	0.00200								
1-Methylnaphthalene	ND	0.00400								
2-Methylnaphthalene	ND	0.00400								
Acetone	ND	0.0100								
Bromobenzene	ND	0.00200								
Bromodichloromethane	ND	0.00200								
Bromoform	ND	0.00200								
Bromomethane	ND	0.00300								
2-Butanone	0.000830	0.0100								J
Carbon tetrachloride	ND	0.00200								
Chlorobenzene	ND	0.00200								
Chloroethane	ND	0.00200								
Chloroform	ND	0.00200								
Chloromethane	ND	0.00200								
2-Chlorotoluene	ND	0.00200								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505058

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19032	SampType:	MBLK	TestCode:	Method 8260B/5035LOW: VOLATILES					
Client ID:	PBS	Batch ID:	19032	RunNo:	26013					
Prep Date:	5/4/2015	Analysis Date:	5/6/2015	SeqNo:	771129	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Carbon disulfide	ND	0.0100								
4-Chlorotoluene	ND	0.00200								
cis-1,2-DCE	ND	0.00200								
cis-1,3-Dichloropropene	ND	0.00200								
1,2-Dibromo-3-chloropropane	ND	0.00200								
Dibromochloromethane	ND	0.00200								
Dibromomethane	ND	0.00200								
1,2-Dichlorobenzene	ND	0.00200								
1,3-Dichlorobenzene	ND	0.00200								
1,4-Dichlorobenzene	ND	0.00200								
Dichlorodifluoromethane	ND	0.00200								
1,1-Dichloroethane	ND	0.00200								
1,1-Dichloroethene	ND	0.00200								
1,2-Dichloropropane	ND	0.00200								
1,3-Dichloropropane	ND	0.00200								
2,2-Dichloropropane	ND	0.00200								
1,1-Dichloropropene	ND	0.00200								
Hexachlorobutadiene	ND	0.00200								
Isopropylbenzene	ND	0.00200								
4-Isopropyltoluene	ND	0.00200								
Methylene chloride	ND	0.00200								
n-Butylbenzene	ND	0.00200								
2-Hexanone	ND	0.0100								
n-Propylbenzene	ND	0.00200								
sec-Butylbenzene	ND	0.00200								
Styrene	ND	0.00200								
4-Methyl-2-pentanone	ND	0.0100								
tert-Butylbenzene	ND	0.00200								
1,1,1,2-Tetrachloroethane	ND	0.00200								
1,1,2,2-Tetrachloroethane	ND	0.00200								
Tetrachloroethene (PCE)	ND	0.00200								
trans-1,2-DCE	ND	0.00200								
trans-1,3-Dichloropropene	ND	0.00200								
1,2,3-Trichlorobenzene	ND	0.00200								
1,2,4-Trichlorobenzene	ND	0.00200								
1,1,1-Trichloroethane	ND	0.00200								
1,1,2-Trichloroethane	ND	0.00200								
Trichloroethene (TCE)	ND	0.00200								
Trichlorofluoromethane	ND	0.00200								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505058

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19032		SampType:	MBLK		TestCode:	Method 8260B/5035LOW: VOLATILES			
Client ID:	PBS		Batch ID:	19032		RunNo:	26013			
Prep Date:	5/4/2015		Analysis Date:	5/6/2015		SeqNo:	771129		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2,3-Trichloropropane	ND	0.00200								
Vinyl chloride	ND	0.00200								
Surr: 1,2-Dichloroethane-d4	0.0275		0.02500		110	70	130			
Surr: 4-Bromofluorobenzene	0.0232		0.02500		93.0	70	130			
Surr: Dibromofluoromethane	0.0276		0.02500		110	70	130			
Surr: Toluene-d8	0.0239		0.02500		95.4	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505058

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19157	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBS	Batch ID:	19157	RunNo:	26173					
Prep Date:	5/11/2015	Analysis Date:	5/13/2015	SeqNo:	776628	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3'-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505058

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19157	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBS	Batch ID:	19157	RunNo:	26173					
Prep Date:	5/11/2015	Analysis Date:	5/13/2015	SeqNo:	776628	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.5		3.330		75.2	26.4	129			
Surr: Phenol-d5	2.5		3.330		73.9	34.8	118			
Surr: 2,4,6-Tribromophenol	2.7		3.330		80.2	26.8	128			
Surr: Nitrobenzene-d5	1.3		1.670		78.9	35.8	124			
Surr: 2-Fluorobiphenyl	1.4		1.670		82.1	24.5	139			
Surr: 4-Terphenyl-d14	1.3		1.670		77.5	29.4	129			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505058

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-19157		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS		Batch ID: 19157		RunNo: 26173					
Prep Date:	5/11/2015		Analysis Date: 5/13/2015		SeqNo: 776629		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.1	0.20	1.670	0	64.5	45.8	114			
4-Chloro-3-methylphenol	2.1	0.50	3.330	0	64.3	52.3	122			
2-Chlorophenol	2.0	0.20	3.330	0	59.0	49.9	115			
1,4-Dichlorobenzene	1.1	0.20	1.670	0	65.4	43.7	107			
2,4-Dinitrotoluene	0.92	0.50	1.670	0	55.3	36	106			
N-Nitrosodi-n-propylamine	0.92	0.20	1.670	0	55.4	39.5	110			
4-Nitrophenol	2.3	0.25	3.330	0	69.0	45.1	121			
Pentachlorophenol	2.1	0.40	3.330	0	63.3	23.7	111			
Phenol	2.1	0.20	3.330	0	63.1	52.7	119			
Pyrene	0.95	0.20	1.670	0	57.1	50.4	116			
1,2,4-Trichlorobenzene	1.3	0.20	1.670	0	75.2	40.1	114			
Surr: 2-Fluorophenol	2.3		3.330		67.8	26.4	129			
Surr: Phenol-d5	2.3		3.330		70.4	34.8	118			
Surr: 2,4,6-Tribromophenol	2.5		3.330		74.6	26.8	128			
Surr: Nitrobenzene-d5	1.2		1.670		71.3	35.8	124			
Surr: 2-Fluorobiphenyl	1.2		1.670		72.2	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		91.5	29.4	129			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505058

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19227		SampType: MBLK		TestCode: EPA Method 7471: Mercury					
Client ID:	PBS		Batch ID: 19227		RunNo: 26201					
Prep Date:	5/14/2015		Analysis Date: 5/14/2015		SeqNo: 777418		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	LCS-19227		SampType: LCS		TestCode: EPA Method 7471: Mercury					
Client ID:	LCSS		Batch ID: 19227		RunNo: 26201					
Prep Date:	5/14/2015		Analysis Date: 5/14/2015		SeqNo: 777419		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	100	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505058

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS-19081		SampType: LCS		TestCode: EPA Method 6010B: Soil Metals					
Client ID:	LCSS		Batch ID: 19081		RunNo: 26050					
Prep Date:	5/6/2015		Analysis Date: 5/7/2015		SeqNo: 772230		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	25	2.5	25.00	0	99.7	80	120			
Arsenic	25	2.5	25.00	0	99.5	80	120			
Barium	24	0.10	25.00	0	97.4	80	120			
Beryllium	26	0.15	25.00	0	105	80	120			
Cadmium	25	0.10	25.00	0	98.6	80	120			
Chromium	25	0.30	25.00	0	99.6	80	120			
Cobalt	24	0.30	25.00	0	97.1	80	120			
Iron	26	2.5	25.00	0	104	80	120			B
Lead	25	0.25	25.00	0	99.3	80	120			
Manganese	25	0.10	25.00	0	98.4	80	120			
Nickel	24	0.50	25.00	0	96.7	80	120			
Selenium	25	2.5	25.00	0	102	80	120			
Silver	5.2	0.25	5.000	0	105	80	120			
Vanadium	26	2.5	25.00	0	103	80	120			
Zinc	25	2.5	25.00	0	98.1	80	120			

Sample ID	MB-19081	SampType: MBLK			TestCode: EPA Method 6010B: Soil Metals					
Client ID:	PBS	Batch ID: 19081			RunNo: 26050					
Prep Date:	5/6/2015	Analysis Date: 5/7/2015			SeqNo: 772232		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	3.8	2.5								
Lead	0.14	0.25								J
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505058

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	PBS	Batch ID:	R25941	RunNo:	25941					
Prep Date:		Analysis Date:	5/4/2015	SeqNo:	770909	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	470		500.0		93.3	67.4	150			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	LCSS	Batch ID:	R25941	RunNo:	25941					
Prep Date:		Analysis Date:	5/4/2015	SeqNo:	770910	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	470		500.0		93.3	67.4	150			

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	PBS	Batch ID:	R25982	RunNo:	25982					
Prep Date:		Analysis Date:	5/5/2015	SeqNo:	771006	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	470		500.0		94.7	67.4	150			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	LCSS	Batch ID:	R25982	RunNo:	25982					
Prep Date:		Analysis Date:	5/5/2015	SeqNo:	771007	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.5	79.9	135			
Surr: BFB	460		500.0		92.6	67.4	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit



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

Sample Log-In Check List

Client Name: **Western Refining Gallup**

Work Order Number: **1505058**

RcptNo: 1

Received by/date:

AT

05/01/15

Logged By: **Lindsay Mangin**

5/1/2015 1:50:00 PM

Completed By: **Lindsay Mangin**

5/2/2015 10:08:22 AM

Reviewed By:

AG

05/04/15

Lindsay Mangin

Lindsay Mangin

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☒ No ☐ Not Present ☐
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Client

Log In

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

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

Special Handling (if applicable)

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

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

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

WESTERN REFINING SOUTHWEST, INC.
GALLUP REFINERY - SWMU 10
METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020



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

October 12, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10

OrderNo.: 1505059

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 3 sample(s) on 5/1/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 17, 2015.

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, Inc.

Analytical Report

Lab Order 1505059

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-7 (2-4')

Project: SWMU 10

Collection Date: 5/1/2015 10:10:00 AM

Lab ID: 1505059-001

Matrix: SOIL

Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	39	5.5	9.9		mg/Kg-dr	1	5/6/2015 12:41:57 AM	19040
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg-dr	1	5/6/2015 12:41:57 AM	19040
Surr: DNOP	107	0	57.9-140		%REC	1	5/6/2015 12:41:57 AM	19040
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	16	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.033	0.0033	0.038	J	mg/Kg-dr	1	5/14/2015 3:49:30 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.6	3.0		mg/Kg-dr	1	5/8/2015 2:55:49 PM	19080
Arsenic	2.1	0.35	3.0	J	mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Barium	220	0.036	0.12		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Beryllium	0.85	0.0088	0.18		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Chromium	11	0.072	0.36		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Cobalt	4.8	0.045	0.36		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Iron	15000	72	300		mg/Kg-dr	100	5/9/2015 10:14:39 AM	19080
Lead	2.7	0.13	0.30		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Manganese	860	0.35	0.60		mg/Kg-dr	5	5/8/2015 3:02:21 PM	19080
Nickel	8.4	0.15	0.60		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Selenium	ND	1.8	3.0		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Silver	ND	0.036	0.30		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Vanadium	23	0.040	3.0		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
Zinc	20	0.77	3.0		mg/Kg-dr	1	5/7/2015 3:00:21 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.29	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Acenaphthylene	ND	0.24	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Aniline	ND	0.21	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Anthracene	ND	0.20	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Azobenzene	ND	0.26	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Benz(a)anthracene	ND	0.19	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Benzo(a)pyrene	ND	0.27	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Benzo(b)fluoranthene	ND	0.22	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Benzo(g,h,i)perylene	ND	0.27	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Benzo(k)fluoranthene	ND	0.27	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Benzoic acid	ND	0.13	1.2		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Benzyl alcohol	ND	0.21	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Bis(2-chloroethoxy)methane	ND	0.23	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-7 (2-4')

Project: SWMU 10

Collection Date: 5/1/2015 10:10:00 AM

Lab ID: 1505059-001

Matrix: SOIL

Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Bis(2-chloroethyl)ether	ND	0.23	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.18	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.27	1.2		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
4-Bromophenyl phenyl ether	ND	0.25	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Butyl benzyl phthalate	ND	0.29	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Carbazole	ND	0.22	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
4-Chloro-3-methylphenol	ND	0.24	1.2		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
4-Chloroaniline	ND	0.22	1.2		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2-Chloronaphthalene	ND	0.25	0.59		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2-Chlorophenol	ND	0.22	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
4-Chlorophenyl phenyl ether	ND	0.35	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Chrysene	ND	0.24	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Di-n-butyl phthalate	ND	0.27	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Di-n-octyl phthalate	ND	0.26	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Dibenz(a,h)anthracene	ND	0.26	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Dibenzofuran	ND	0.25	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
1,2-Dichlorobenzene	ND	0.23	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
1,3-Dichlorobenzene	ND	0.21	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
1,4-Dichlorobenzene	ND	0.25	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
3,3'-Dichlorobenzidine	ND	0.18	0.59		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Diethyl phthalate	ND	0.27	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Dimethyl phthalate	ND	0.22	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2,4-Dichlorophenol	ND	0.24	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2,4-Dimethylphenol	ND	0.19	0.71		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.13	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2,4-Dinitrophenol	ND	0.098	1.2		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2,4-Dinitrotoluene	ND	0.21	1.2		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2,6-Dinitrotoluene	ND	0.26	1.2		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Fluoranthene	ND	0.29	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Fluorene	ND	0.32	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Hexachlorobenzene	ND	0.22	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Hexachlorobutadiene	ND	0.23	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Hexachlorocyclopentadiene	ND	0.16	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Hexachloroethane	ND	0.21	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.27	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Isophorone	ND	0.25	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
1-Methylnaphthalene	ND	0.22	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2-Methylnaphthalene	ND	0.22	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2-Methylphenol	ND	0.24	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505059

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-7 (2-4')

Project: SWMU 10

Collection Date: 5/1/2015 10:10:00 AM

Lab ID: 1505059-001

Matrix: SOIL

Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	ND	0.24	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
N-Nitrosodi-n-propylamine	ND	0.24	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
N-Nitrosodiphenylamine	ND	0.21	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Naphthalene	ND	0.22	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2-Nitroaniline	ND	0.27	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
3-Nitroaniline	ND	0.23	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
4-Nitroaniline	ND	0.21	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Nitrobenzene	ND	0.24	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2-Nitrophenol	ND	0.21	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
4-Nitrophenol	ND	0.20	0.59		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Pentachlorophenol	ND	0.15	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Phenanthrene	ND	0.25	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Phenol	ND	0.21	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Pyrene	ND	0.30	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Pyridine	ND	0.20	0.95		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
1,2,4-Trichlorobenzene	ND	0.24	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2,4,5-Trichlorophenol	ND	0.28	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
2,4,6-Trichlorophenol	ND	0.27	0.47		mg/Kg-dr	1	5/13/2015 5:24:41 PM	19157
Surr: 2-Fluorophenol	61.5		26.4-129		%REC	1	5/13/2015 5:24:41 PM	19157
Surr: Phenol-d5	65.5		34.8-118		%REC	1	5/13/2015 5:24:41 PM	19157
Surr: 2,4,6-Tribromophenol	75.1		26.8-128		%REC	1	5/13/2015 5:24:41 PM	19157
Surr: Nitrobenzene-d5	61.2		35.8-124		%REC	1	5/13/2015 5:24:41 PM	19157
Surr: 2-Fluorobiphenyl	69.1		24.5-139		%REC	1	5/13/2015 5:24:41 PM	19157
Surr: 4-Terphenyl-d14	59.2		29.4-129		%REC	1	5/13/2015 5:24:41 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.00239	0.000435	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Toluene	0.00181	0.000201	0.00193	J	mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Ethylbenzene	0.000502	0.000325	0.00193	J	mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Xylenes, Total	0.00146	0.00115	0.00193	J	mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Methyl tert-butyl ether (MTBE)	0.00140	0.000809	0.00193	J	mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,2,4-Trimethylbenzene	ND	0.000505	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,3,5-Trimethylbenzene	ND	0.000339	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,2-Dichloroethane (EDC)	ND	0.000517	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,2-Dibromoethane (EDB)	ND	0.000231	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Naphthalene	ND	0.000631	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1-Methylnaphthalene	ND	0.000758	0.00386		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
2-Methylnaphthalene	ND	0.000754	0.00386		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Acetone	0.0111	0.00121	0.00965		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Bromobenzene	ND	0.000537	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-7 (2-4')

Project: SWMU 10

Collection Date: 5/1/2015 10:10:00 AM

Lab ID: 1505059-001

Matrix: SOIL

Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Bromodichloromethane	ND	0.000261	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Bromoform	ND	0.000500	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Bromomethane	ND	0.00114	0.00290		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
2-Butanone	0.00273	0.000618	0.00965	J	mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Carbon tetrachloride	ND	0.000349	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Chlorobenzene	ND	0.000196	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Chloroethane	ND	0.00193	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Chloroform	ND	0.000398	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Chloromethane	ND	0.000228	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
2-Chlorotoluene	ND	0.000377	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Carbon disulfide	ND	0.000874	0.00965		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
4-Chlorotoluene	ND	0.000372	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
cis-1,2-DCE	ND	0.000511	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
cis-1,3-Dichloropropene	ND	0.00193	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,2-Dibromo-3-chloropropane	ND	0.000567	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Dibromochloromethane	ND	0.000217	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Dibromomethane	ND	0.00110	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,2-Dichlorobenzene	ND	0.000428	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,3-Dichlorobenzene	ND	0.000327	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,4-Dichlorobenzene	ND	0.000303	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Dichlorodifluoromethane	ND	0.000788	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,1-Dichloroethane	0.000473	0.000451	0.00193	J	mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,1-Dichloroethene	ND	0.000322	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,2-Dichloropropane	ND	0.000413	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,3-Dichloropropane	ND	0.000301	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
2,2-Dichloropropane	ND	0.000335	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,1-Dichloropropene	ND	0.000354	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Hexachlorobutadiene	ND	0.000390	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Isopropylbenzene	ND	0.000448	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
4-Isopropyltoluene	ND	0.000749	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Methylene chloride	0.000637	0.000477	0.00193	J	mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
n-Butylbenzene	ND	0.000793	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
2-Hexanone	0.000724	0.000402	0.00965	J	mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
n-Propylbenzene	ND	0.000361	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
sec-Butylbenzene	ND	0.000488	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Styrene	ND	0.000320	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
4-Methyl-2-pentanone	ND	0.000815	0.00965		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
tert-Butylbenzene	ND	0.000296	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,1,1,2-Tetrachloroethane	ND	0.000314	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505059

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-7 (2-4')

Project: SWMU 10

Collection Date: 5/1/2015 10:10:00 AM

Lab ID: 1505059-001

Matrix: SOIL

Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
1,1,2,2-Tetrachloroethane	ND	0.000424	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Tetrachloroethene (PCE)	ND	0.000383	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
trans-1,2-DCE	ND	0.000312	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
trans-1,3-Dichloropropene	ND	0.000252	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,2,3-Trichlorobenzene	ND	0.000706	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,2,4-Trichlorobenzene	ND	0.000723	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,1,1-Trichloroethane	ND	0.000275	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,1,2-Trichloroethane	ND	0.00193	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Trichloroethene (TCE)	ND	0.000384	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Trichlorofluoromethane	ND	0.000390	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
1,2,3-Trichloropropane	ND	0.000678	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Vinyl chloride	ND	0.000220	0.00193		mg/Kg-dr	1	5/7/2015 10:40:37 AM	19107
Surr: 1,2-Dichloroethane-d4	98.3	0	70-130		%REC	1	5/7/2015 10:40:37 AM	19107
Surr: 4-Bromofluorobenzene	91.7	0	70-130		%REC	1	5/7/2015 10:40:37 AM	19107
Surr: Dibromofluoromethane	100	0	70-130		%REC	1	5/7/2015 10:40:37 AM	19107
Surr: Toluene-d8	87.4	0	70-130		%REC	1	5/7/2015 10:40:37 AM	19107
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.74	3.0		mg/Kg-dr	1	5/6/2015 4:20:25 AM	R25982
Surr: BFB	105	0	67.4-150		%REC	1	5/6/2015 4:20:25 AM	R25982

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Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505059

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-7 (4-6')

Project: SWMU 10

Collection Date: 5/1/2015 10:20:00 AM

Lab ID: 1505059-002

Matrix: SOIL

Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	ND	5.5	10		mg/Kg-dr	1	5/6/2015 1:09:05 AM	19040
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	5/6/2015 1:09:05 AM	19040
Surr: DNOP	105	0	57.9-140		%REC	1	5/6/2015 1:09:05 AM	19040
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	16	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.0057	0.0035	0.040	J	mg/Kg-dr	1	5/14/2015 3:51:14 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	7.9	15		mg/Kg-dr	5	5/8/2015 3:05:50 PM	19080
Arsenic	2.2	0.35	3.0	J	mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Barium	200	0.036	0.12		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Beryllium	0.92	0.0089	0.18		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Chromium	11	0.072	0.36		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Cobalt	5.7	0.045	0.36		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Iron	16000	72	300		mg/Kg-dr	100	5/7/2015 11:49:08 AM	19080
Lead	2.5	0.13	0.30		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Manganese	710	0.35	0.60		mg/Kg-dr	5	5/8/2015 3:05:50 PM	19080
Nickel	10	0.15	0.60		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Selenium	ND	1.8	3.0		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Silver	ND	0.036	0.30		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Vanadium	24	0.040	3.0		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
Zinc	19	0.77	3.0		mg/Kg-dr	1	5/7/2015 3:03:22 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Acenaphthylene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Aniline	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Azobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Benz(a)anthracene	ND	0.093	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Benzo(a)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Benzo(g,h,i)perylene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Benzo(k)fluoranthene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Benzoic acid	ND	0.068	0.59		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Benzyl alcohol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Bis(2-chloroethoxy)methane	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-7 (4-6')

Project: SWMU 10

Collection Date: 5/1/2015 10:20:00 AM

Lab ID: 1505059-002

Matrix: SOIL

Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Bis(2-chloroethyl)ether	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.091	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
4-Bromophenyl phenyl ether	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Butyl benzyl phthalate	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Carbazole	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2-Chloronaphthalene	ND	0.13	0.30		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2-Chlorophenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
4-Chlorophenyl phenyl ether	ND	0.18	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Chrysene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Di-n-butyl phthalate	ND	0.13	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Di-n-octyl phthalate	ND	0.13	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Dibenz(a,h)anthracene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Dibenzofuran	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
1,2-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
1,3-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
1,4-Dichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
3,3'-Dichlorobenzidine	ND	0.091	0.30		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Diethyl phthalate	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Dimethyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2,4-Dichlorophenol	ND	0.12	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2,4-Dimethylphenol	ND	0.093	0.36		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.064	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2,4-Dinitrotoluene	ND	0.11	0.59		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Fluoranthene	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Fluorene	ND	0.16	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Hexachlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Hexachlorobutadiene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Hexachlorocyclopentadiene	ND	0.082	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Hexachloroethane	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Isophorone	ND	0.13	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
1-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2-Methylphenol	ND	0.12	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505059

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-7 (4-6')

Project: SWMU 10

Collection Date: 5/1/2015 10:20:00 AM

Lab ID: 1505059-002

Matrix: SOIL

Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
N-Nitrosodiphenylamine	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Naphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
4-Nitroaniline	ND	0.11	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Nitrobenzene	ND	0.12	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2-Nitrophenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
4-Nitrophenol	ND	0.10	0.30		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Pentachlorophenol	ND	0.074	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Phenanthrene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Phenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Pyrene	ND	0.15	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Pyridine	ND	0.10	0.48		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
1,2,4-Trichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2,4,5-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
2,4,6-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 5:52:34 PM	19157
Surr: 2-Fluorophenol	60.7		26.4-129		%REC	1	5/13/2015 5:52:34 PM	19157
Surr: Phenol-d5	61.3		34.8-118		%REC	1	5/13/2015 5:52:34 PM	19157
Surr: 2,4,6-Tribromophenol	73.6		26.8-128		%REC	1	5/13/2015 5:52:34 PM	19157
Surr: Nitrobenzene-d5	60.5		35.8-124		%REC	1	5/13/2015 5:52:34 PM	19157
Surr: 2-Fluorobiphenyl	67.1		24.5-139		%REC	1	5/13/2015 5:52:34 PM	19157
Surr: 4-Terphenyl-d14	63.6		29.4-129		%REC	1	5/13/2015 5:52:34 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.0123	0.000401	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Toluene	0.00801	0.000185	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Ethylbenzene	0.00188	0.000300	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Xylenes, Total	0.00622	0.00106	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Methyl tert-butyl ether (MTBE)	0.000891	0.000747	0.00178	J	mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,2,4-Trimethylbenzene	0.00194	0.000466	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,3,5-Trimethylbenzene	0.00119	0.000313	0.00178	J	mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,2-Dichloroethane (EDC)	ND	0.000477	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,2-Dibromoethane (EDB)	ND	0.000213	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Naphthalene	ND	0.000582	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1-Methylnaphthalene	ND	0.000700	0.00356		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
2-Methylnaphthalene	ND	0.000696	0.00356		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Acetone	0.00723	0.00111	0.00891	J	mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Bromobenzene	ND	0.000496	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-7 (4-6')

Project: SWMU 10

Collection Date: 5/1/2015 10:20:00 AM

Lab ID: 1505059-002

Matrix: SOIL

Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Bromodichloromethane	ND	0.000241	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Bromoform	ND	0.000462	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Bromomethane	ND	0.00105	0.00267		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
2-Butanone	0.00175	0.000570	0.00891	J	mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Carbon tetrachloride	ND	0.000322	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Chlorobenzene	ND	0.000181	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Chloroethane	ND	0.00178	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Chloroform	ND	0.000367	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Chloromethane	ND	0.000210	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
2-Chlorotoluene	ND	0.000348	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Carbon disulfide	ND	0.000806	0.00891		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
4-Chlorotoluene	ND	0.000343	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
cis-1,2-DCE	ND	0.000471	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
cis-1,3-Dichloropropene	ND	0.00178	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,2-Dibromo-3-chloropropane	ND	0.000523	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Dibromochloromethane	ND	0.000200	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Dibromomethane	ND	0.00101	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,2-Dichlorobenzene	ND	0.000395	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,3-Dichlorobenzene	ND	0.000302	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,4-Dichlorobenzene	ND	0.000280	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Dichlorodifluoromethane	ND	0.000727	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,1-Dichloroethane	ND	0.000416	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,1-Dichloroethene	ND	0.000297	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,2-Dichloropropane	ND	0.000381	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,3-Dichloropropane	ND	0.000277	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
2,2-Dichloropropane	ND	0.000310	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,1-Dichloropropene	ND	0.000326	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Hexachlorobutadiene	ND	0.000359	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Isopropylbenzene	ND	0.000413	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
4-Isopropyltoluene	ND	0.000691	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Methylene chloride	0.000686	0.000440	0.00178	J	mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
n-Butylbenzene	ND	0.000731	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
2-Hexanone	ND	0.000371	0.00891		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
n-Propylbenzene	ND	0.000334	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
sec-Butylbenzene	0.000650	0.000450	0.00178	J	mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Styrene	ND	0.000295	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
4-Methyl-2-pentanone	ND	0.000752	0.00891		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
tert-Butylbenzene	ND	0.000273	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,1,1,2-Tetrachloroethane	ND	0.000290	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505059

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-7 (4-6')

Project: SWMU 10

Collection Date: 5/1/2015 10:20:00 AM

Lab ID: 1505059-002

Matrix: SOIL

Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
1,1,2,2-Tetrachloroethane	ND	0.000392	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Tetrachloroethene (PCE)	ND	0.000353	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
trans-1,2-DCE	ND	0.000288	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
trans-1,3-Dichloropropene	ND	0.000233	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,2,3-Trichlorobenzene	ND	0.000652	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,2,4-Trichlorobenzene	ND	0.000667	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,1,1-Trichloroethane	ND	0.000253	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,1,2-Trichloroethane	ND	0.00178	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Trichloroethene (TCE)	ND	0.000354	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Trichlorofluoromethane	ND	0.000360	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
1,2,3-Trichloropropane	ND	0.000626	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Vinyl chloride	ND	0.000203	0.00178		mg/Kg-dr	1	5/7/2015 11:10:01 AM	19107
Surr: 1,2-Dichloroethane-d4	94.8	0	70-130		%REC	1	5/7/2015 11:10:01 AM	19107
Surr: 4-Bromofluorobenzene	95.1	0	70-130		%REC	1	5/7/2015 11:10:01 AM	19107
Surr: Dibromofluoromethane	97.2	0	70-130		%REC	1	5/7/2015 11:10:01 AM	19107
Surr: Toluene-d8	91.5	0	70-130		%REC	1	5/7/2015 11:10:01 AM	19107
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.82	3.3		mg/Kg-dr	1	5/6/2015 4:49:21 AM	R25982
Surr: BFB	112	0	67.4-150		%REC	1	5/6/2015 4:49:21 AM	R25982

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Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505059

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-7 (18-20')

Project: SWMU 10

Collection Date: 5/1/2015 10:30:00 AM

Lab ID: 1505059-003

Matrix: SOIL

Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	ND	5.4	9.8		mg/Kg-dr	1	5/6/2015 1:36:03 AM	19040
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg-dr	1	5/6/2015 1:36:03 AM	19040
Surr: DNOP	107	0	57.9-140		%REC	1	5/6/2015 1:36:03 AM	19040
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	15	1.0	1.0		wt%	1	5/4/2015 1:31:00 PM	R25960
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.0035	0.0035	0.040	J	mg/Kg-dr	1	5/14/2015 3:52:59 PM	19227
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	7.6	14		mg/Kg-dr	5	5/13/2015 10:27:12 AM	19080
Arsenic	ND	1.7	14		mg/Kg-dr	5	5/13/2015 10:27:12 AM	19080
Barium	250	0.034	0.12		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Beryllium	1.1	0.0086	0.17		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Chromium	16	0.070	0.35		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Cobalt	7.2	0.044	0.35		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Iron	24000	70	290		mg/Kg-dr	100	5/7/2015 11:50:31 AM	19080
Lead	2.2	0.13	0.29		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Manganese	540	0.14	0.23		mg/Kg-dr	2	5/7/2015 3:07:47 PM	19080
Nickel	16	0.15	0.58		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Silver	ND	0.034	0.29		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Vanadium	23	0.039	2.9		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
Zinc	24	0.75	2.9		mg/Kg-dr	1	5/7/2015 3:06:19 PM	19080
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Aniline	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Anthracene	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Benz(a)anthracene	ND	0.092	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Benzoic acid	ND	0.067	0.59		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-7 (18-20')

Project: SWMU 10

Collection Date: 5/1/2015 10:30:00 AM

Lab ID: 1505059-003

Matrix: SOIL

Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Bis(2-chloroethyl)ether	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.090	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2-Chloronaphthalene	ND	0.13	0.29		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Chrysene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Di-n-butyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Di-n-octyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Dibenz(a,h)anthracene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Dibenzofuran	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
3,3'-Dichlorobenzidine	ND	0.090	0.29		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2,4-Dichlorophenol	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2,4-Dimethylphenol	ND	0.092	0.35		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.064	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2,4-Dinitrotoluene	ND	0.10	0.59		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Fluorene	ND	0.16	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Hexachlorobutadiene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Hexachlorocyclopentadiene	ND	0.081	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Isophorone	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2-Methylphenol	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505059

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-7 (18-20')

Project: SWMU 10

Collection Date: 5/1/2015 10:30:00 AM

Lab ID: 1505059-003

Matrix: SOIL

Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
4-Nitroaniline	ND	0.11	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2-Nitrophenol	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
4-Nitrophenol	ND	0.10	0.29		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Pentachlorophenol	ND	0.073	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Phenol	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Pyridine	ND	0.098	0.47		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2,4,5-Trichlorophenol	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
2,4,6-Trichlorophenol	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 6:20:19 PM	19157
Surr: 2-Fluorophenol	66.9		26.4-129		%REC	1	5/13/2015 6:20:19 PM	19157
Surr: Phenol-d5	65.1		34.8-118		%REC	1	5/13/2015 6:20:19 PM	19157
Surr: 2,4,6-Tribromophenol	67.9		26.8-128		%REC	1	5/13/2015 6:20:19 PM	19157
Surr: Nitrobenzene-d5	65.4		35.8-124		%REC	1	5/13/2015 6:20:19 PM	19157
Surr: 2-Fluorobiphenyl	72.3		24.5-139		%REC	1	5/13/2015 6:20:19 PM	19157
Surr: 4-Terphenyl-d14	63.1		29.4-129		%REC	1	5/13/2015 6:20:19 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.0149	0.000496	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Toluene	0.00962	0.000229	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Ethylbenzene	0.00213	0.000370	0.00220	J	mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Xylenes, Total	0.00711	0.00131	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Methyl tert-butyl ether (MTBE)	ND	0.000922	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,2,4-Trimethylbenzene	0.00201	0.000575	0.00220	J	mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,3,5-Trimethylbenzene	0.00114	0.000386	0.00220	J	mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,2-Dichloroethane (EDC)	ND	0.000589	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,2-Dibromoethane (EDB)	ND	0.000263	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Naphthalene	ND	0.000719	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1-Methylnaphthalene	ND	0.000864	0.00440		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
2-Methylnaphthalene	ND	0.000859	0.00440		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Acetone	0.00158	0.00137	0.0110	J	mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Bromobenzene	ND	0.000612	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 1505059

Date Reported: 10/12/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-7 (18-20')

Project: SWMU 10

Collection Date: 5/1/2015 10:30:00 AM

Lab ID: 1505059-003

Matrix: SOIL

Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Bromodichloromethane	ND	0.000297	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Bromoform	ND	0.000570	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Bromomethane	ND	0.00130	0.00330		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
2-Butanone	ND	0.000704	0.0110		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Carbon tetrachloride	ND	0.000398	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Chlorobenzene	ND	0.000223	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Chloroethane	ND	0.00220	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Chloroform	ND	0.000453	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Chloromethane	ND	0.000259	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
2-Chlorotoluene	ND	0.000429	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Carbon disulfide	ND	0.000995	0.0110		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
4-Chlorotoluene	ND	0.000424	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
cis-1,2-DCE	ND	0.000582	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
cis-1,3-Dichloropropene	ND	0.00220	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,2-Dibromo-3-chloropropane	ND	0.000646	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Dibromochloromethane	ND	0.000247	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Dibromomethane	ND	0.00125	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,2-Dichlorobenzene	ND	0.000488	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,3-Dichlorobenzene	ND	0.000373	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,4-Dichlorobenzene	ND	0.000345	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Dichlorodifluoromethane	ND	0.000898	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,1-Dichloroethane	ND	0.000514	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,1-Dichloroethene	ND	0.000367	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,2-Dichloropropane	ND	0.000470	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,3-Dichloropropane	ND	0.000342	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
2,2-Dichloropropane	ND	0.000382	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,1-Dichloropropene	ND	0.000403	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Hexachlorobutadiene	ND	0.000444	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Isopropylbenzene	ND	0.000510	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
4-Isopropyltoluene	ND	0.000853	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Methylene chloride	0.000704	0.000543	0.00220	J	mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
n-Butylbenzene	ND	0.000903	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
2-Hexanone	ND	0.000457	0.0110		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
n-Propylbenzene	ND	0.000412	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
sec-Butylbenzene	0.000792	0.000555	0.00220	J	mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Styrene	ND	0.000364	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
4-Methyl-2-pentanone	ND	0.000929	0.0110		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
tert-Butylbenzene	ND	0.000337	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,1,1,2-Tetrachloroethane	ND	0.000358	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505059

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-7 (18-20')

Project: SWMU 10

Collection Date: 5/1/2015 10:30:00 AM

Lab ID: 1505059-003

Matrix: SOIL

Received Date: 5/1/2015 1:48:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
1,1,2,2-Tetrachloroethane	ND	0.000484	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Tetrachloroethene (PCE)	ND	0.000436	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
trans-1,2-DCE	ND	0.000355	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
trans-1,3-Dichloropropene	ND	0.000288	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,2,3-Trichlorobenzene	ND	0.000805	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,2,4-Trichlorobenzene	ND	0.000824	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,1,1-Trichloroethane	ND	0.000313	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,1,2-Trichloroethane	ND	0.00220	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Trichloroethene (TCE)	ND	0.000437	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Trichlorofluoromethane	ND	0.000444	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
1,2,3-Trichloropropane	ND	0.000772	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Vinyl chloride	ND	0.000251	0.00220		mg/Kg-dr	1	5/7/2015 11:39:17 AM	19107
Surr: 1,2-Dichloroethane-d4	92.6	0	70-130		%REC	1	5/7/2015 11:39:17 AM	19107
Surr: 4-Bromofluorobenzene	102	0	70-130		%REC	1	5/7/2015 11:39:17 AM	19107
Surr: Dibromofluoromethane	97.0	0	70-130		%REC	1	5/7/2015 11:39:17 AM	19107
Surr: Toluene-d8	94.9	0	70-130		%REC	1	5/7/2015 11:39:17 AM	19107
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.93	3.7		mg/Kg-dr	1	5/6/2015 5:18:13 AM	R25982
Surr: BFB	107	0	67.4-150		%REC	1	5/6/2015 5:18:13 AM	R25982

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	



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Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 05, 2015
Description :
Sample ID : 1505059-001C SWMU 10-7 2-4 FT
Collected By :
Collection Date : 05/01/15 10:10

ESC Sample # : L762978-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/12/15	1
ORP	140		mV	2580 B-2011	05/10/15	1
pH	8.1	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 05/12/15 17:22 Printed: 05/12/15 17:22

L762978-01 (PH) - 8.1 at 20.7c



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Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 05, 2015
Description :
Sample ID : 1505059-002C SWMU 10-7 4-6 FT
Collected By :
Collection Date : 05/01/15 10:20

ESC Sample # : L762978-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/12/15	1
ORP	70.		mV	2580 B-2011	05/12/15	1
pH	8.6	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 05/12/15 17:22 Printed: 05/12/15 17:22
L762978-02 (PH) - 8.6 at 20.8c



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REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 05, 2015
Description :
Sample ID : 1505059-003C SWMU 10-7 18-20 FT
Collected By :
Collection Date : 05/01/15 10:30

ESC Sample # : L762978-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/12/15	1
ORP	60.		mV	2580 B-2011	05/12/15	1
pH	8.7	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 05/12/15 17:22 Printed: 05/12/15 17:22
L762978-03 (PH) - 8.7 at 20.7c



YOUR LAB OF CHOICE

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762978

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Est. 1970

May 12, 2015

Analyte	Result	Laboratory Blank Units % Rec	Limit	Batch	Date Analyzed
Chromium, Hexavalent	< 2	mg/kg		WG787747	05/12/15 05:36
Cyanide	< .25	mg/kg		WG787856	05/12/15 12:46

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
pH	su	7.60	7.60	0.656	1	L762972-04	WG787168
pH	su	6.70	6.70	0.449	1	L763354-01	WG787168
ORP	mV	70.0	70.0	0.0	20	L762970-02	WG787860
ORP	mV	140.	140.	0.0	20	L762978-01	WG787860
Chromium, Hexavalent	mg/kg	0.0	0.0	0.0	20	L763354-01	WG787747
Cyanide	mg/kg	0.0	0.0	0.0	20	L763578-02	WG787856
Cyanide	mg/kg	0.0	0.0	0.0	20	L763853-01	WG787856
ORP	mV	73.0	70.0	4.20	20	L762978-02	WG788141
ORP	mV	22.0	20.0	9.52	20	L763853-01	WG788141

Analyte	Units	Laboratory Control Known Val	Sample Result	% Rec	Limit	Batch
pH	su	7.84	7.80	99.5	98.3-101.7	WG787168
ORP	mV	100	100.	100.	90-110	WG787860
Chromium, Hexavalent	mg/kg	59.8	52.0	87.0	80-120	WG787747
Cyanide	mg/kg	101	108.	107.	50-150	WG787856
ORP	mV	100	109.	109.	90-110	WG788141

Analyte	Units	Laboratory Control Result	Sample Ref	Duplicate %Rec	Limit	RPD	Limit	Batch
pH	su	7.80	7.80	99.0	98.3-101.7	0.0	20	WG787168
ORP	mV	100.	100.	100.	90-110	0.0	20	WG787860
Chromium, Hexavalent	mg/kg	52.2	52.0	87.0	80-120	0.384	20	WG787747
Cyanide	mg/kg	112.	108.	111.	50-150	3.64	20	WG787856
ORP	mV	110.	109.	110.	90-110	0.913	20	WG788141

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



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Hall Environmental Analysis Laboratory

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Quality Assurance Report
Level II

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Est. 1970

May 12, 2015

Analyte	Units	MS Res	Matrix Spike			% Rec	Limit	Ref Samp	Batch
			Ref Res	TV					
Chromium, Hexavalent	mg/kg	20.9	0.0	20		100.	75-125	L763354-01	WG787747
Cyanide	mg/kg	3.27	0.0	3.33		98.0	80-120	L763578-01	WG787856

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Chromium, Hexavalent	mg/kg	20.5	20.9	102.	75-125	1.93	20	L763354-01	WG787747
Cyanide	mg/kg	3.18	3.27	95.5	80-120	2.79	20	L763578-01	WG787856

Batch number / Run number / Sample number cross reference

WG787168: R3035796: L762978-01 02 03
WG787860: R3036066: L762978-01
WG787747: R3036267: L762978-01 02 03
WG787856: R3036409: L762978-01 02 03
WG788141: R3036493: L762978-02 03

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

* Performance of this Analyte is outside of established criteria.

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505059

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19040	SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID: 19040			RunNo: 25952					
Prep Date:	5/4/2015	Analysis Date: 5/5/2015			SeqNo: 769701		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	9.5		10.00		95.4	57.9	140			

Sample ID	LCS-19040		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 19040		RunNo: 25952					
Prep Date:	5/4/2015		Analysis Date: 5/5/2015		SeqNo: 769702		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	102	67.8	130			
Surr: DNOP	4.9		5.000		97.4	57.9	140			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505059

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-19107		SampType: LCS			TestCode: Method 8260B/5035LOW: VOLATILES				
Client ID:	LCSS		Batch ID: 19107			RunNo: 26028				
Prep Date:	5/7/2015		Analysis Date: 5/7/2015			SeqNo: 771797		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0107	0.00200	0.01000	0	107	70	130			
Toluene	0.00998	0.00200	0.01000	0	99.8	70	130			
Chlorobenzene	0.00897	0.00200	0.01000	0	89.7	70	130			
1,1-Dichloroethene	0.0114	0.00200	0.01000	0	114	70	130			
Trichloroethene (TCE)	0.0102	0.00200	0.01000	0	102	61.6	131			
Surr: 1,2-Dichloroethane-d4	0.0253		0.02500		101	70	130			
Surr: 4-Bromofluorobenzene	0.0237		0.02500		94.8	70	130			
Surr: Dibromofluoromethane	0.0251		0.02500		100	70	130			
Surr: Toluene-d8	0.0253		0.02500		101	70	130			

Sample ID	mb-19107		SampType: MBLK			TestCode: Method 8260B/5035LOW: VOLATILES				
Client ID:	PBS		Batch ID: 19107			RunNo: 26028				
Prep Date:	5/7/2015		Analysis Date: 5/7/2015			SeqNo: 771798		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	0.000210	0.00200								J
Ethylbenzene	ND	0.00200								
Xylenes, Total	ND	0.00200								
Methyl tert-butyl ether (MTBE)	ND	0.00200								
1,2,4-Trimethylbenzene	ND	0.00200								
1,3,5-Trimethylbenzene	ND	0.00200								
1,2-Dichloroethane (EDC)	ND	0.00200								
1,2-Dibromoethane (EDB)	ND	0.00200								
Naphthalene	ND	0.00200								
1-Methylnaphthalene	ND	0.00400								
2-Methylnaphthalene	ND	0.00400								
Acetone	ND	0.0100								
Bromobenzene	ND	0.00200								
Bromodichloromethane	ND	0.00200								
Bromoform	ND	0.00200								
Bromomethane	ND	0.00300								
2-Butanone	0.000810	0.0100								J
Carbon tetrachloride	ND	0.00200								
Chlorobenzene	ND	0.00200								
Chloroethane	ND	0.00200								
Chloroform	ND	0.00200								
Chloromethane	ND	0.00200								
2-Chlorotoluene	ND	0.00200								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505059

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19107		SampType: MBLK		TestCode: Method 8260B/5035LOW: VOLATILES					
Client ID:	PBS		Batch ID: 19107		RunNo: 26028					
Prep Date:	5/7/2015		Analysis Date: 5/7/2015		SeqNo: 771798		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Carbon disulfide	ND	0.0100								
4-Chlorotoluene	ND	0.00200								
cis-1,2-DCE	ND	0.00200								
cis-1,3-Dichloropropene	ND	0.00200								
1,2-Dibromo-3-chloropropane	ND	0.00200								
Dibromochloromethane	ND	0.00200								
Dibromomethane	ND	0.00200								
1,2-Dichlorobenzene	ND	0.00200								
1,3-Dichlorobenzene	ND	0.00200								
1,4-Dichlorobenzene	ND	0.00200								
Dichlorodifluoromethane	ND	0.00200								
1,1-Dichloroethane	ND	0.00200								
1,1-Dichloroethene	ND	0.00200								
1,2-Dichloropropane	ND	0.00200								
1,3-Dichloropropane	ND	0.00200								
2,2-Dichloropropane	ND	0.00200								
1,1-Dichloropropene	ND	0.00200								
Hexachlorobutadiene	ND	0.00200								
Isopropylbenzene	ND	0.00200								
4-Isopropyltoluene	ND	0.00200								
Methylene chloride	ND	0.00200								
n-Butylbenzene	ND	0.00200								
2-Hexanone	ND	0.0100								
n-Propylbenzene	ND	0.00200								
sec-Butylbenzene	ND	0.00200								
Styrene	ND	0.00200								
4-Methyl-2-pentanone	ND	0.0100								
tert-Butylbenzene	ND	0.00200								
1,1,1,2-Tetrachloroethane	ND	0.00200								
1,1,2,2-Tetrachloroethane	ND	0.00200								
Tetrachloroethene (PCE)	ND	0.00200								
trans-1,2-DCE	ND	0.00200								
trans-1,3-Dichloropropene	ND	0.00200								
1,2,3-Trichlorobenzene	ND	0.00200								
1,2,4-Trichlorobenzene	ND	0.00200								
1,1,1-Trichloroethane	ND	0.00200								
1,1,2-Trichloroethane	ND	0.00200								
Trichloroethene (TCE)	ND	0.00200								
Trichlorofluoromethane	ND	0.00200								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505059

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19107		SampType:	MBLK		TestCode:	Method 8260B/5035LOW: VOLATILES			
Client ID:	PBS		Batch ID:	19107		RunNo:	26028			
Prep Date:	5/7/2015		Analysis Date:	5/7/2015		SeqNo:	771798		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2,3-Trichloropropane	ND	0.00200								
Vinyl chloride	ND	0.00200								
Surr: 1,2-Dichloroethane-d4	0.0256		0.02500		102	70	130			
Surr: 4-Bromofluorobenzene	0.0245		0.02500		97.9	70	130			
Surr: Dibromofluoromethane	0.0258		0.02500		103	70	130			
Surr: Toluene-d8	0.0232		0.02500		92.8	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505059

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19157		SampType: MBLK		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	PBS		Batch ID: 19157		RunNo: 26173					
Prep Date:	5/11/2015		Analysis Date: 5/13/2015		SeqNo: 776628		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	0.20								
Acenaphthylene	ND	0.20								
Aniline	ND	0.20								
Anthracene	ND	0.20								
Azobenzene	ND	0.20								
Benz(a)anthracene	ND	0.20								
Benzo(a)pyrene	ND	0.20								
Benzo(b)fluoranthene	ND	0.20								
Benzo(g,h,i)perylene	ND	0.20								
Benzo(k)fluoranthene	ND	0.20								
Benzoic acid	ND	0.50								
Benzyl alcohol	ND	0.20								
Bis(2-chloroethoxy)methane	ND	0.20								
Bis(2-chloroethyl)ether	ND	0.20								
Bis(2-chloroisopropyl)ether	ND	0.20								
Bis(2-ethylhexyl)phthalate	ND	0.50								
4-Bromophenyl phenyl ether	ND	0.20								
Butyl benzyl phthalate	ND	0.20								
Carbazole	ND	0.20								
4-Chloro-3-methylphenol	ND	0.50								
4-Chloroaniline	ND	0.50								
2-Chloronaphthalene	ND	0.25								
2-Chlorophenol	ND	0.20								
4-Chlorophenyl phenyl ether	ND	0.20								
Chrysene	ND	0.20								
Di-n-butyl phthalate	ND	0.40								
Di-n-octyl phthalate	ND	0.40								
Dibenz(a,h)anthracene	ND	0.20								
Dibenzofuran	ND	0.20								
1,2-Dichlorobenzene	ND	0.20								
1,3-Dichlorobenzene	ND	0.20								
1,4-Dichlorobenzene	ND	0.20								
3,3'-Dichlorobenzidine	ND	0.25								
Diethyl phthalate	ND	0.20								
Dimethyl phthalate	ND	0.20								
2,4-Dichlorophenol	ND	0.40								
2,4-Dimethylphenol	ND	0.30								
4,6-Dinitro-2-methylphenol	ND	0.40								
2,4-Dinitrophenol	ND	0.50								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505059

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19157	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBS	Batch ID:	19157	RunNo:	26173					
Prep Date:	5/11/2015	Analysis Date:	5/13/2015	SeqNo:	776628	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	0.50								
2,6-Dinitrotoluene	ND	0.50								
Fluoranthene	ND	0.20								
Fluorene	ND	0.20								
Hexachlorobenzene	ND	0.20								
Hexachlorobutadiene	ND	0.20								
Hexachlorocyclopentadiene	ND	0.20								
Hexachloroethane	ND	0.20								
Indeno(1,2,3-cd)pyrene	ND	0.20								
Isophorone	ND	0.40								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
2-Methylphenol	ND	0.40								
3+4-Methylphenol	ND	0.20								
N-Nitrosodi-n-propylamine	ND	0.20								
N-Nitrosodiphenylamine	ND	0.20								
Naphthalene	ND	0.20								
2-Nitroaniline	ND	0.20								
3-Nitroaniline	ND	0.20								
4-Nitroaniline	ND	0.40								
Nitrobenzene	ND	0.40								
2-Nitrophenol	ND	0.20								
4-Nitrophenol	ND	0.25								
Pentachlorophenol	ND	0.40								
Phenanthrene	ND	0.20								
Phenol	ND	0.20								
Pyrene	ND	0.20								
Pyridine	ND	0.40								
1,2,4-Trichlorobenzene	ND	0.20								
2,4,5-Trichlorophenol	ND	0.20								
2,4,6-Trichlorophenol	ND	0.20								
Surr: 2-Fluorophenol	2.5		3.330		75.2	26.4	129			
Surr: Phenol-d5	2.5		3.330		73.9	34.8	118			
Surr: 2,4,6-Tribromophenol	2.7		3.330		80.2	26.8	128			
Surr: Nitrobenzene-d5	1.3		1.670		78.9	35.8	124			
Surr: 2-Fluorobiphenyl	1.4		1.670		82.1	24.5	139			
Surr: 4-Terphenyl-d14	1.3		1.670		77.5	29.4	129			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505059

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-19157		SampType: LCS			TestCode: EPA Method 8270C: Semivolatiles				
Client ID:	LCSS		Batch ID: 19157			RunNo: 26173				
Prep Date:	5/11/2015		Analysis Date: 5/13/2015			SeqNo: 776629		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.1	0.20	1.670	0	64.5	45.8	114			
4-Chloro-3-methylphenol	2.1	0.50	3.330	0	64.3	52.3	122			
2-Chlorophenol	2.0	0.20	3.330	0	59.0	49.9	115			
1,4-Dichlorobenzene	1.1	0.20	1.670	0	65.4	43.7	107			
2,4-Dinitrotoluene	0.92	0.50	1.670	0	55.3	36	106			
N-Nitrosodi-n-propylamine	0.92	0.20	1.670	0	55.4	39.5	110			
4-Nitrophenol	2.3	0.25	3.330	0	69.0	45.1	121			
Pentachlorophenol	2.1	0.40	3.330	0	63.3	23.7	111			
Phenol	2.1	0.20	3.330	0	63.1	52.7	119			
Pyrene	0.95	0.20	1.670	0	57.1	50.4	116			
1,2,4-Trichlorobenzene	1.3	0.20	1.670	0	75.2	40.1	114			
Surr: 2-Fluorophenol	2.3		3.330		67.8	26.4	129			
Surr: Phenol-d5	2.3		3.330		70.4	34.8	118			
Surr: 2,4,6-Tribromophenol	2.5		3.330		74.6	26.8	128			
Surr: Nitrobenzene-d5	1.2		1.670		71.3	35.8	124			
Surr: 2-Fluorobiphenyl	1.2		1.670		72.2	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		91.5	29.4	129			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505059

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19227		SampType: MBLK		TestCode: EPA Method 7471: Mercury					
Client ID:	PBS		Batch ID: 19227		RunNo: 26201					
Prep Date:	5/14/2015		Analysis Date: 5/14/2015		SeqNo: 777418		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	LCS-19227		SampType: LCS		TestCode: EPA Method 7471: Mercury					
Client ID:	LCSS		Batch ID: 19227		RunNo: 26201					
Prep Date:	5/14/2015		Analysis Date: 5/14/2015		SeqNo: 777419		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	100	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505059

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19080	SampType: MBLK			TestCode: EPA Method 6010B: Soil Metals					
Client ID:	PBS	Batch ID: 19080			RunNo: 26050					
Prep Date:	5/6/2015	Analysis Date: 5/7/2015			SeqNo: 772227		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	1.1	2.5								J
Lead	0.13	0.25								J
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	0.74	2.5								J

Sample ID	LCS-19080		SampType: LCS		TestCode: EPA Method 6010B: Soil Metals					
Client ID:	LCSS		Batch ID: 19080		RunNo: 26050					
Prep Date:	5/6/2015		Analysis Date: 5/7/2015		SeqNo: 772228		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	26	2.5	25.00	0	103	80	120			
Arsenic	25	2.5	25.00	0	101	80	120			
Barium	25	0.10	25.00	0	100	80	120			
Beryllium	27	0.15	25.00	0	107	80	120			
Cadmium	25	0.10	25.00	0	101	80	120			
Chromium	25	0.30	25.00	0	102	80	120			
Cobalt	25	0.30	25.00	0	99.2	80	120			
Iron	26	2.5	25.00	0	103	80	120			
Lead	25	0.25	25.00	0	101	80	120			
Manganese	25	0.10	25.00	0	101	80	120			
Nickel	25	0.50	25.00	0	99.2	80	120			
Selenium	25	2.5	25.00	0	99.4	80	120			
Silver	5.4	0.25	5.000	0	107	80	120			
Vanadium	26	2.5	25.00	0	105	80	120			
Zinc	26	2.5	25.00	0	103	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505059

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	PBS	Batch ID:	R25982	RunNo:	25982					
Prep Date:		Analysis Date:	5/5/2015	SeqNo:	771006	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	470		500.0		94.7	67.4	150			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	LCSS	Batch ID:	R25982	RunNo:	25982					
Prep Date:		Analysis Date:	5/5/2015	SeqNo:	771007	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.5	79.9	135			
Surr: BFB	460		500.0		92.6	67.4	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: **Western Refining Gallup**

Work Order Number: **1505059**

RcptNo: 1

Received by/date:

AT

05/01/15

Logged By: **Lindsay Mangin**

5/1/2015 1:48:00 PM

Lindsay Mangin

Completed By: **Lindsay Mangin**

5/2/2015 10:11:48 AM

Lindsay Mangin

Reviewed By:

AG

05/04/15

Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☒

No ☐

Not Present ☐

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Client

Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of >0° C to 6.0°C

Yes ☒

No ☐

NA ☐

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

Yes ☒

No ☐

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

Yes ☒

No ☐

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

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☐

No ☐

No VOA Vials ☒

11. Were any sample containers received broken?

Yes ☐

No ☒

12. Does paperwork match bottle labels?

Yes ☒

No ☐

(Note discrepancies on chain of custody)

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

Yes ☒

No ☐

(If no, notify customer for authorization.)

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

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

Yes ☐

No ☐

NA ☒

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

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

WESTERN REFINING SOUTHWEST, INC.
GALLUP REFINERY - SWMU 10
METALS AND CYANIDE ANALYSES FOR SOIL SAMPLES

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020



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

October 12, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0231
FAX

RE: SWMU 10

OrderNo.: 1505218

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/5/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 17, 2015.

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#: 1505218
Date: 10/12/2015

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding EPA Method 8270:

Sample "SWMU 10-5-GW" had two low spike surrogate recoveries out of the 6 spiked surrogates. The sample matrix spike (MS) and matrix spike duplicate (MSD) also had the same low surrogate recoveries (the recoveries for the MSD were all acceptable, but still low for 2 of the 6). These low surrogate recoveries are attributed to the sample matrix.

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505218

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5-GW

Project: SWMU 10

Collection Date: 5/4/2015 9:10:00 AM

Lab ID: 1505218-001

Matrix: AQUEOUS

Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH	
Diesel Range Organics (DRO)	3.1	0.91	1.0		mg/L	1	5/8/2015 1:27:13 PM	19094
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/8/2015 1:27:13 PM	19094
Surr: DNOP	115	0	76.5-150		%REC	1	5/8/2015 1:27:13 PM	19094
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB	
Gasoline Range Organics (GRO)	0.21	0.012	0.050		mg/L	1	5/6/2015 5:40:49 PM	R26016
Surr: BFB	174	0	80-120	S	%REC	1	5/6/2015 5:40:49 PM	R26016
EPA METHOD 300.0: ANIONS							Analyst: LGT	
Fluoride	ND	0.029	0.10		mg/L	1	5/6/2015 2:46:14 PM	R26034
Chloride	2800	67	250		mg/L	500	5/7/2015 6:13:17 PM	R26054
Sulfate	310	2.3	10		mg/L	20	5/6/2015 2:58:38 PM	R26034
EPA METHOD 200.7: DISSOLVED METALS							Analyst: JLF	
Barium	0.32	0.00095	0.0020		mg/L	1	5/6/2015 6:34:09 PM	R26030
Beryllium	0.00042	0.00031	0.0020	J	mg/L	1	5/6/2015 6:34:09 PM	R26030
Cadmium	ND	0.00097	0.0020		mg/L	1	5/6/2015 6:34:09 PM	R26030
Chromium	0.0039	0.0018	0.0060	J	mg/L	1	5/6/2015 6:34:09 PM	R26030
Cobalt	0.0035	0.0013	0.0060	J	mg/L	1	5/6/2015 6:34:09 PM	R26030
Iron	0.011	0.0073	0.020	J	mg/L	1	5/6/2015 6:34:09 PM	R26030
Manganese	0.27	0.00027	0.0020	*	mg/L	1	5/6/2015 6:34:09 PM	R26030
Nickel	0.0028	0.0021	0.010	J	mg/L	1	5/6/2015 6:34:09 PM	R26030
Silver	ND	0.0012	0.0050		mg/L	1	5/6/2015 6:34:09 PM	R26030
Vanadium	0.0020	0.0015	0.050	J	mg/L	1	5/6/2015 6:34:09 PM	R26030
Zinc	0.038	0.0028	0.010		mg/L	1	5/6/2015 6:34:09 PM	R26030
EPA METHOD 200.7: METALS							Analyst: JLF	
Barium	0.57	0.00095	0.0020		mg/L	1	5/11/2015 5:53:07 PM	19113
Beryllium	0.0011	0.00031	0.0020	J	mg/L	1	5/11/2015 5:53:07 PM	19113
Cadmium	ND	0.00097	0.0020		mg/L	1	5/11/2015 5:53:07 PM	19113
Chromium	0.0051	0.0022	0.0060	J	mg/L	1	5/11/2015 5:53:07 PM	19113
Cobalt	0.0056	0.0013	0.0060	J	mg/L	1	5/11/2015 5:53:07 PM	19113
Iron	5.7	0.073	0.20	*	mg/L	10	5/12/2015 1:51:10 PM	19113
Manganese	0.69	0.0015	0.0020	*	mg/L	1	5/11/2015 5:53:07 PM	19113
Nickel	0.0044	0.0023	0.010	J	mg/L	1	5/11/2015 5:53:07 PM	19113
Silver	ND	0.0021	0.0050		mg/L	1	5/11/2015 5:53:07 PM	19113
Vanadium	0.013	0.0015	0.050	J	mg/L	1	5/11/2015 5:53:07 PM	19113
Zinc	0.034	0.0036	0.010		mg/L	1	5/11/2015 5:53:07 PM	19113
EPA 200.8: DISSOLVED METALS							Analyst: DBD	
Antimony	ND	0.00071	0.0050		mg/L	5	5/19/2015 2:02:16 PM	R26294
Arsenic	0.012	0.0032	0.050	J	mg/L	50	5/19/2015 1:57:20 PM	R26294

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505218

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5-GW

Project: SWMU 10

Collection Date: 5/4/2015 9:10:00 AM

Lab ID: 1505218-001

Matrix: AQUEOUS

Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: DBD	
Lead	ND	0.00013	0.0050		mg/L	5	5/19/2015 2:02:16 PM	R26294
Selenium	0.036	0.0097	0.050	J	mg/L	50	5/19/2015 1:57:20 PM	R26294
EPA 200.8: METALS							Analyst: DBD	
Antimony	0.00080	0.00022	0.0010	J	mg/L	1	5/8/2015 1:59:29 PM	19113
Arsenic	ND	0.015	0.050		mg/L	50	5/15/2015 12:23:43 PM	19113
Lead	0.0064	0.000069	0.0010		mg/L	1	5/8/2015 1:59:29 PM	19113
Selenium	0.036	0.0097	0.050	J	mg/L	50	5/15/2015 12:23:43 PM	19113
EPA METHOD 245.1: MERCURY							Analyst: MED	
Mercury	ND	0.000059	0.00020		mg/L	1	5/14/2015 10:16:51 AM	19207
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	1.9	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Acenaphthylene	ND	1.9	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Aniline	ND	1.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Anthracene	ND	1.6	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Azobenzene	ND	2.0	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Benzoic acid	ND	1.0	20		µg/L	1	5/13/2015 11:20:07 AM	19150
Benzyl alcohol	ND	1.2	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/13/2015 11:20:07 AM	19150
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Carbazole	ND	1.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/13/2015 11:20:07 AM	19150
4-Chloroaniline	ND	1.9	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2-Chlorophenol	ND	1.2	10		µg/L	1	5/13/2015 11:20:07 AM	19150
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Chrysene	ND	2.2	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/13/2015 11:20:07 AM	19150

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

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	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505218

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5-GW

Project: SWMU 10

Collection Date: 5/4/2015 9:10:00 AM

Lab ID: 1505218-001

Matrix: AQUEOUS

Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Dibenzofuran	ND	1.9	10		µg/L	1	5/13/2015 11:20:07 AM	19150
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/13/2015 11:20:07 AM	19150
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/13/2015 11:20:07 AM	19150
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/13/2015 11:20:07 AM	19150
3,3'-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Diethyl phthalate	ND	1.7	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/13/2015 11:20:07 AM	19150
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/13/2015 11:20:07 AM	19150
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/13/2015 11:20:07 AM	19150
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/13/2015 11:20:07 AM	19150
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Fluoranthene	ND	1.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Fluorene	ND	1.7	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Hexachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Hexachloroethane	ND	1.6	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Isophorone	ND	2.0	10		µg/L	1	5/13/2015 11:20:07 AM	19150
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2-Methylphenol	ND	1.2	10		µg/L	1	5/13/2015 11:20:07 AM	19150
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/13/2015 11:20:07 AM	19150
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/13/2015 11:20:07 AM	19150
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Naphthalene	ND	1.8	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2-Nitroaniline	ND	1.8	10		µg/L	1	5/13/2015 11:20:07 AM	19150
3-Nitroaniline	ND	1.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
4-Nitroaniline	ND	1.2	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Nitrobenzene	ND	1.5	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2-Nitrophenol	ND	1.2	10		µg/L	1	5/13/2015 11:20:07 AM	19150
4-Nitrophenol	ND	1.4	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Pentachlorophenol	ND	1.1	20		µg/L	1	5/13/2015 11:20:07 AM	19150
Phenanthrene	ND	2.0	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Phenol	ND	1.1	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Pyrene	ND	2.3	10		µg/L	1	5/13/2015 11:20:07 AM	19150

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505218

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5-GW

Project: SWMU 10

Collection Date: 5/4/2015 9:10:00 AM

Lab ID: 1505218-001

Matrix: AQUEOUS

Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Pyridine	ND	1.7	10		µg/L	1	5/13/2015 11:20:07 AM	19150
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/13/2015 11:20:07 AM	19150
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/13/2015 11:20:07 AM	19150
Surr: 2-Fluorophenol	3.97	0	14.9-111	S	%REC	1	5/13/2015 11:20:07 AM	19150
Surr: Phenol-d5	13.2	0	11.3-108		%REC	1	5/13/2015 11:20:07 AM	19150
Surr: 2,4,6-Tribromophenol	4.22	0	15.7-154	S	%REC	1	5/13/2015 11:20:07 AM	19150
Surr: Nitrobenzene-d5	82.1	0	47.8-106		%REC	1	5/13/2015 11:20:07 AM	19150
Surr: 2-Fluorobiphenyl	90.2	0	21.3-123		%REC	1	5/13/2015 11:20:07 AM	19150
Surr: 4-Terphenyl-d14	69.7	0	14.3-135		%REC	1	5/13/2015 11:20:07 AM	19150
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Benzene	27	0.065	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Toluene	2.7	0.11	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Ethylbenzene	1.6	0.10	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,2,4-Trimethylbenzene	3.7	0.16	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,3,5-Trimethylbenzene	3.9	0.12	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,2-Dichloroethane (EDC)	0.32	0.18	1.0	J	µg/L	1	5/12/2015 5:14:59 PM	R26144
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Naphthalene	ND	0.22	2.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1-Methylnaphthalene	3.1	0.54	4.0	J	µg/L	1	5/12/2015 5:14:59 PM	R26144
2-Methylnaphthalene	3.8	0.59	4.0	J	µg/L	1	5/12/2015 5:14:59 PM	R26144
Acetone	ND	0.94	10		µg/L	1	5/12/2015 5:14:59 PM	R26144
Bromobenzene	ND	0.11	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Bromoform	ND	0.16	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Bromomethane	ND	1.2	3.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
2-Butanone	ND	0.36	10		µg/L	1	5/12/2015 5:14:59 PM	R26144
Carbon disulfide	ND	0.67	10		µg/L	1	5/12/2015 5:14:59 PM	R26144
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Chloroethane	ND	0.10	2.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Chloroform	ND	0.21	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Chloromethane	ND	0.17	3.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/12/2015 5:14:59 PM	R26144

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505218

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5-GW

Project: SWMU 10

Collection Date: 5/4/2015 9:10:00 AM

Lab ID: 1505218-001

Matrix: AQUEOUS

Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Dibromomethane	ND	0.23	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,1-Dichloroethene	0.12	0.099	1.0	J	µg/L	1	5/12/2015 5:14:59 PM	R26144
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
2-Hexanone	ND	0.48	10		µg/L	1	5/12/2015 5:14:59 PM	R26144
Isopropylbenzene	1.2	0.15	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
4-Isopropyltoluene	0.92	0.19	1.0	J	µg/L	1	5/12/2015 5:14:59 PM	R26144
4-Methyl-2-pentanone	0.61	0.26	10	J	µg/L	1	5/12/2015 5:14:59 PM	R26144
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
n-Butylbenzene	0.40	0.25	3.0	J	µg/L	1	5/12/2015 5:14:59 PM	R26144
n-Propylbenzene	0.64	0.16	1.0	J	µg/L	1	5/12/2015 5:14:59 PM	R26144
sec-Butylbenzene	0.60	0.23	1.0	J	µg/L	1	5/12/2015 5:14:59 PM	R26144
Styrene	ND	0.11	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/12/2015 5:14:59 PM	R26144
Xylenes, Total	13	0.28	1.5		µg/L	1	5/12/2015 5:14:59 PM	R26144
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%REC	1	5/12/2015 5:14:59 PM	R26144
Surr: 4-Bromofluorobenzene	101	0	70-130		%REC	1	5/12/2015 5:14:59 PM	R26144

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505218

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-5-GW

Project: SWMU 10

Collection Date: 5/4/2015 9:10:00 AM

Lab ID: 1505218-001

Matrix: AQUEOUS

Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Surr: Dibromofluoromethane	97.0	0	70-130		%REC	1	5/12/2015 5:14:59 PM	R26144
Surr: Toluene-d8	102	0	70-130		%REC	1	5/12/2015 5:14:59 PM	R26144

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505218

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: TRIP BLANK

Project: SWMU 10

Collection Date:

Lab ID: 1505218-002

Matrix: TRIP BLANK

Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	5/6/2015 7:08:28 PM	R26016
Surr: BFB	86.2	0	80-120		%REC	1	5/6/2015 7:08:28 PM	R26016
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Benzene	ND	0.065	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Toluene	ND	0.11	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Naphthalene	ND	0.22	2.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Acetone	ND	0.94	10		µg/L	1	5/12/2015 5:42:27 PM	R26144
Bromobenzene	ND	0.11	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Bromoform	ND	0.16	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Bromomethane	ND	1.2	3.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
2-Butanone	ND	0.36	10		µg/L	1	5/12/2015 5:42:27 PM	R26144
Carbon disulfide	ND	0.67	10		µg/L	1	5/12/2015 5:42:27 PM	R26144
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Chloroethane	ND	0.10	2.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Chloroform	ND	0.21	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Chloromethane	ND	0.17	3.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Dibromomethane	ND	0.23	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505218

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: TRIP BLANK

Project: SWMU 10

Collection Date:

Lab ID: 1505218-002

Matrix: TRIP BLANK

Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
2-Hexanone	ND	0.48	10		µg/L	1	5/12/2015 5:42:27 PM	R26144
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/12/2015 5:42:27 PM	R26144
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Styrene	ND	0.11	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/12/2015 5:42:27 PM	R26144
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/12/2015 5:42:27 PM	R26144
Surr: 1,2-Dichloroethane-d4	98.6	0	70-130		%REC	1	5/12/2015 5:42:27 PM	R26144
Surr: 4-Bromofluorobenzene	101	0	70-130		%REC	1	5/12/2015 5:42:27 PM	R26144
Surr: Dibromofluoromethane	98.4	0	70-130		%REC	1	5/12/2015 5:42:27 PM	R26144
Surr: Toluene-d8	101	0	70-130		%REC	1	5/12/2015 5:42:27 PM	R26144

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
	D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	



12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859
Tax I.D. 62-0814289
Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 07, 2015
Description :
Sample ID : 1505218-001H SWMU 10-5 GW
Collected By :
Collection Date : 05/04/15 09:10

ESC Sample # : L763563-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	0.013	0.0050	mg/l	4500CN E-2011	05/12/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit (PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
Reported: 05/12/15 15:12 Printed: 05/12/15 15:13



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Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859
Tax I.D. 62-0814289
Est. 1970

REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 07, 2015
Description :
Sample ID : 1505218-001I SWMU 10-5 GW
Collected By :
Collection Date : 05/04/15 09:10

ESC Sample # : L763563-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	3500Cr C-2011	05/11/15	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit (PQL)
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
Reported: 05/12/15 15:12 Printed: 05/12/15 15:13



YOUR LAB OF CHOICE

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L763563

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

Tax I.D. 62-0814289

Est. 1970

May 12, 2015

Analyte	Result	Laboratory Blank Units	% Rec	Limit	Batch	Date Analyzed
Hexavalent Chromium	< .0005	mg/l			WG788013	05/11/15 12:19
Cyanide	< .005	mg/l			WG788140	05/12/15 13:30

Analyte	Units	Result	Duplicate Duplicate	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.000540	0.000510	5.71	20	L762964-02	WG788013
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L763563-02	WG788013
Cyanide	mg/l	0.0	0.0	0.0	20	L763748-02	WG788140
Cyanide	mg/l	0.0	0.0	0.0	20	L763536-08	WG788140

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Hexavalent Chromium	mg/l	0.002	0.00208	104.	90-110	WG788013
Cyanide	mg/l	.1	0.101	101.	90-110	WG788140

Analyte	Units	Result	Laboratory Control Sample Duplicate Ref	% Rec	Limit	RPD	Limit	Batch
Hexavalent Chromium	mg/l	0.00196	0.00208	98.0	90-110	5.94	20	WG788013
Cyanide	mg/l	0.0963	0.101	96.0	90-110	4.76	20	WG788140

Analyte	Units	MS Res	Matrix Spike Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0566	0.0	.05	110.*	90-110	L763173-02	WG788013
Cyanide	mg/l	0.195	0.0	.2	98.0	90-110	L763536-09	WG788140

Analyte	Units	MSD	Matrix Spike Duplicate Ref	% Rec	Limit	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0564	0.0566	113.*	90-110	0.354	20	L763173-02	WG788013
Cyanide	mg/l	0.198	0.195	99.0	90-110	1.53	20	L763536-09	WG788140

Batch number /Run number / Sample number cross reference

WG788013: R3036316: L763563-02
WG788140: R3036440: L763563-01

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505218

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Metals					
Client ID:	PBW	Batch ID:	R26030	RunNo:	26030					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	771646	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	0.00038	0.0020								J
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Metals					
Client ID:	LCSW	Batch ID:	R26030	RunNo:	26030					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	771647	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	95.7	85	115			
Beryllium	0.48	0.0020	0.5000	0	96.6	85	115			
Cadmium	0.50	0.0020	0.5000	0	100	85	115			
Chromium	0.48	0.0060	0.5000	0	95.1	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.0	85	115			
Iron	0.49	0.020	0.5000	0	98.8	85	115			
Manganese	0.48	0.0020	0.5000	0	96.8	85	115			
Nickel	0.47	0.010	0.5000	0	93.2	85	115			
Silver	0.096	0.0050	0.1000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.5	85	115			
Zinc	0.46	0.010	0.5000	0	92.0	85	115			

Sample ID	MB-19113	SampType:	MBLK	TestCode:	EPA Method 200.7: Metals					
Client ID:	PBW	Batch ID:	19113	RunNo:	26109					
Prep Date:	5/7/2015	Analysis Date:	5/11/2015	SeqNo:	774475	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505218

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19113		SampType: MBLK		TestCode: EPA Method 200.7: Metals					
Client ID:	PBW		Batch ID: 19113		RunNo: 26109					
Prep Date:	5/7/2015		Analysis Date: 5/11/2015		SeqNo: 774475		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS-19113		SampType: LCS		TestCode: EPA Method 200.7: Metals					
Client ID:	LCSW		Batch ID: 19113		RunNo: 26109					
Prep Date:	5/7/2015		Analysis Date: 5/11/2015		SeqNo: 774476		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.50	0.0020	0.5000	0	99.0	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Chromium	0.50	0.0060	0.5000	0	100	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.5	85	115			
Iron	0.48	0.020	0.5000	0	95.4	85	115			
Manganese	0.49	0.0020	0.5000	0	97.1	85	115			
Nickel	0.49	0.010	0.5000	0	98.3	85	115			
Silver	0.11	0.0050	0.1000	0	107	85	115			
Vanadium	0.52	0.050	0.5000	0	104	85	115			
Zinc	0.50	0.010	0.5000	0	100	85	115			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505218

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	R26030	RunNo:	26030					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	771648	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.0020								
Beryllium	ND	0.0020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R26030	RunNo:	26030					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	771649	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.48	0.0020	0.5000	0	96.0	85	115			
Beryllium	0.49	0.0020	0.5000	0	97.5	85	115			
Cadmium	0.51	0.0020	0.5000	0	103	85	115			
Chromium	0.49	0.0060	0.5000	0	97.7	85	115			
Cobalt	0.49	0.0060	0.5000	0	98.2	85	115			
Iron	0.50	0.020	0.5000	0	101	85	115			
Manganese	0.49	0.0020	0.5000	0	97.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.7	85	115			
Silver	0.094	0.0050	0.1000	0	93.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.2	85	115			
Zinc	0.47	0.010	0.5000	0	93.8	85	115			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505218

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID MB-19113	SampType: MBLK		TestCode: EPA 200.8: Metals							
Client ID: PBW	Batch ID: 19113		RunNo: 26070							
Prep Date: 5/7/2015	Analysis Date: 5/8/2015		SeqNo: 773047		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.0010								
Selenium	ND	0.0010								

Sample ID LCS	SampType: LCS		TestCode: EPA 200.8: Metals							
Client ID: LCSW	Batch ID: R26294		RunNo: 26294							
Prep Date:	Analysis Date: 5/19/2015		SeqNo: 781112		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Arsenic	0.024	0.0010	0.02500	0	94.9	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID LCS	SampType: LCS		TestCode: EPA 200.8: Metals							
Client ID: LCSW	Batch ID: R26294		RunNo: 26294							
Prep Date:	Analysis Date: 5/19/2015		SeqNo: 781113		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID MB	SampType: MBLK		TestCode: EPA 200.8: Metals							
Client ID: PBW	Batch ID: R26294		RunNo: 26294							
Prep Date:	Analysis Date: 5/19/2015		SeqNo: 781115		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID MB	SampType: MBLK		TestCode: EPA 200.8: Metals							
Client ID: PBW	Batch ID: R26294		RunNo: 26294							
Prep Date:	Analysis Date: 5/19/2015		SeqNo: 781116		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505218

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType:	MBLK	TestCode:	EPA 200.8: Metals					
Client ID:	PBW	Batch ID:	R26294	RunNo:	26294					
Prep Date:		Analysis Date:	5/19/2015	SeqNo:	781116	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505218

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID LCS	SampType: LCS				TestCode: EPA 200.8: Dissolved Metals					
Client ID: LCSW	Batch ID: R26294				RunNo: 26294					
Prep Date:	Analysis Date: 5/19/2015				SeqNo: 781144		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	97.5	85	115			
Arsenic	0.024	0.0010	0.02500	0	94.9	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.023	0.0010	0.02500	0	92.7	85	115			

Sample ID LCS	SampType: LCS				TestCode: EPA 200.8: Dissolved Metals					
Client ID: LCSW	Batch ID: R26294				RunNo: 26294					
Prep Date:	Analysis Date: 5/19/2015				SeqNo: 781145		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.024	0.0010	0.02500	0	95.1	85	115			
Arsenic	0.023	0.0010	0.02500	0	93.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			
Selenium	0.023	0.0010	0.02500	0	92.3	85	115			

Sample ID MB	SampType: MBLK				TestCode: EPA 200.8: Dissolved Metals					
Client ID: PBW	Batch ID: R26294				RunNo: 26294					
Prep Date:	Analysis Date: 5/19/2015				SeqNo: 781146		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID MB	SampType: MBLK				TestCode: EPA 200.8: Dissolved Metals					
Client ID: PBW	Batch ID: R26294				RunNo: 26294					
Prep Date:	Analysis Date: 5/19/2015				SeqNo: 781147		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505218

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19207	SampType:	MBLK	TestCode:	EPA Method 245.1: Mercury					
Client ID:	PBW	Batch ID:	19207	RunNo:	26178					
Prep Date:	5/13/2015	Analysis Date:	5/14/2015	SeqNo:	776900	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-19207	SampType:	LCS	TestCode:	EPA Method 245.1: Mercury					
Client ID:	LCSW	Batch ID:	19207	RunNo:	26178					
Prep Date:	5/13/2015	Analysis Date:	5/14/2015	SeqNo:	776901	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	101	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505218

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R26034	RunNo:	26034					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	771822	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Sulfate	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R26034	RunNo:	26034					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	771823	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.48	0.10	0.5000	0	95.8	90	110			
Sulfate	10	0.50	10.00	0	100	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R26054	RunNo:	26054					
Prep Date:		Analysis Date:	5/7/2015	SeqNo:	772545	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R26054	RunNo:	26054					
Prep Date:		Analysis Date:	5/7/2015	SeqNo:	772546	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	94.8	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505218

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19094	SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW	Batch ID: 19094			RunNo: 26059					
Prep Date:	5/6/2015	Analysis Date: 5/8/2015			SeqNo: 772816		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.1		1.000		110	76.5	150			

Sample ID	LCS-19094		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 19094		RunNo: 26059					
Prep Date:	5/6/2015		Analysis Date: 5/8/2015		SeqNo: 772817		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.5	1.0	5.000	0	109	60.1	156			
Surr: DNOP	0.63		0.5000		125	76.5	150			

Sample ID	1505218-001CMS	SampType: MS			TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	SWMU 10-5-GW	Batch ID: 19094			RunNo: 26059					
Prep Date:	5/6/2015	Analysis Date: 5/8/2015			SeqNo: 772956		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	7.9	1.0	5.000	3.064	95.8	75.9	164			
Surr: DNOP	0.63		0.5000		127	76.5	150			

Sample ID	1505218-001CMSD		SampType: MSD		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	SWMU 10-5-GW		Batch ID: 19094		RunNo: 26059					
Prep Date:	5/6/2015		Analysis Date: 5/8/2015		SeqNo: 772957		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	8.8	1.0	5.000	3.064	114	75.9	164	10.9	22.1	
Surr: DNOP	0.66		0.5000		132	76.5	150	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505218

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R26016	RunNo:	26016					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	775972	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		88.5	80	120			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R26016	RunNo:	26016					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	775973	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.9	80	120			
Surr: BFB	21		20.00		104	80	120			

Sample ID	1505218-001BMS	SampType:	MS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	SWMU 10-5-GW	Batch ID:	R26016	RunNo:	26016					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	775975	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.63	0.050	0.5000	0.2116	83.3	51	131			
Surr: BFB	34		20.00		168	80	120			S

Sample ID	1505218-001BMSD	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	SWMU 10-5-GW	Batch ID:	R26016	RunNo:	26016					
Prep Date:		Analysis Date:	5/6/2015	SeqNo:	775976	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.63	0.050	0.5000	0.2116	83.2	51	131	0.0319	20	
Surr: BFB	34		20.00		172	80	120	0	0	S

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505218

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5ml rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R26144			RunNo: 26144					
Prep Date:		Analysis Date: 5/12/2015			SeqNo: 775654	Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	0.32	3.0								J
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505218

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5ml rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R26144	RunNo:	26144					
Prep Date:		Analysis Date:	5/12/2015	SeqNo:	775654	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	9.6		10.00		96.5	70	130			

Sample ID	100nglcs,200ngT2lc	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	R26144	RunNo:	26144					
Prep Date:		Analysis Date:	5/12/2015	SeqNo:	775656	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	111	70	130			
Toluene	22	1.0	20.00	0	108	70	130			
Chlorobenzene	20	1.0	20.00	0	98.8	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505218

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	100nglcs,200ngT2lc			SampType:	LCS		TestCode:	EPA Method 8260B: VOLATILES			
Client ID:	LCSW		Batch ID:	R26144		RunNo:	26144				
Prep Date:			Analysis Date:	5/12/2015		SeqNo:	775656		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,1-Dichloroethene	24	1.0	20.00	0	120	75.6	144				
Trichloroethene (TCE)	22	1.0	20.00	0	112	70	130				
Surr: 1,2-Dichloroethane-d4	11		10.00		111	70	130				
Surr: 4-Bromofluorobenzene	9.5		10.00		95.2	70	130				
Surr: Dibromofluoromethane	10		10.00		101	70	130				
Surr: Toluene-d8	11		10.00		106	70	130				

Sample ID	b6	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R26144			RunNo: 26144					
Prep Date:		Analysis Date: 5/12/2015			SeqNo: 775719		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	0.40	10								J
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	0.21	2.0								J
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505218

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID b6	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID: PBW	Batch ID: R26144			RunNo: 26144						
Prep Date:	Analysis Date: 5/12/2015			SeqNo: 775719		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		97.8	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505218

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID b6	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES							
Client ID: PBW	Batch ID: R26144			RunNo: 26144							
Prep Date:	Analysis Date: 5/12/2015			SeqNo: 775719		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: 4-Bromofluorobenzene	9.9		10.00		99.3	70	130				
Surr: Dibromofluoromethane	10		10.00		99.7	70	130				
Surr: Toluene-d8	10		10.00		102	70	130				

Sample ID 100ng lcs2	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES							
Client ID: LCSW	Batch ID: R26144			RunNo: 26144							
Prep Date:	Analysis Date: 5/13/2015			SeqNo: 775720		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	21	1.0	20.00	0	107	70	130				
Toluene	21	1.0	20.00	0	107	70	130				
Chlorobenzene	21	1.0	20.00	0	105	70	130				
1,1-Dichloroethene	23	1.0	20.00	0	116	75.6	144				
Trichloroethene (TCE)	20	1.0	20.00	0	99.2	70	130				
Surr: 1,2-Dichloroethane-d4	10		10.00		99.6	70	130				
Surr: 4-Bromofluorobenzene	9.9		10.00		99.3	70	130				
Surr: Dibromofluoromethane	9.7		10.00		96.6	70	130				
Surr: Toluene-d8	9.9		10.00		99.3	70	130				

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505218

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19150		SampType: MBLK			TestCode: EPA Method 8270C: Semivolatiles				
Client ID:	PBW		Batch ID: 19150			RunNo: 26173				
Prep Date:	5/11/2015		Analysis Date: 5/13/2015			SeqNo: 776620		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505218

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19150		SampType: MBLK			TestCode: EPA Method 8270C: Semivolatiles				
Client ID:	PBW		Batch ID: 19150			RunNo: 26173				
Prep Date:	5/11/2015		Analysis Date: 5/13/2015			SeqNo: 776620		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	130		200.0		67.3	14.9	111			
Surr: Phenol-d5	150		200.0		73.2	11.3	108			
Surr: 2,4,6-Tribromophenol	150		200.0		74.7	15.7	154			
Surr: Nitrobenzene-d5	77		100.0		77.0	47.8	106			
Surr: 2-Fluorobiphenyl	81		100.0		80.8	21.3	123			
Surr: 4-Terphenyl-d14	54		100.0		54.3	14.3	135			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505218

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-19150		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSW		Batch ID: 19150		RunNo: 26173					
Prep Date:	5/11/2015		Analysis Date: 5/13/2015		SeqNo: 776621		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	74	10	100.0	0	74.2	47.8	99.7			
4-Chloro-3-methylphenol	160	10	200.0	0	80.3	58.1	103			
2-Chlorophenol	150	10	200.0	0	72.9	49.5	96.8			
1,4-Dichlorobenzene	72	10	100.0	0	71.6	40.4	89.4			
2,4-Dinitrotoluene	58	10	100.0	0	58.3	38.6	91.3			
N-Nitrosodi-n-propylamine	78	10	100.0	0	77.9	53.9	95.6			
4-Nitrophenol	140	10	200.0	0	68.0	26.4	108			
Pentachlorophenol	130	20	200.0	0	64.7	36.5	86.6			
Phenol	150	10	200.0	0	75.0	29.3	108			
Pyrene	65	10	100.0	0	65.2	45.7	100			
1,2,4-Trichlorobenzene	89	10	100.0	0	88.8	39.3	94.5			
Surr: 2-Fluorophenol	160		200.0		78.0	14.9	111			
Surr: Phenol-d5	170		200.0		84.5	11.3	108			
Surr: 2,4,6-Tribromophenol	170		200.0		83.8	15.7	154			
Surr: Nitrobenzene-d5	87		100.0		86.8	47.8	106			
Surr: 2-Fluorobiphenyl	84		100.0		84.2	21.3	123			
Surr: 4-Terphenyl-d14	57		100.0		57.2	14.3	135			

Sample ID	1505218-001Dms	SampType: MS			TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	SWMU 10-5-GW	Batch ID: 19150			RunNo: 26173					
Prep Date:	5/11/2015	Analysis Date: 5/13/2015			SeqNo: 776623		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	100	10	100.0	0	99.6	46.4	121			
4-Chloro-3-methylphenol	100	10	200.0	0	52.1	45.3	135			
2-Chlorophenol	28	10	200.0	0	13.8	28.7	129			S
1,4-Dichlorobenzene	91	10	100.0	0	91.4	42.6	104			
2,4-Dinitrotoluene	80	10	100.0	3.540	76.9	28.9	126			
N-Nitrosodi-n-propylamine	98	10	100.0	0	97.7	49.2	117			
4-Nitrophenol	ND	10	200.0	0	0	18.1	97.2			S
Pentachlorophenol	11	20	200.0	7.960	1.72	24.8	127			JS
Phenol	37	10	200.0	0	18.3	17.9	93.6			
Pyrene	73	10	100.0	0	73.5	29.6	142			
1,2,4-Trichlorobenzene	100	10	100.0	0	101	39.5	109			
Surr: 2-Fluorophenol	15		200.0		7.30	14.9	111			S
Surr: Phenol-d5	41		200.0		20.4	11.3	108			
Surr: 2,4,6-Tribromophenol	15		200.0		7.62	15.7	154			S
Surr: Nitrobenzene-d5	100		100.0		100	47.8	106			
Surr: 2-Fluorobiphenyl	100		100.0		104	21.3	123			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505218

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	1505218-001Dms	SampType:	MS	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	SWMU 10-5-GW	Batch ID:	19150	RunNo:	26173					
Prep Date:	5/11/2015	Analysis Date:	5/13/2015	SeqNo:	776623	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	73		100.0		72.8	14.3	135			

Sample ID	1505218-001Dmsd	SampType:	MSD	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	SWMU 10-5-GW	Batch ID:	19150	RunNo:	26173					
Prep Date:	5/11/2015	Analysis Date:	5/13/2015	SeqNo:	776624	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	96	10	100.0	0	96.2	46.4	121	3.55	31.3	
4-Chloro-3-methylphenol	160	10	200.0	0	77.6	45.3	135	39.4	29	R
2-Chlorophenol	80	10	200.0	0	40.1	28.7	129	97.8	28.4	R
1,4-Dichlorobenzene	100	10	100.0	0	100	42.6	104	8.98	28.2	
2,4-Dinitrotoluene	77	10	100.0	3.540	73.4	28.9	126	4.40	22.9	
N-Nitrosodi-n-propylamine	110	10	100.0	0	107	49.2	117	8.65	28.8	
4-Nitrophenol	ND	10	200.0	0	0	18.1	97.2	0	41.5	S
Pentachlorophenol	12	20	200.0	7.960	2.08	24.8	127	6.12	45.1	JS
Phenol	98	10	200.0	0	48.9	17.9	93.6	91.0	33.9	R
Pyrene	74	10	100.0	0	74.1	29.6	142	0.813	33.6	
1,2,4-Trichlorobenzene	99	10	100.0	0	99.2	39.5	109	2.03	28.2	
Surr: 2-Fluorophenol	40		200.0		20.0	14.9	111	0	0	
Surr: Phenol-d5	100		200.0		51.4	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	33		200.0		16.7	15.7	154	0	0	
Surr: Nitrobenzene-d5	95		100.0		94.8	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	98		100.0		98.1	21.3	123	0	0	
Surr: 4-Terphenyl-d14	73		100.0		72.9	14.3	135	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1505218

RcptNo: 1

Received by/date: AG 05/05/15

Logged By: Ashley Gallegos 5/5/2015 2:55:00 PM

Completed By: Ashley Gallegos 5/6/2015 9:05:02 AM

Reviewed By: JA 05/06/15

Chain of Custody

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

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° 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 ☒
10. VOA vials have zero headspace? Yes ☒ No ☒ NA ☐
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 ☐

CS 05/06/15 Sample - 002B
 No VOA Vials (2 of 2) has a bubble.
 # of preserved bottles checked for pH: 2/1
 Adjusted? no
 Checked by: CS

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: For 300 analysis, poured off from a 1L Amber unpreserved into a 125 ml bottle. CS 05/06/15

18. Cooler Information

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

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

**METALS AND CYANIDE ANALYSES FOR GROUNDWATER SAMPLES TOTAL
METALS ANALYSIS AND DISSOLVED METALS ANALYSIS**

Analyte	Analytical Method
Antimony	SW-846 method 6010/6020
Arsenic	SW-846 method 6010/6020
Barium	SW-846 method 6010/6020
Beryllium	SW-846 method 6010/6020
Cadmium	SW-846 method 6010/6020
Chromium	SW-846 method 6010/6020
Chromium VI	SW-846 Method 3060A
Cobalt	SW-846 method 6010/6020
Cyanide	SW-846 method 335.4/335.2 mod
Lead	SW-846 method 6010/6020
Mercury	SW-846 method 7470/7471
Nickel	SW-846 method 6010/6020
Selenium	SW-846 method 6010/6020
Silver	SW-846 method 6010/6020
Vanadium	SW-846 method 6010/6020
Zinc	SW-846 method 6010/6020
Iron	SW-846 method 6010/6020
Manganese	SW-846 method 6010/6020

WESTERN REFINING SOUTHWEST, INC.

GALLUP REFINERY - SWMU 10

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

Analyte	Analytical Method
Chloride	EPA method 300.0
Fluoride	EPA method 300.0
Sulfate	EPA method 300.0