

AP-111

Investigation Report
(SWMU-10 Sludge
Pits)
(2 of 3)



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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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:

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Reported: 05/13/15 16:23 Printed: 05/13/15 16:23
L762970-02 (PH) - 8.4 at 21.0C



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Fax (615) 758-5859

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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 : 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:

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L762970-03 (PH) - 8.4 at 20.7C



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Mt. Juliet, TN 37122
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1-800-767-5859
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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 : 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:

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Reported: 05/13/15 16:23 Printed: 05/13/15 16:23

L762970-04 (PH) - 9.4 at 20.4C



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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 : 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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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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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	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
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

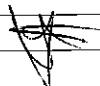
B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

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

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

Log In

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

- 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".

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.

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.

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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

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	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#: 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:

[Signature]

02/30/15

Logged By: Lindsay Mangin

4/30/2015 3:50:00 PM

[Signature]

Completed By: Lindsay Mangin

5/1/2015 6:42:31 AM

[Signature]

Reviewed By:

[Signature]

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° 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*
(*<2* or *>2* unless noted)
Adjusted? *NO*
Checked by: *[Signature]*

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 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".

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.

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		



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

Tax I.D. 62-0814289

Est. 1970

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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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 : 1505047-001I SWMU 10 EB04
Collected By :
Collection Date : 05/01/15 11:00

ESC Sample # : L762964-02

Site ID :

Project # :

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 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: 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	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
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° 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'.

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.

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		



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 : 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		Limit	Batch	Date Analyzed
		Units	% Rec			
Cyanide	< .005	mg/l			WG787731	05/11/15 16:24

Analyte	Units	Duplicate			Limit	Ref Samp	Batch
		Result	Duplicate	RPD			
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			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Cyanide	mg/l	0.0988	0.0990	99.0	90-110	0.202	20	WG787731

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
Cyanide	mg/l	0.205	0.0	.2	100.	90-110	L762964-01	WG787731

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
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.	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#: 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	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
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: **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:

[Signature]

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, 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 °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		

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 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		

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

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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 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
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	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.

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

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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 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

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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		

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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

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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		

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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.

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.**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

Refer to the QC Summary report and 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 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

Refer to the QC Summary report and 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 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

Refer to the QC Summary report and 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 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

Refer to the QC Summary report and 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 (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.**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

ESC Sample # : L762972-02

Date Received : May 05, 2015
Description :

Site ID :

Sample ID : 1505057-002C SWMU 10-09 4-6 FT

Project # :

Collected By :
Collection Date : 04/30/15 14:00

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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Reported: 05/13/15 11:23 Printed: 05/13/15 11:24
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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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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L762972-05 (PH) - 8.3 at 21.2c



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REPORT OF ANALYSIS

May 13, 2015

Hall Environmental Analysis Laborat
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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



YOUR LAB OF CHOICE

Hall Environmental Analysis Laboratory

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Albuquerque, NM 87109

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.'



YOUR LAB OF CHOICE

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762972

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

B Analyte detected in the 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-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	lcs-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	lcs-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-Terophenyl-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	lcs-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	
Mercurv	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

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 $^{\circ}\text{C}$	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.: 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', 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#: 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

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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 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.

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	
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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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 : 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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1-800-767-5859
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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 : 1505058-002C 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.
Mt. Juliet, TN 37122
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1-800-767-5859
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.	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#: 1505058

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	lcs-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.	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#: 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'.

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

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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 (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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	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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
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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
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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	
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

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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 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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	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample 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

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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.

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
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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.

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.

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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		



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 : 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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1-800-767-5859
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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 : 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:

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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

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
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 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 Sample Known Val 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 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
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.'



YOUR LAB OF CHOICE

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L762978

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	Units	MS Res	Matrix Spike			Limit	Ref Samp	Batch
			Ref Res	TV	% Rec			
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	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								
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	lcs-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

Completed By: **Lindsay Mangin**

5/2/2015 10:11:48 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.: 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'.

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.

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	
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	.002	0.00208	104.	90-110 WG788013
Cyanide	mg/l	.1	0.101	101.	90-110 WG788140

Analyte	Units	Result	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	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	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.	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#: 1505218

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	lcs-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 $>0^{\circ}\text{C}$ 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 ☒
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 $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

www.hallenvironmental.com

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

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

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 Diss)	GEN CHEM	GR 6	Air Bubbles (Y or N)

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

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 12, 2015

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

RE: SWMU 10

OrderNo.: 1505222

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'.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505222

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB05

Project: SWMU 10

Collection Date: 5/4/2015 5:00:00 PM

Lab ID: 1505222-001

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)	ND	0.91	1.0		mg/L	1	5/8/2015 2:30:55 PM	19094
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/8/2015 2:30:55 PM	19094
Surr: DNOP	119	0	76.5-150		%REC	1	5/8/2015 2:30:55 PM	19094
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB	
Gasoline Range Organics (GRO)	ND	0.012	0.050		mg/L	1	5/6/2015 10:32:54 PM	R26016
Surr: BFB	86.2	0	80-120		%REC	1	5/6/2015 10:32:54 PM	R26016
EPA METHOD 300.0: ANIONS							Analyst: LGT	
Fluoride	ND	0.029	0.10		mg/L	1	5/6/2015 3:35:51 PM	R26034
Chloride	ND	0.13	0.50		mg/L	1	5/6/2015 3:35:51 PM	R26034
Sulfate	ND	0.11	0.50		mg/L	1	5/6/2015 3:35:51 PM	R26034
EPA METHOD 200.7: DISSOLVED METALS							Analyst: JLF	
Barium	ND	0.00095	0.0020		mg/L	1	5/6/2015 6:45:39 PM	R26030
Beryllium	ND	0.00031	0.0020		mg/L	1	5/6/2015 6:45:39 PM	R26030
Cadmium	ND	0.00097	0.0020		mg/L	1	5/6/2015 6:45:39 PM	R26030
Chromium	ND	0.0018	0.0060		mg/L	1	5/6/2015 6:45:39 PM	R26030
Cobalt	ND	0.0013	0.0060		mg/L	1	5/6/2015 6:45:39 PM	R26030
Iron	0.011	0.0073	0.020	J	mg/L	1	5/6/2015 6:45:39 PM	R26030
Manganese	0.00063	0.00027	0.0020	J	mg/L	1	5/6/2015 6:45:39 PM	R26030
Nickel	ND	0.0021	0.010		mg/L	1	5/6/2015 6:45:39 PM	R26030
Silver	ND	0.0012	0.0050		mg/L	1	5/6/2015 6:45:39 PM	R26030
Vanadium	ND	0.0015	0.050		mg/L	1	5/6/2015 6:45:39 PM	R26030
Zinc	0.031	0.0028	0.010		mg/L	1	5/6/2015 6:45:39 PM	R26030
EPA METHOD 200.7: METALS							Analyst: JLF	
Barium	ND	0.00095	0.0020		mg/L	1	5/7/2015 3:12:04 PM	R26052
Beryllium	ND	0.00031	0.0020		mg/L	1	5/7/2015 3:12:04 PM	R26052
Cadmium	ND	0.00097	0.0020		mg/L	1	5/7/2015 3:12:04 PM	R26052
Chromium	ND	0.0022	0.0060		mg/L	1	5/7/2015 3:12:04 PM	R26052
Cobalt	ND	0.0013	0.0060		mg/L	1	5/7/2015 3:12:04 PM	R26052
Iron	ND	0.0073	0.020		mg/L	1	5/7/2015 3:12:04 PM	R26052
Manganese	ND	0.0015	0.0020		mg/L	1	5/7/2015 3:12:04 PM	R26052
Nickel	ND	0.0023	0.010		mg/L	1	5/7/2015 3:12:04 PM	R26052
Silver	ND	0.0021	0.0050		mg/L	1	5/11/2015 5:54:55 PM	R26109
Vanadium	ND	0.0015	0.050		mg/L	1	5/7/2015 3:12:04 PM	R26052
Zinc	ND	0.0036	0.010		mg/L	1	5/7/2015 3:12:04 PM	R26052
EPA 200.8: DISSOLVED METALS							Analyst: DBD	
Antimony	0.00027	0.00014	0.0010	J	mg/L	1	5/19/2015 2:07:12 PM	R26294
Arsenic	ND	0.000065	0.0010		mg/L	1	5/19/2015 2:07:12 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 1505222

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB05

Project: SWMU 10

Collection Date: 5/4/2015 5:00:00 PM

Lab ID: 1505222-001

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	0.000031	0.000026	0.0010	J	mg/L	1	5/19/2015 2:07:12 PM	R26294
Selenium	ND	0.00019	0.0010		mg/L	1	5/19/2015 2:07:12 PM	R26294
EPA 200.8: METALS							Analyst: DBD	
Antimony	ND	0.00043	0.0010		mg/L	1	5/19/2015 1:22:44 PM	R26294
Arsenic	ND	0.00029	0.0010		mg/L	1	5/19/2015 1:22:44 PM	R26294
Lead	ND	0.000047	0.00050		mg/L	1	5/19/2015 1:22:44 PM	R26294
Selenium	ND	0.00019	0.0010		mg/L	1	5/19/2015 1:22:44 PM	R26294
EPA METHOD 245.1: MERCURY							Analyst: MED	
Mercury	ND	0.000059	0.00020		mg/L	1	5/14/2015 10:18:41 AM	19207
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	1.9	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Acenaphthylene	ND	1.9	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Aniline	ND	1.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Anthracene	ND	1.6	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Azobenzene	ND	2.0	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Benzoic acid	ND	1.0	20		µg/L	1	5/13/2015 12:43:26 PM	19150
Benzyl alcohol	ND	1.2	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/13/2015 12:43:26 PM	19150
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Carbazole	ND	1.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/13/2015 12:43:26 PM	19150
4-Chloroaniline	ND	1.9	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2-Chlorophenol	ND	1.2	10		µg/L	1	5/13/2015 12:43:26 PM	19150
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Chrysene	ND	2.2	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/13/2015 12:43:26 PM	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 1505222

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB05

Project: SWMU 10

Collection Date: 5/4/2015 5:00:00 PM

Lab ID: 1505222-001

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 12:43:26 PM	19150
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/13/2015 12:43:26 PM	19150
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/13/2015 12:43:26 PM	19150
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/13/2015 12:43:26 PM	19150
3,3'-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Diethyl phthalate	ND	1.7	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/13/2015 12:43:26 PM	19150
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/13/2015 12:43:26 PM	19150
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/13/2015 12:43:26 PM	19150
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/13/2015 12:43:26 PM	19150
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Fluoranthene	ND	1.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Fluorene	ND	1.7	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Hexachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Hexachloroethane	ND	1.6	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Isophorone	ND	2.0	10		µg/L	1	5/13/2015 12:43:26 PM	19150
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2-Methylphenol	ND	1.2	10		µg/L	1	5/13/2015 12:43:26 PM	19150
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/13/2015 12:43:26 PM	19150
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/13/2015 12:43:26 PM	19150
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Naphthalene	ND	1.8	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2-Nitroaniline	ND	1.8	10		µg/L	1	5/13/2015 12:43:26 PM	19150
3-Nitroaniline	ND	1.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
4-Nitroaniline	ND	1.2	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Nitrobenzene	ND	1.5	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2-Nitrophenol	ND	1.2	10		µg/L	1	5/13/2015 12:43:26 PM	19150
4-Nitrophenol	ND	1.4	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Pentachlorophenol	ND	1.1	20		µg/L	1	5/13/2015 12:43:26 PM	19150
Phenanthrene	ND	2.0	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Phenol	ND	1.1	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Pyrene	ND	2.3	10		µg/L	1	5/13/2015 12:43:26 PM	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 1505222

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB05

Project: SWMU 10

Collection Date: 5/4/2015 5:00:00 PM

Lab ID: 1505222-001

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 12:43:26 PM	19150
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/13/2015 12:43:26 PM	19150
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/13/2015 12:43:26 PM	19150
Surr: 2-Fluorophenol	85.1	0	14.9-111		%REC	1	5/13/2015 12:43:26 PM	19150
Surr: Phenol-d5	76.0	0	11.3-108		%REC	1	5/13/2015 12:43:26 PM	19150
Surr: 2,4,6-Tribromophenol	100	0	15.7-154		%REC	1	5/13/2015 12:43:26 PM	19150
Surr: Nitrobenzene-d5	99.3	0	47.8-106		%REC	1	5/13/2015 12:43:26 PM	19150
Surr: 2-Fluorobiphenyl	102	0	21.3-123		%REC	1	5/13/2015 12:43:26 PM	19150
Surr: 4-Terphenyl-d14	75.6	0	14.3-135		%REC	1	5/13/2015 12:43:26 PM	19150
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Benzene	ND	0.065	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Toluene	0.34	0.11	1.0	J	µg/L	1	5/12/2015 6:09:52 PM	R26144
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Naphthalene	ND	0.22	2.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Acetone	ND	0.94	10		µg/L	1	5/12/2015 6:09:52 PM	R26144
Bromobenzene	ND	0.11	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Bromoform	ND	0.16	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Bromomethane	ND	1.2	3.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
2-Butanone	ND	0.36	10		µg/L	1	5/12/2015 6:09:52 PM	R26144
Carbon disulfide	ND	0.67	10		µg/L	1	5/12/2015 6:09:52 PM	R26144
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Chloroethane	ND	0.10	2.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Chloroform	ND	0.21	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Chloromethane	ND	0.17	3.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/12/2015 6:09:52 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 1505222

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB05

Project: SWMU 10

Collection Date: 5/4/2015 5:00:00 PM

Lab ID: 1505222-001

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 6:09:52 PM	R26144
Dibromomethane	ND	0.23	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
2-Hexanone	ND	0.48	10		µg/L	1	5/12/2015 6:09:52 PM	R26144
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/12/2015 6:09:52 PM	R26144
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Styrene	ND	0.11	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/12/2015 6:09:52 PM	R26144
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/12/2015 6:09:52 PM	R26144
Surr: 1,2-Dichloroethane-d4	95.6	0	70-130		%REC	1	5/12/2015 6:09:52 PM	R26144
Surr: 4-Bromofluorobenzene	100	0	70-130		%REC	1	5/12/2015 6:09:52 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 **1505222**

Date Reported: **10/12/2015**

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB05

Project: SWMU 10

Collection Date: 5/4/2015 5:00:00 PM

Lab ID: 1505222-001

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	99.1	0	70-130		%REC	1	5/12/2015 6:09:52 PM	R26144
Surr: Toluene-d8	104	0	70-130		%REC	1	5/12/2015 6:09:52 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 1505222

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: TRIP BLANK

Project: SWMU 10

Collection Date:

Lab ID: 1505222-002

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 11:02:06 PM	R26016
Surr: BFB	92.9	0	80-120		%REC	1	5/6/2015 11:02:06 PM	R26016
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Benzene	ND	0.065	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Toluene	ND	0.11	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Naphthalene	ND	0.22	2.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Acetone	ND	0.94	10		µg/L	1	5/12/2015 6:37:27 PM	R26144
Bromobenzene	ND	0.11	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Bromoform	ND	0.16	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Bromomethane	ND	1.2	3.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
2-Butanone	ND	0.36	10		µg/L	1	5/12/2015 6:37:27 PM	R26144
Carbon disulfide	ND	0.67	10		µg/L	1	5/12/2015 6:37:27 PM	R26144
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Chloroethane	ND	0.10	2.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Chloroform	ND	0.21	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Chloromethane	ND	0.17	3.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Dibromomethane	ND	0.23	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/12/2015 6:37:27 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 1505222

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: TRIP BLANK

Project: SWMU 10

Collection Date:

Lab ID: 1505222-002

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 6:37:27 PM	R26144
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
2-Hexanone	ND	0.48	10		µg/L	1	5/12/2015 6:37:27 PM	R26144
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/12/2015 6:37:27 PM	R26144
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Styrene	ND	0.11	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/12/2015 6:37:27 PM	R26144
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/12/2015 6:37:27 PM	R26144
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%REC	1	5/12/2015 6:37:27 PM	R26144
Surr: 4-Bromofluorobenzene	102	0	70-130		%REC	1	5/12/2015 6:37:27 PM	R26144
Surr: Dibromofluoromethane	99.4	0	70-130		%REC	1	5/12/2015 6:37:27 PM	R26144
Surr: Toluene-d8	104	0	70-130		%REC	1	5/12/2015 6:37:27 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 : 1505222-001H SWMU 10 EB05
Collected By :
Collection Date : 05/04/15 17:00

ESC Sample # : L763564-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	0.014	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.

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Reported: 05/12/15 15:12 Printed: 05/12/15 15:13



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 : 1505222-001I SWMU 10 EB05
Collected By :
Collection Date : 05/04/15 17:00

ESC Sample # : L763564-02

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

L763564

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	.002	0.00208	104.	90-110	WG788013
Cyanide	mg/l	.1	0.101	101.	90-110	WG788140

Analyte	Units	Result	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	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	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: L763564-02
WG788140: R3036440: L763564-01

* * 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#: 1505222

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	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								

Qualifiers:

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

B Analyte detected in the 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#: 1505222

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:	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
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			

Sample ID	1505222-001GMS		SampType:	MS		TestCode:	EPA Method 200.7: Metals			
Client ID:	SWMU 10 EB05		Batch ID:	R26052		RunNo:	26052			
Prep Date:			Analysis Date:	5/7/2015		SeqNo:	772437	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	70	130			
Beryllium	0.51	0.0020	0.5000	0	103	70	130			
Cadmium	0.53	0.0020	0.5000	0	107	70	130			
Chromium	0.50	0.0060	0.5000	0	100	70	130			
Cobalt	0.51	0.0060	0.5000	0	101	70	130			
Iron	0.53	0.020	0.5000	0	105	70	130			
Manganese	0.50	0.0020	0.5000	0	99.1	70	130			
Nickel	0.49	0.010	0.5000	0	98.6	70	130			
Vanadium	0.50	0.050	0.5000	0	99.8	70	130			
Zinc	0.50	0.010	0.5000	0	99.9	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#: 1505222

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	1505222-001GMSD			SampType:	MSD		TestCode:	EPA Method 200.7: Metals			
Client ID:	SWMU 10 EB05		Batch ID:		R26052		RunNo:	26052			
Prep Date:	Analysis Date:			5/7/2015		SeqNo:	772441		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	98.6	70	130	1.22	20		
Beryllium	0.52	0.0020	0.5000	0	103	70	130	0.311	20		
Cadmium	0.54	0.0020	0.5000	0	107	70	130	0.471	20		
Chromium	0.51	0.0060	0.5000	0	101	70	130	0.848	20		
Cobalt	0.51	0.0060	0.5000	0	101	70	130	0.0811	20		
Iron	0.52	0.020	0.5000	0	104	70	130	1.35	20		
Manganese	0.50	0.0020	0.5000	0	101	70	130	1.40	20		
Nickel	0.50	0.010	0.5000	0	99.6	70	130	0.993	20		
Vanadium	0.50	0.050	0.5000	0	101	70	130	0.777	20		
Zinc	0.50	0.010	0.5000	0	100	70	130	0.549	20		

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 200.7: Metals					
Client ID:	PBW	Batch ID: R26109			RunNo: 26109					
Prep Date:		Analysis Date: 5/11/2015			SeqNo: 774477		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: Metals		
Client ID:	LCSW			Batch ID:	R26109			RunNo:	26109		
Prep Date:				Analysis Date:	5/11/2015			SeqNo:	774478		
								Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Silver	0.10	0.0050	0.1000	0	103	85	115				

Sample ID	1505222-001GMS			SampType:	MS		TestCode:	EPA Method 200.7: Metals			
Client ID:	SWMU 10 EB05			Batch ID:	R26109		RunNo:	26109			
Prep Date:				Analysis Date:	5/11/2015		SeqNo:	774890		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Silver	0.10	0.0050	0.1000	0	101	70	130				

Sample ID	1505222-001GMSD			SampType:	MSD		TestCode:	EPA Method 200.7: Metals			
Client ID:	SWMU 10 EB05			Batch ID:	R26109		RunNo:	26109			
Prep Date:				Analysis Date:	5/11/2015		SeqNo:	774891		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Silver	0.10	0.0050	0.1000	0	103	70	130	1.98	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#: 1505222

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			

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								

Qualifiers:

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

B Analyte detected in the 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#: 1505222

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:	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
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:	R26109		RunNo:	26109			
Prep Date:			Analysis Date:	5/11/2015		SeqNo:	774479	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:	R26109		RunNo:	26109			
Prep Date:			Analysis Date:	5/11/2015		SeqNo:	774480	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Silver	0.10	0.0050	0.1000	0	105	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#: 1505222

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

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
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#: 1505222

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#: 1505222

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#: 1505222

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								
Chloride	ND	0.50								
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			
Chloride	5.0	0.50	5.000	0	99.7	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#: 1505222

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				

Qualifiers:

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

B Analyte detected in the 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#: 1505222

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			

Qualifiers:

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

B Analyte detected in the 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#: 1505222

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#: 1505222

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#: 1505222

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#: 1505222

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#: 1505222

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#: 1505222

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#: 1505222

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.	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#: 1505222

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	lcs-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			

Qualifiers:

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

B Analyte detected in the 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: 1505222

RcptNo: 1

Received by/date:

Ag 05/05/15

Logged By:

Ashley Gallegos

5/5/2015 2:55:00 PM

Ag

Completed By:

Ashley Gallegos

5/6/2015 9:35:38 AM

Ag

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 ☒

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, 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 into a 125ml bottle from the 1L Amber (unpreserved).

18. Cooler Information

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

-CS 05/06/15

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

GENERAL CHEMISTRY PARAMETERS FOR GROUNDWATER SAMPLES

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

COVER LETTER

Tuesday, August 4, 2015

Cheryl Johnson
Western Refining Company
Rt. 3 Box 7
Gallup, NM 87301

TEL: (505) 722-0231

RE: SWMU 10

Order No: 1505223

Dear Cheryl Johnson:

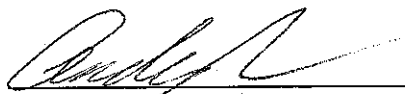
Hall Environmental Analysis Laboratory received 6 sample(s) on 5/5/2015 for the analyses presented in the following report.

This report is an amended report that has updated results for hexavalent chromium.

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,



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#: 1505223
Date: 6/29/2015

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding Hexavalent Chromium:

The original results for hexavalent chromium for the samples below did not match with the total chromium results.

SWMU 10-2 (0-2')

SWMU 10-2 (2-4')

SWMU 10 DUP03

All three of the above samples were reanalyzed and reported in this report. The reanalysis shows that the samples are nondetect for hexavalent chromium. It is our opinion that the initial analysis of the three samples above was incorrect either due to matrix interferences or laboratory error. This opinion is confirmed by both the nondetect results of the reanalyzed samples and the initial total chromium results.



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ANALYTICAL SUMMARY REPORT

July 30, 2015

Hall Environmental
4901 Hawkins St NE Ste D
Albuquerque, NM 87109-4372

Work Order: B15070689
Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 3 samples for Hall Environmental on 7/8/2015 for analysis.

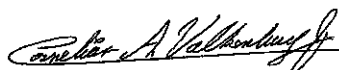
Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B15070689-001	1505223-003C, SWMU 10-2 (0-2 Feet)	05/04/15 15:50	07/08/15	Soil	Chromium, Hexavalent Water Extraction for Hex Chromium
B15070689-002	1505223-004C, SWMU 10-2 (2-4 Feet)	05/04/15 16:00	07/08/15	Soil	Same As Above
B15070689-003	1505223-005C, SWMU 10 DUP03	05/04/15 0:00	07/08/15	Soil	Same As Above

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: 2015.07.30 17:54:46 -06:00



CLIENT: Hall Environmental
Project: Not Indicated
Work Order: B15070689

Report Date: 07/30/15

CASE NARRATIVE

Requested Cyanide analysis cancelled per Andy Freeman (Hall Environmental Inc) on 7/28/2015.

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: 1505223-003C, SWMU 10-2 (0-2 Feet)

Project: Not Indicated

Matrix: Soil

Lab ID: B15070689-001

Collection Date: 05/04/15 15:50

Date Received: 07/08/15

Report Date: 07/30/15

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	07/09/15 15:30 / ma	07/09/15 13:27	Water Extr	SPEC_150709B - 4		91220

Report RL - Analyte reporting limit.

Definitions: 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: 1505223-004C, SWMU 10-2 (2-4 Feet)
Project: Not Indicated
Matrix: Soil

Lab ID: B15070689-002
Collection Date: 05/04/15 16:00
Date Received: 07/08/15
Report Date: 07/30/15

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	07/09/15 15:30 / ma	07/09/15 13:27	Water Extr	SPEC_150709B	8	91220

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: 1505223-005C, SWMU 10 DUP03

Project: Not Indicated

Matrix: Soil

Lab ID: B15070689-003

Collection Date: 05/04/15

Date Received: 07/08/15

Report Date: 07/30/15

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	07/09/15 15:30 / ma	07/09/15 13:27	Water Extr	SPEC_150709B	9	91220

Report Definitions: RL - Analyte reporting limit.

MCL - Maximum contaminant level.

ND - Not detected at the reporting limit.



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Client: Hall Environmental
Work Order: B15070689
Project: Not Indicated

ANALYTICAL QC SUMMARY REPORT
Prepared by Billings, MT Branch
BatchID: 91220

Date: 30-Jul-15

Run ID :Run Order: SPEC_150709B: 3		SampType: Method Blank		Lab ID: MB-91220		Method: SW7196A	
Analysis Date: 07/09/15 15:30		Units: mg/kg		Prep Info: Prep Date: 7/9/2015		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	0.1					
Associated samples: B15070689-001A, B15070689-002A, B15070689-003A							
Run ID :Run Order: SPEC_150709B: 5		SampType: Sample Matrix Spike		Lab ID: B15070689-001AMS		Method: SW7196A	
Analysis Date: 07/09/15 15:30		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	0.945	0.00010	1	0	94	70	130
Associated samples: B15070689-001A, B15070689-002A, B15070689-003A							
Run ID :Run Order: SPEC_150709B: 6		SampType: Sample Matrix Spike Duplicate		Lab ID: B15070689-001AMS		Method: SW7196A	
Analysis Date: 07/09/15 15:30		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	0.971	0.00010	1	0	97	70	130 0.9446 2.8 20
Associated samples: B15070689-001A, B15070689-002A, B15070689-003A							
Run ID :Run Order: SPEC_150709B: 7		SampType: Sample Duplicate		Lab ID: B15070689-001ADIUP		Method: SW7196A	
Analysis Date: 07/09/15 15:30		Units: mg/kg		Prep Info: Prep Date: 7/9/2015		Prep Method: Water Extraction	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val %RPD RPDLimit Qual
Chromium, Hexavalent - Soluble	0.0920	0.00010	0	0			0 30
Associated samples: B15070689-001A, B15070689-002A, B15070689-003A							
Run ID :Run Order: SPEC_150709B: 12		SampType: Laboratory Control Sample		Lab ID: LCS-31220		Method: SW7196A	
Analysis Date: 07/09/15 15:30		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	1.06	0.010	1	0	106	85	115
Associated samples: B15070689-001A, B15070689-002A, B15070689-003A							

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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Work Order Receipt Checklist

Hall Environmental

B15070689

Login completed by: Randa Nees

Date Received: 7/8/2015

Reviewed by: BL2000\iraschim

Received by: kl

Reviewed Date: 7/8/2015

Carrier name: Return-UPS NDA N/C

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:	3.2°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:

The samples were received past holding time for Hexavalet Chromium, continued with analysis per Chain of Custody instructions.

Cyanide requested on the Chain of Custody but is not needed per email from Andy Freeman on 07/28/15. Per Wynn Pippin, Project Manager, do not report Cyanide but charge for analysis.



CHAIN OF CUSTODY RECORD

PAGE: 1 OF 1

Hall 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 #:					
CITY, STATE, ZIP: Billings, MT 59107		EMAIL:					
ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	1505223-003C	SWMU 10-2 (0-2')	80ZGU	MeOH (S)	5/4/2015 3:50:00 PM	1	TOTAL CYANIDE, CR6 LEVEL 4. 615070689-001
2	1505223-004C	SWMU 10-2 (2-4')	80ZGU	MeOH (S)	5/4/2015 4:00:00 PM	1	TOTAL CYANIDE, CR6 LEVEL 4. 002
3	1505223-005C	SWMU 10 DUP03	80ZGU	MeOH (S)	5/4/2015	1	TOTAL CYANIDE, CR6 LEVEL 4. 003

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 or

Relinquished By:	Date: 7/7/2015	Time: 3:20 PM	Received By: KYLE LARSEN	Date: 8 JUL 2015	Time: 9:15am
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
TAT: Standard 4	RUSH	Next BD ☐	2nd BD ☐	3rd BD ☐	
REPORT TRANSMITTAL DESIRED: ☐ HARD COPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE			FOR LAB USE ONLY		
Temp of samples 3.2 °C			Attempts to Cool? BLUE ICE		
Comments: SHIP: UPS NDA RTN			SEAL: C		



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.: 1505223

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 6 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 19, 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".

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-6 (2-4')

Project: SWMU 10

Collection Date: 5/4/2015 3:20:00 PM

Lab ID: 1505223-001

Matrix: MEOH (SOIL) 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 ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	ND	5.6	10		mg/Kg-dr	1	5/8/2015 6:05:15 PM	19116
Motor Oil Range Organics (MRO)	ND	51	51		mg/Kg-dr	1	5/8/2015 6:05:15 PM	19116
Surr: DNOP	100	0	57.9-140		%REC	1	5/8/2015 6:05:15 PM	19116
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB	
Gasoline Range Organics (GRO)	ND	0.95	3.2		mg/Kg-dr	1	5/7/2015 10:31:17 AM	19091
Surr: BFB	93.0	0	80-120		%REC	1	5/7/2015 10:31:17 AM	19091
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	9.6	1.0	1.0		wt%	1	5/6/2015	R26023
EPA METHOD 7471: MERCURY							Analyst: JLF	
Mercury	0.0055	0.0030	0.035	J	mg/Kg-dr	1	5/8/2015 4:25:42 PM	19112
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.5	2.8		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Arsenic	1.8	0.32	2.8	J	mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Barium	1000	0.16	0.55		mg/Kg-dr	5	5/9/2015 10:09:58 AM	19082
Beryllium	1.1	0.0082	0.17		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Chromium	9.3	0.067	0.33		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Cobalt	4.8	0.042	0.33		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Iron	15000	67	280		mg/Kg-dr	100	5/8/2015 1:23:07 PM	19082
Lead	2.5	0.12	0.28		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Manganese	410	0.13	0.22		mg/Kg-dr	2	5/8/2015 3:11:10 PM	19082
Nickel	8.2	0.14	0.55		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Silver	ND	0.033	0.28		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Vanadium	21	0.037	2.8		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
Zinc	14	0.71	2.8		mg/Kg-dr	1	5/8/2015 3:09:19 PM	19082
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Aniline	ND	0.096	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Anthracene	ND	0.093	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Azobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Benz(a)anthracene	ND	0.086	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Benzo(a)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Benzo(b)fluoranthene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Benzo(g,h,i)perylene	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Benzo(k)fluoranthene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157

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
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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.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-6 (2-4')

Project: SWMU 10

Collection Date: 5/4/2015 3:20:00 PM

Lab ID: 1505223-001

Matrix: MEOH (SOIL) 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	
Benzoic acid	ND	0.063	0.55		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Benzyl alcohol	ND	0.098	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Bis(2-chloroethoxy)methane	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Bis(2-chloroethyl)ether	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.084	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.12	0.55		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Butyl benzyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
4-Chloro-3-methylphenol	ND	0.11	0.55		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
4-Chloroaniline	ND	0.10	0.55		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
4-Chlorophenyl phenyl ether	ND	0.16	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Di-n-butyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Di-n-octyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
1,2-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
1,3-Dichlorobenzene	ND	0.098	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
1,4-Dichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
3,3'-Dichlorobenzidine	ND	0.085	0.28		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Diethyl phthalate	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2,4-Dichlorophenol	ND	0.11	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2,4-Dimethylphenol	ND	0.086	0.33		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.060	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2,4-Dinitrophenol	ND	0.046	0.55		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2,4-Dinitrotoluene	ND	0.098	0.55		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2,6-Dinitrotoluene	ND	0.12	0.55		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Hexachlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Hexachlorocyclopentadiene	ND	0.076	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Hexachloroethane	ND	0.098	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Isophorone	ND	0.12	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-6 (2-4')

Project: SWMU 10

Collection Date: 5/4/2015 3:20:00 PM

Lab ID: 1505223-001

Matrix: MEOH (SOIL) 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	
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2-Methylphenol	ND	0.11	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
3+4-Methylphenol	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
N-Nitrosodiphenylamine	ND	0.099	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Naphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2-Nitroaniline	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
4-Nitroaniline	ND	0.099	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Nitrobenzene	ND	0.11	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2-Nitrophenol	ND	0.099	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
4-Nitrophenol	ND	0.095	0.28		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Pentachlorophenol	ND	0.069	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Phenanthrene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Phenol	ND	0.099	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Pyridine	ND	0.092	0.44		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
2,4,6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 6:48:16 PM	19157
Surr: 2-Fluorophenol	69.4		26.4-129		%REC	1	5/13/2015 6:48:16 PM	19157
Surr: Phenol-d5	71.4		34.8-118		%REC	1	5/13/2015 6:48:16 PM	19157
Surr: 2,4,6-Tribromophenol	72.8		26.8-128		%REC	1	5/13/2015 6:48:16 PM	19157
Surr: Nitrobenzene-d5	68.8		35.8-124		%REC	1	5/13/2015 6:48:16 PM	19157
Surr: 2-Fluorobiphenyl	70.7		24.5-139		%REC	1	5/13/2015 6:48:16 PM	19157
Surr: 4-Terphenyl-d14	66.2		29.4-129		%REC	1	5/13/2015 6:48:16 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.00387	0.000467	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Toluene	0.00275	0.000216	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Ethylbenzene	0.000767	0.000349	0.00207	J	mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Xylenes, Total	0.00220	0.00124	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Methyl tert-butyl ether (MTBE)	ND	0.000869	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,2,4-Trimethylbenzene	0.00106	0.000542	0.00207	J	mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,3,5-Trimethylbenzene	0.000477	0.000364	0.00207	J	mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,2-Dichloroethane (EDC)	ND	0.000556	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,2-Dibromoethane (EDB)	ND	0.000248	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Naphthalene	ND	0.000678	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1-Methylnaphthalene	ND	0.000814	0.00415		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107

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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.**CLIENT:** Western Refining Company**Client Sample ID:** SWMU 10-6 (2-4')**Project:** SWMU 10**Collection Date:** 5/4/2015 3:20:00 PM**Lab ID:** 1505223-001**Matrix:** MEOH (SOIL) **Received Date:** 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
2-Methylnaphthalene	ND	0.000810	0.00415		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Acetone	0.00854	0.00129	0.0104	J	mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Bromobenzene	ND	0.000577	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Bromodichloromethane	ND	0.000280	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Bromoform	ND	0.000537	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Bromomethane	ND	0.00123	0.00311		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
2-Butanone	0.00176	0.000664	0.0104	J	mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Carbon tetrachloride	ND	0.000375	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Chlorobenzene	ND	0.000210	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Chloroethane	ND	0.00207	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Chloroform	ND	0.000427	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Chloromethane	ND	0.000244	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
2-Chlorotoluene	ND	0.000405	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Carbon disulfide	ND	0.000938	0.0104		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
4-Chlorotoluene	ND	0.000399	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
cis-1,2-DCE	ND	0.000548	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
cis-1,3-Dichloropropene	ND	0.00207	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,2-Dibromo-3-chloropropane	ND	0.000609	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Dibromochloromethane	ND	0.000233	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Dibromomethane	ND	0.00118	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,2-Dichlorobenzene	ND	0.000460	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,3-Dichlorobenzene	ND	0.000351	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,4-Dichlorobenzene	ND	0.000325	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Dichlorodifluoromethane	ND	0.000847	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,1-Dichloroethane	ND	0.000484	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,1-Dichloroethene	ND	0.000346	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,2-Dichloropropane	ND	0.000443	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,3-Dichloropropane	ND	0.000323	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
2,2-Dichloropropane	ND	0.000360	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,1-Dichloropropene	ND	0.000380	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Hexachlorobutadiene	ND	0.000418	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Isopropylbenzene	ND	0.000481	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
4-Isopropyltoluene	ND	0.000805	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Methylene chloride	0.000695	0.000512	0.00207	J	mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
n-Butylbenzene	ND	0.000851	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
2-Hexanone	0.000726	0.000431	0.0104	J	mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
n-Propylbenzene	ND	0.000388	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
sec-Butylbenzene	0.000695	0.000524	0.00207	J	mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Styrene	ND	0.000344	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107

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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 10-6 (2-4')**Project:** SWMU 10**Collection Date:** 5/4/2015 3:20:00 PM**Lab ID:** 1505223-001**Matrix:** MEOH (SOIL) **Received Date:** 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
4-Methyl-2-pentanone	ND	0.000876	0.0104		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
tert-Butylbenzene	ND	0.000318	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,1,1,2-Tetrachloroethane	ND	0.000337	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,1,2,2-Tetrachloroethane	ND	0.000456	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Tetrachloroethene (PCE)	ND	0.000411	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
trans-1,2-DCE	ND	0.000335	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
trans-1,3-Dichloropropene	ND	0.000271	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,2,3-Trichlorobenzene	ND	0.000759	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,2,4-Trichlorobenzene	ND	0.000777	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,1,1-Trichloroethane	ND	0.000295	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,1,2-Trichloroethane	ND	0.00207	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Trichloroethene (TCE)	ND	0.000412	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Trichlorofluoromethane	ND	0.000419	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
1,2,3-Trichloropropane	ND	0.000728	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Vinyl chloride	ND	0.000237	0.00207		mg/Kg-dr	1	5/7/2015 12:08:33 PM	19107
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%REC	1	5/7/2015 12:08:33 PM	19107
Surr: 4-Bromofluorobenzene	96.6	0	70-130		%REC	1	5/7/2015 12:08:33 PM	19107
Surr: Dibromofluoromethane	106	0	70-130		%REC	1	5/7/2015 12:08:33 PM	19107
Surr: Toluene-d8	86.5	0	70-130		%REC	1	5/7/2015 12:08:33 PM	19107

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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.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-6 (10-12')

Project: SWMU 10

Collection Date: 5/4/2015 3:30:00 PM

Lab ID: 1505223-002

Matrix: MEOH (SOIL) 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 ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	ND	5.3	9.6		mg/Kg-dr	1	5/8/2015 7:09:05 PM	19116
Motor Oil Range Organics (MRO)	ND	48	48		mg/Kg-dr	1	5/8/2015 7:09:05 PM	19116
Surr: DNOP	104	0	57.9-140		%REC	1	5/8/2015 7:09:05 PM	19116
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB	
Gasoline Range Organics (GRO)	ND	1.2	4.1		mg/Kg-dr	1	5/7/2015 11:00:01 AM	19091
Surr: BFB	91.5	0	80-120		%REC	1	5/7/2015 11:00:01 AM	19091
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	16	1.0	1.0		wt%	1	5/6/2015	R26023
EPA METHOD 7471: MERCURY							Analyst: JLF	
Mercury	ND	0.0035	0.039		mg/Kg-dr	1	5/8/2015 4:29:24 PM	19112
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	1.9	1.6	3.0	J	mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Arsenic	2.1	0.35	3.0	J	mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Barium	550	0.071	0.24		mg/Kg-dr	2	5/8/2015 3:14:46 PM	19082
Beryllium	1.0	0.0088	0.18		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Chromium	14	0.071	0.36		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Cobalt	8.0	0.045	0.36		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Iron	20000	72	300		mg/Kg-dr	100	5/8/2015 1:24:38 PM	19082
Lead	1.6	0.13	0.30		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Manganese	760	0.35	0.59		mg/Kg-dr	5	5/9/2015 10:13:19 AM	19082
Nickel	16	0.15	0.59		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Selenium	ND	1.8	3.0		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Silver	ND	0.035	0.30		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Vanadium	14	0.040	3.0		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
Zinc	23	0.77	3.0		mg/Kg-dr	1	5/8/2015 3:12:56 PM	19082
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Acenaphthylene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Aniline	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Azobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Benz(a)anthracene	ND	0.093	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Benzo(a)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Benzo(g,h,i)perylene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Benzo(k)fluoranthene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 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 10-6 (10-12')

Project: SWMU 10

Collection Date: 5/4/2015 3:30:00 PM

Lab ID: 1505223-002

Matrix: MEOH (SOIL) 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	
Benzoic acid	ND	0.067	0.59		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Benzyl alcohol	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Bis(2-chloroethoxy)methane	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Bis(2-chloroethyl)ether	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.090	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
4-Bromophenyl phenyl ether	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Butyl benzyl phthalate	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Carbazole	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2-Chloronaphthalene	ND	0.13	0.30		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2-Chlorophenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
4-Chlorophenyl phenyl ether	ND	0.18	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Chrysene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Di-n-butyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Di-n-octyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Dibenz(a,h)anthracene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Dibenzofuran	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
1,2-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
1,3-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
1,4-Dichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
3,3'-Dichlorobenzidine	ND	0.091	0.30		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Diethyl phthalate	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Dimethyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2,4-Dichlorophenol	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2,4-Dimethylphenol	ND	0.093	0.35		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.064	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2,4-Dinitrotoluene	ND	0.11	0.59		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Fluoranthene	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Fluorene	ND	0.16	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Hexachlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Hexachlorobutadiene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Hexachlorocyclopentadiene	ND	0.082	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Hexachloroethane	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Isophorone	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 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
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Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505223

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-6 (10-12')

Project: SWMU 10

Collection Date: 5/4/2015 3:30:00 PM

Lab ID: 1505223-002

Matrix: MEOH (SOIL) **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	
1-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2-Methylphenol	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
3+4-Methylphenol	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
N-Nitrosodiphenylamine	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Naphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
4-Nitroaniline	ND	0.11	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2-Nitrophenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
4-Nitrophenol	ND	0.10	0.30		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Pentachlorophenol	ND	0.074	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Phenanthrene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Phenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Pyrene	ND	0.15	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Pyridine	ND	0.099	0.47		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
1,2,4-Trichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2,4,5-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
2,4,6-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:16:13 PM	19157
Surr: 2-Fluorophenol	82.0		26.4-129		%REC	1	5/13/2015 7:16:13 PM	19157
Surr: Phenol-d5	78.7		34.8-118		%REC	1	5/13/2015 7:16:13 PM	19157
Surr: 2,4,6-Tribromophenol	83.5		26.8-128		%REC	1	5/13/2015 7:16:13 PM	19157
Surr: Nitrobenzene-d5	80.2		35.8-124		%REC	1	5/13/2015 7:16:13 PM	19157
Surr: 2-Fluorobiphenyl	78.9		24.5-139		%REC	1	5/13/2015 7:16:13 PM	19157
Surr: 4-Terphenyl-d14	72.7		29.4-129		%REC	1	5/13/2015 7:16:13 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.0226	0.000564	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Toluene	0.0146	0.000260	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Ethylbenzene	0.00350	0.000420	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Xylenes, Total	0.0116	0.00149	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Methyl tert-butyl ether (MTBE)	ND	0.00105	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,2,4-Trimethylbenzene	0.00363	0.000654	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,3,5-Trimethylbenzene	0.00220	0.000439	0.00250	J	mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,2-Dichloroethane (EDC)	ND	0.000670	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,2-Dibromoethane (EDB)	ND	0.000299	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Naphthalene	0.00103	0.000817	0.00250	J	mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1-Methylnaphthalene	ND	0.000982	0.00500		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107

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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
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-6 (10-12')

Project: SWMU 10

Collection Date: 5/4/2015 3:30:00 PM

Lab ID: 1505223-002

Matrix: MEOH (SOIL) Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
2-Methylnaphthalene	ND	0.000977	0.00500		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Acetone	0.00589	0.00156	0.0125	J	mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Bromobenzene	ND	0.000696	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Bromodichloromethane	ND	0.000338	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Bromoform	ND	0.000648	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Bromomethane	ND	0.00148	0.00375		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
2-Butanone	ND	0.000801	0.0125		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Carbon tetrachloride	ND	0.000453	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Chlorobenzene	ND	0.000254	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Chloroethane	ND	0.00250	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Chloroform	ND	0.000515	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Chloromethane	ND	0.000295	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
2-Chlorotoluene	ND	0.000488	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Carbon disulfide	ND	0.00113	0.0125		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
4-Chlorotoluene	ND	0.000482	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
cis-1,2-DCE	ND	0.000661	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
cis-1,3-Dichloropropene	ND	0.00250	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,2-Dibromo-3-chloropropane	ND	0.000735	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Dibromochloromethane	ND	0.000281	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Dibromomethane	ND	0.00142	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,2-Dichlorobenzene	ND	0.000555	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,3-Dichlorobenzene	ND	0.000424	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,4-Dichlorobenzene	ND	0.000393	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Dichlorodifluoromethane	ND	0.00102	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,1-Dichloroethane	ND	0.000584	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,1-Dichloroethene	ND	0.000417	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,2-Dichloropropane	ND	0.000534	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,3-Dichloropropane	ND	0.000390	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
2,2-Dichloropropane	ND	0.000434	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,1-Dichloropropene	ND	0.000458	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Hexachlorobutadiene	ND	0.000505	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Isopropylbenzene	ND	0.000580	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
4-Isopropyltoluene	ND	0.000971	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Methylene chloride	ND	0.000618	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
n-Butylbenzene	ND	0.00103	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
2-Hexanone	ND	0.000520	0.0125		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
n-Propylbenzene	0.000638	0.000468	0.00250	J	mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
sec-Butylbenzene	0.000925	0.000632	0.00250	J	mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Styrene	ND	0.000414	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	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 10-6 (10-12')**Project:** SWMU 10**Collection Date:** 5/4/2015 3:30:00 PM**Lab ID:** 1505223-002**Matrix:** MEOH (SOIL) **Received Date:** 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
4-Methyl-2-pentanone	ND	0.00106	0.0125		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
tert-Butylbenzene	ND	0.000383	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,1,1,2-Tetrachloroethane	ND	0.000407	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,1,2,2-Tetrachloroethane	ND	0.000550	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Tetrachloroethene (PCE)	ND	0.000496	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
trans-1,2-DCE	ND	0.000404	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
trans-1,3-Dichloropropene	ND	0.000327	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,2,3-Trichlorobenzene	ND	0.000915	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,2,4-Trichlorobenzene	ND	0.000937	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,1,1-Trichloroethane	ND	0.000356	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,1,2-Trichloroethane	ND	0.00250	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Trichloroethene (TCE)	ND	0.000497	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Trichlorofluoromethane	ND	0.000505	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
1,2,3-Trichloropropane	ND	0.000878	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Vinyl chloride	ND	0.000286	0.00250		mg/Kg-dr	1	5/7/2015 1:36:55 PM	19107
Surr: 1,2-Dichloroethane-d4	91.6	0	70-130		%REC	1	5/7/2015 1:36:55 PM	19107
Surr: 4-Bromofluorobenzene	94.9	0	70-130		%REC	1	5/7/2015 1:36:55 PM	19107
Surr: Dibromofluoromethane	94.1	0	70-130		%REC	1	5/7/2015 1:36:55 PM	19107
Surr: Toluene-d8	85.9	0	70-130		%REC	1	5/7/2015 1:36:55 PM	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 10-2 (0-2')

Project: SWMU 10

Collection Date: 5/4/2015 3:50:00 PM

Lab ID: 1505223-003

Matrix: MEOH (SOIL) 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 ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	24	5.4	9.7		mg/Kg-dr	1	5/8/2015 7:30:14 PM	19116
Motor Oil Range Organics (MRO)	58	49	49		mg/Kg-dr	1	5/8/2015 7:30:14 PM	19116
Surr: DNOP	106	0	57.9-140		%REC	1	5/8/2015 7:30:14 PM	19116
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB	
Gasoline Range Organics (GRO)	ND	0.99	3.3		mg/Kg-dr	1	5/7/2015 11:28:43 AM	19091
Surr: BFB	91.6	0	80-120		%REC	1	5/7/2015 11:28:43 AM	19091
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	16	1.0	1.0		wt%	1	5/6/2015	R26023
EPA METHOD 7471: MERCURY							Analyst: JLF	
Mercury	0.014	0.0034	0.039	J	mg/Kg-dr	1	5/8/2015 4:40:22 PM	19112
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Arsenic	1.8	0.34	2.9	J	mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Barium	390	0.070	0.23		mg/Kg-dr	2	5/8/2015 3:18:28 PM	19082
Beryllium	0.91	0.0086	0.17		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Chromium	11	0.070	0.35		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Cobalt	4.6	0.044	0.35		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Iron	15000	70	290		mg/Kg-dr	100	5/8/2015 1:40:49 PM	19082
Lead	3.1	0.13	0.29		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Manganese	700	0.34	0.58		mg/Kg-dr	5	5/9/2015 10:20:59 AM	19082
Nickel	9.2	0.15	0.58		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Vanadium	21	0.039	2.9		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
Zinc	18	0.75	2.9		mg/Kg-dr	1	5/8/2015 3:16:38 PM	19082
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Acenaphthylene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Aniline	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Azobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Benz(a)anthracene	ND	0.093	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Benzo(a)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Benzo(g,h,i)perylene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Benzo(k)fluoranthene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 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 1505223

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-2 (0-2')

Project: SWMU 10

Collection Date: 5/4/2015 3:50:00 PM

Lab ID: 1505223-003

Matrix: MEOH (SOIL) **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	
Benzoic acid	ND	0.067	0.59		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Benzyl alcohol	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Bis(2-chloroethoxy)methane	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Bis(2-chloroethyl)ether	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.090	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
4-Bromophenyl phenyl ether	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Butyl benzyl phthalate	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Carbazole	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2-Chloronaphthalene	ND	0.13	0.30		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2-Chlorophenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
4-Chlorophenyl phenyl ether	ND	0.18	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Chrysene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Di-n-butyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Di-n-octyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Dibenz(a,h)anthracene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Dibenzofuran	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
1,2-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
1,3-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
1,4-Dichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
3,3'-Dichlorobenzidine	ND	0.091	0.30		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Diethyl phthalate	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Dimethyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2,4-Dichlorophenol	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2,4-Dimethylphenol	ND	0.093	0.36		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.064	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2,4-Dinitrotoluene	ND	0.11	0.59		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Fluoranthene	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Fluorene	ND	0.16	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Hexachlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Hexachlorobutadiene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Hexachlorocyclopentadiene	ND	0.082	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Hexachloroethane	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Isophorone	ND	0.13	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 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 10-2 (0-2')

Project: SWMU 10

Collection Date: 5/4/2015 3:50:00 PM

Lab ID: 1505223-003

Matrix: MEOH (SOIL) 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	
1-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2-Methylphenol	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
3+4-Methylphenol	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
N-Nitrosodiphenylamine	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Naphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
4-Nitroaniline	ND	0.11	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2-Nitrophenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
4-Nitrophenol	ND	0.10	0.30		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Pentachlorophenol	ND	0.074	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Phenanthrene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Phenol	ND	0.11	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Pyrene	ND	0.15	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Pyridine	ND	0.099	0.47		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
1,2,4-Trichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2,4,5-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
2,4,6-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/13/2015 7:44:14 PM	19157
Surr: 2-Fluorophenol	77.9		26.4-129		%REC	1	5/13/2015 7:44:14 PM	19157
Surr: Phenol-d5	78.0		34.8-118		%REC	1	5/13/2015 7:44:14 PM	19157
Surr: 2,4,6-Tribromophenol	86.8		26.8-128		%REC	1	5/13/2015 7:44:14 PM	19157
Surr: Nitrobenzene-d5	78.9		35.8-124		%REC	1	5/13/2015 7:44:14 PM	19157
Surr: 2-Fluorobiphenyl	79.4		24.5-139		%REC	1	5/13/2015 7:44:14 PM	19157
Surr: 4-Terphenyl-d14	67.8		29.4-129		%REC	1	5/13/2015 7:44:14 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.00171	0.000450	0.00200	J	mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Toluene	0.00191	0.000208	0.00200	J	mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Ethylbenzene	0.000618	0.000335	0.00200	J	mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Xylenes, Total	0.00206	0.00119	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Methyl tert-butyl ether (MTBE)	ND	0.000837	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,2,4-Trimethylbenzene	0.000938	0.000521	0.00200	J	mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,3,5-Trimethylbenzene	ND	0.000350	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,2-Dichloroethane (EDC)	ND	0.000535	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,2-Dibromoethane (EDB)	ND	0.000239	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Naphthalene	ND	0.000652	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1-Methylnaphthalene	ND	0.000784	0.00399		mg/Kg-dr	1	5/7/2015 2:06:20 PM	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 10-2 (0-2')**Project:** SWMU 10**Collection Date:** 5/4/2015 3:50:00 PM**Lab ID:** 1505223-003**Matrix:** MEOH (SOIL) **Received Date:** 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
2-Methylnaphthalene	ND	0.000780	0.00399		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Acetone	0.0222	0.00125	0.00998		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Bromobenzene	ND	0.000555	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Bromodichloromethane	ND	0.000270	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Bromoform	ND	0.000517	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Bromomethane	ND	0.00118	0.00299		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
2-Butanone	0.00380	0.000639	0.00998	J	mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Carbon tetrachloride	ND	0.000361	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Chlorobenzene	ND	0.000202	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Chloroethane	ND	0.00200	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Chloroform	ND	0.000411	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Chloromethane	ND	0.000235	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
2-Chlorotoluene	ND	0.000389	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Carbon disulfide	ND	0.000903	0.00998		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
4-Chlorotoluene	ND	0.000384	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
cis-1,2-DCE	ND	0.000528	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
cis-1,3-Dichloropropene	ND	0.00200	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,2-Dibromo-3-chloropropane	ND	0.000586	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Dibromochloromethane	ND	0.000224	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Dibromomethane	ND	0.00113	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,2-Dichlorobenzene	ND	0.000443	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,3-Dichlorobenzene	ND	0.000338	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,4-Dichlorobenzene	ND	0.000313	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Dichlorodifluoromethane	ND	0.000815	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,1-Dichloroethane	ND	0.000466	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,1-Dichloroethene	ND	0.000333	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,2-Dichloropropane	ND	0.000426	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,3-Dichloropropane	ND	0.000311	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
2,2-Dichloropropane	ND	0.000347	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,1-Dichloropropene	ND	0.000365	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Hexachlorobutadiene	ND	0.000403	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Isopropylbenzene	ND	0.000463	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
4-Isopropyltoluene	ND	0.000774	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Methylene chloride	0.000748	0.000493	0.00200	J	mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
n-Butylbenzene	ND	0.000819	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
2-Hexanone	0.000788	0.000415	0.00998	J	mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
n-Propylbenzene	ND	0.000374	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
sec-Butylbenzene	0.000658	0.000504	0.00200	J	mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Styrene	ND	0.000331	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	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 10-2 (0-2')**Project:** SWMU 10**Collection Date:** 5/4/2015 3:50:00 PM**Lab ID:** 1505223-003**Matrix:** MEOH (SOIL) **Received Date:** 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
4-Methyl-2-pentanone	ND	0.000843	0.00998		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
tert-Butylbenzene	ND	0.000306	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,1,1,2-Tetrachloroethane	ND	0.000325	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,1,2,2-Tetrachloroethane	ND	0.000439	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Tetrachloroethene (PCE)	ND	0.000395	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
trans-1,2-DCE	ND	0.000322	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
trans-1,3-Dichloropropene	ND	0.000261	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,2,3-Trichlorobenzene	ND	0.000730	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,2,4-Trichlorobenzene	ND	0.000748	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,1,1-Trichloroethane	ND	0.000284	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,1,2-Trichloroethane	ND	0.00200	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Trichloroethene (TCE)	ND	0.000396	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Trichlorofluoromethane	ND	0.000403	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
1,2,3-Trichloropropane	ND	0.000701	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Vinyl chloride	ND	0.000228	0.00200		mg/Kg-dr	1	5/7/2015 2:06:20 PM	19107
Surr: 1,2-Dichloroethane-d4	92.6	0	70-130		%REC	1	5/7/2015 2:06:20 PM	19107
Surr: 4-Bromofluorobenzene	99.0	0	70-130		%REC	1	5/7/2015 2:06:20 PM	19107
Surr: Dibromofluoromethane	96.0	0	70-130		%REC	1	5/7/2015 2:06:20 PM	19107
Surr: Toluene-d8	96.6	0	70-130		%REC	1	5/7/2015 2:06:20 PM	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 1505223

Date Reported: 10/12/2015

CLIENT: Western Refining Company

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

Project: SWMU 10

Collection Date: 5/4/2015 4:00:00 PM

Lab ID: 1505223-004

Matrix: MEOH (SOIL)

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 ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	ND	5.5	10		mg/Kg-dr	1	5/8/2015 8:34:07 PM	19116
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	5/8/2015 8:34:07 PM	19116
Surr: DNOP	101	0	57.9-140		%REC	1	5/8/2015 8:34:07 PM	19116
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB	
Gasoline Range Organics (GRO)	ND	0.97	3.2		mg/Kg-dr	1	5/7/2015 11:57:30 AM	19091
Surr: BFB	92.4	0	80-120		%REC	1	5/7/2015 11:57:30 AM	19091
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	13	1.0	1.0		wt%	1	5/6/2015	R26023
EPA METHOD 7471: MERCURY							Analyst: JLF	
Mercury	0.0062	0.0034	0.039	J	mg/Kg-dr	1	5/8/2015 4:36:41 PM	19112
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	1.7	1.5	2.9	J	mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Arsenic	1.7	0.34	2.9	J	mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Barium	810	0.17	0.57		mg/Kg-dr	5	5/9/2015 10:22:14 AM	19082
Beryllium	0.98	0.0085	0.17		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Cadmium	ND	0.032	0.11		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Chromium	11	0.069	0.34		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Cobalt	5.1	0.043	0.34		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Iron	17000	69	290		mg/Kg-dr	100	5/8/2015 1:42:19 PM	19082
Lead	2.3	0.12	0.29		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Manganese	360	0.13	0.23		mg/Kg-dr	2	5/8/2015 3:26:54 PM	19082
Nickel	8.9	0.15	0.57		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Silver	ND	0.034	0.29		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Vanadium	22	0.038	2.9		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
Zinc	17	0.74	2.9		mg/Kg-dr	1	5/8/2015 3:25:03 PM	19082
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Aniline	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Anthracene	ND	0.098	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Benz(a)anthracene	ND	0.090	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 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 10-2 (2-4')

Project: SWMU 10

Collection Date: 5/4/2015 4:00:00 PM

Lab ID: 1505223-004

Matrix: MEOH (SOIL) 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	
Benzoic acid	ND	0.065	0.58		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Bis(2-chloroethyl)ether	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.088	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.13	0.58		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
4-Chloro-3-methylphenol	ND	0.11	0.58		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
4-Chloroaniline	ND	0.11	0.58		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2-Chloronaphthalene	ND	0.12	0.29		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Chrysene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Di-n-butyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Di-n-octyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Dibenz(a,h)anthracene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
3,3'-Dichlorobenzidine	ND	0.088	0.29		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2,4-Dichlorophenol	ND	0.11	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2,4-Dimethylphenol	ND	0.090	0.35		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.062	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2,4-Dinitrophenol	ND	0.048	0.58		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2,4-Dinitrotoluene	ND	0.10	0.58		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2,6-Dinitrotoluene	ND	0.13	0.58		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Fluorene	ND	0.16	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Hexachlorobutadiene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Hexachlorocyclopentadiene	ND	0.080	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Isophorone	ND	0.12	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 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 10-2 (2-4')

Project: SWMU 10

Collection Date: 5/4/2015 4:00:00 PM

Lab ID: 1505223-004

Matrix: MEOH (SOIL) 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	
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2-Methylphenol	ND	0.12	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
3+4-Methylphenol	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
4-Nitroaniline	ND	0.10	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2-Nitrophenol	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
4-Nitrophenol	ND	0.099	0.29		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Pentachlorophenol	ND	0.072	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Pyridine	ND	0.096	0.46		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2,4,5-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
2,4,6-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/13/2015 8:12:17 PM	19157
Surr: 2-Fluorophenol	61.5		26.4-129		%REC	1	5/13/2015 8:12:17 PM	19157
Surr: Phenol-d5	63.1		34.8-118		%REC	1	5/13/2015 8:12:17 PM	19157
Surr: 2,4,6-Tribromophenol	65.7		26.8-128		%REC	1	5/13/2015 8:12:17 PM	19157
Surr: Nitrobenzene-d5	57.0		35.8-124		%REC	1	5/13/2015 8:12:17 PM	19157
Surr: 2-Fluorobiphenyl	64.3		24.5-139		%REC	1	5/13/2015 8:12:17 PM	19157
Surr: 4-Terphenyl-d14	63.1		29.4-129		%REC	1	5/13/2015 8:12:17 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.00203	0.000383	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Toluene	0.00155	0.000177	0.00170	J	mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Ethylbenzene	0.000468	0.000286	0.00170	J	mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Xylenes, Total	0.00143	0.00101	0.00170	J	mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Methyl tert-butyl ether (MTBE)	0.00283	0.000713	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,2,4-Trimethylbenzene	0.000663	0.000444	0.00170	J	mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,3,5-Trimethylbenzene	ND	0.000298	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,2-Dichloroethane (EDC)	ND	0.000456	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,2-Dibromoethane (EDB)	ND	0.000203	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Naphthalene	ND	0.000556	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1-Methylnaphthalene	ND	0.000668	0.00340		mg/Kg-dr	1	5/7/2015 2:35:48 PM	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 10-2 (2-4')

Project: SWMU 10

Collection Date: 5/4/2015 4:00:00 PM

Lab ID: 1505223-004

Matrix: MEOH (SOIL) Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
2-Methylnaphthalene	ND	0.000665	0.00340		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Acetone	0.0199	0.00106	0.00850		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Bromobenzene	ND	0.000473	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Bromodichloromethane	ND	0.000230	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Bromoform	ND	0.000441	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Bromomethane	ND	0.00101	0.00255		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
2-Butanone	0.00283	0.000545	0.00850	J	mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Carbon tetrachloride	ND	0.000308	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Chlorobenzene	ND	0.000172	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Chloroethane	ND	0.00170	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Chloroform	ND	0.000350	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Chloromethane	ND	0.000200	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
2-Chlorotoluene	ND	0.000332	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Carbon disulfide	ND	0.000770	0.00850		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
4-Chlorotoluene	ND	0.000328	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
cis-1,2-DCE	ND	0.000450	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
cis-1,3-Dichloropropene	ND	0.00170	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,2-Dibromo-3-chloropropane	ND	0.000500	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Dibromochloromethane	ND	0.000191	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Dibromomethane	ND	0.000965	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,2-Dichlorobenzene	ND	0.000377	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,3-Dichlorobenzene	ND	0.000288	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,4-Dichlorobenzene	ND	0.000267	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Dichlorodifluoromethane	ND	0.000694	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,1-Dichloroethane	ND	0.000397	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,1-Dichloroethene	ND	0.000284	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,2-Dichloropropane	ND	0.000363	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,3-Dichloropropane	ND	0.000265	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
2,2-Dichloropropane	ND	0.000295	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,1-Dichloropropene	ND	0.000311	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Hexachlorobutadiene	ND	0.000343	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Isopropylbenzene	ND	0.000395	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
4-Isopropyltoluene	ND	0.000660	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Methylene chloride	ND	0.000420	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
n-Butylbenzene	ND	0.000698	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
2-Hexanone	0.000672	0.000354	0.00850	J	mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
n-Propylbenzene	ND	0.000318	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
sec-Butylbenzene	ND	0.000430	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Styrene	ND	0.000282	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	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 10-2 (2-4')**Project:** SWMU 10**Collection Date:** 5/4/2015 4:00:00 PM**Lab ID:** 1505223-004**Matrix:** MEOH (SOIL) **Received Date:** 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
4-Methyl-2-pentanone	ND	0.000718	0.00850		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
tert-Butylbenzene	ND	0.000261	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,1,1,2-Tetrachloroethane	ND	0.000277	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,1,2,2-Tetrachloroethane	ND	0.000374	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Tetrachloroethene (PCE)	ND	0.000337	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
trans-1,2-DCE	ND	0.000275	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
trans-1,3-Dichloropropene	ND	0.000222	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,2,3-Trichlorobenzene	ND	0.000622	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,2,4-Trichlorobenzene	ND	0.000637	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,1,1-Trichloroethane	ND	0.000242	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,1,2-Trichloroethane	ND	0.00170	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Trichloroethene (TCE)	ND	0.000338	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Trichlorofluoromethane	ND	0.000344	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
1,2,3-Trichloropropane	ND	0.000597	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Vinyl chloride	ND	0.000194	0.00170		mg/Kg-dr	1	5/7/2015 2:35:48 PM	19107
Surr: 1,2-Dichloroethane-d4	95.0	0	70-130		%REC	1	5/7/2015 2:35:48 PM	19107
Surr: 4-Bromofluorobenzene	102	0	70-130		%REC	1	5/7/2015 2:35:48 PM	19107
Surr: Dibromofluoromethane	96.6	0	70-130		%REC	1	5/7/2015 2:35:48 PM	19107
Surr: Toluene-d8	87.1	0	70-130		%REC	1	5/7/2015 2:35:48 PM	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 1505223

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 DUP03

Project: SWMU 10

Collection Date: 5/4/2015

Lab ID: 1505223-005

Matrix: MEOH (SOIL) 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 ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	ND	5.4	9.8		mg/Kg-dr	1	5/8/2015 8:55:21 PM	19116
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg-dr	1	5/8/2015 8:55:21 PM	19116
Surr: DNOP	112	0	57.9-140		%REC	1	5/8/2015 8:55:21 PM	19116
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB	
Gasoline Range Organics (GRO)	ND	1.2	3.9		mg/Kg-dr	1	5/7/2015 12:26:14 PM	19091
Surr: BFB	92.3	0	80-120		%REC	1	5/7/2015 12:26:14 PM	19091
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	9.4	1.0	1.0		wt%	1	5/6/2015	R26023
EPA METHOD 7471: MERCURY							Analyst: JLF	
Mercury	ND	0.0031	0.036		mg/Kg-dr	1	5/8/2015 4:38:31 PM	19112
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	1.9	1.5	2.8	J	mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Arsenic	2.2	0.32	2.8	J	mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Barium	450	0.066	0.22		mg/Kg-dr	2	5/8/2015 3:30:42 PM	19082
Beryllium	0.95	0.0082	0.17		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Chromium	13	0.066	0.33		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Cobalt	7.0	0.042	0.33		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Iron	20000	67	280		mg/Kg-dr	100	5/8/2015 1:43:51 PM	19082
Lead	1.4	0.12	0.28		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Manganese	730	0.32	0.55		mg/Kg-dr	5	5/9/2015 10:23:28 AM	19082
Nickel	13	0.14	0.55		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Silver	ND	0.033	0.28		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Vanadium	17	0.037	2.8		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
Zinc	21	0.71	2.8		mg/Kg-dr	1	5/8/2015 3:28:53 PM	19082
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Aniline	ND	0.096	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Anthracene	ND	0.093	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Azobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Benz(a)anthracene	ND	0.086	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Benzo(a)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Benzo(b)fluoranthene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Benzo(g,h,i)perylene	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Benzo(k)fluoranthene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 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 1505223

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 DUP03

Project: SWMU 10

Collection Date: 5/4/2015

Lab ID: 1505223-005

Matrix: MEOH (SOIL) **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	
Benzoic acid	ND	0.063	0.55		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Benzyl alcohol	ND	0.098	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Bis(2-chloroethoxy)methane	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Bis(2-chloroethyl)ether	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Bis(2-chloroisopropyl)ether	ND	0.084	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Bis(2-ethylhexyl)phthalate	ND	0.12	0.55		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Butyl benzyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
4-Chloro-3-methylphenol	ND	0.11	0.55		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
4-Chloroaniline	ND	0.10	0.55		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
4-Chlorophenyl phenyl ether	ND	0.16	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Di-n-butyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Di-n-octyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
1,2-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
1,3-Dichlorobenzene	ND	0.098	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
1,4-Dichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
3,3'-Dichlorobenzidine	ND	0.085	0.28		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Diethyl phthalate	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2,4-Dichlorophenol	ND	0.11	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2,4-Dimethylphenol	ND	0.086	0.33		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
4,6-Dinitro-2-methylphenol	ND	0.060	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2,4-Dinitrophenol	ND	0.046	0.55		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2,4-Dinitrotoluene	ND	0.098	0.55		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2,6-Dinitrotoluene	ND	0.12	0.55		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Hexachlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Hexachlorocyclopentadiene	ND	0.076	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Hexachloroethane	ND	0.098	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Indeno(1,2,3-cd)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Isophorone	ND	0.12	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 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 1505223

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 DUP03

Project: SWMU 10

Collection Date: 5/4/2015

Lab ID: 1505223-005

Matrix: MEOH (SOIL) **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	
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2-Methylphenol	ND	0.11	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
3+4-Methylphenol	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
N-Nitrosodiphenylamine	ND	0.098	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Naphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2-Nitroaniline	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
4-Nitroaniline	ND	0.099	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Nitrobenzene	ND	0.11	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2-Nitrophenol	ND	0.099	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
4-Nitrophenol	ND	0.095	0.28		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Pentachlorophenol	ND	0.069	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Phenanthrene	ND	0.12	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Phenol	ND	0.099	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Pyridine	ND	0.092	0.44		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
2,4,6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/13/2015 8:40:20 PM	19157
Surr: 2-Fluorophenol	78.7		26.4-129		%REC	1	5/13/2015 8:40:20 PM	19157
Surr: Phenol-d5	75.1		34.8-118		%REC	1	5/13/2015 8:40:20 PM	19157
Surr: 2,4,6-Tribromophenol	74.0		26.8-128		%REC	1	5/13/2015 8:40:20 PM	19157
Surr: Nitrobenzene-d5	72.7		35.8-124		%REC	1	5/13/2015 8:40:20 PM	19157
Surr: 2-Fluorobiphenyl	78.9		24.5-139		%REC	1	5/13/2015 8:40:20 PM	19157
Surr: 4-Terphenyl-d14	65.6		29.4-129		%REC	1	5/13/2015 8:40:20 PM	19157
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.0206	0.000524	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Toluene	0.0139	0.000242	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Ethylbenzene	0.00328	0.000391	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Xylenes, Total	0.00984	0.00139	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Methyl tert-butyl ether (MTBE)	ND	0.000975	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,2,4-Trimethylbenzene	0.00292	0.000608	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,3,5-Trimethylbenzene	0.00172	0.000408	0.00233	J	mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,2-Dichloroethane (EDC)	ND	0.000623	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,2-Dibromoethane (EDB)	ND	0.000278	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Naphthalene	0.000837	0.000760	0.00233	J	mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1-Methylnaphthalene	ND	0.000913	0.00465		mg/Kg-dr	1	5/7/2015 3:05:10 PM	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 1505223

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 DUP03

Project: SWMU 10

Collection Date: 5/4/2015

Lab ID: 1505223-005

Matrix: MEOH (SOIL) Received Date: 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
2-Methylnaphthalene	ND	0.000909	0.00465		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Acetone	0.00256	0.00145	0.0116	J	mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Bromobenzene	ND	0.000647	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Bromodichloromethane	ND	0.000314	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Bromoform	ND	0.000603	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Bromomethane	ND	0.00137	0.00349		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
2-Butanone	ND	0.000745	0.0116		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Carbon tetrachloride	ND	0.000421	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Chlorobenzene	ND	0.000236	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Chloroethane	ND	0.00233	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Chloroform	ND	0.000479	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Chloromethane	ND	0.000274	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
2-Chlorotoluene	ND	0.000454	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Carbon disulfide	ND	0.00105	0.0116		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
4-Chlorotoluene	ND	0.000448	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
cis-1,2-DCE	ND	0.000615	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
cis-1,3-Dichloropropene	ND	0.00233	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,2-Dibromo-3-chloropropane	ND	0.000683	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Dibromochloromethane	ND	0.000261	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Dibromomethane	ND	0.00132	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,2-Dichlorobenzene	ND	0.000516	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,3-Dichlorobenzene	ND	0.000394	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,4-Dichlorobenzene	ND	0.000365	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Dichlorodifluoromethane	ND	0.000949	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,1-Dichloroethane	ND	0.000543	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,1-Dichloroethene	ND	0.000388	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,2-Dichloropropane	ND	0.000497	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,3-Dichloropropane	ND	0.000362	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
2,2-Dichloropropane	ND	0.000404	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,1-Dichloropropene	ND	0.000426	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Hexachlorobutadiene	ND	0.000469	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Isopropylbenzene	ND	0.000539	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
4-Isopropyltoluene	ND	0.000902	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Methylene chloride	0.000721	0.000575	0.00233	J	mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
n-Butylbenzene	ND	0.000955	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
2-Hexanone	ND	0.000484	0.0116		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
n-Propylbenzene	0.000477	0.000435	0.00233	J	mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
sec-Butylbenzene	0.000849	0.000587	0.00233	J	mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Styrene	ND	0.000385	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	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 DUP03**Project:** SWMU 10**Collection Date:** 5/4/2015**Lab ID:** 1505223-005**Matrix:** MEOH (SOIL) **Received Date:** 5/5/2015 2:55:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
4-Methyl-2-pentanone	ND	0.000982	0.0116		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
tert-Butylbenzene	ND	0.000356	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,1,1,2-Tetrachloroethane	ND	0.000378	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,1,2,2-Tetrachloroethane	ND	0.000511	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Tetrachloroethene (PCE)	ND	0.000461	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
trans-1,2-DCE	ND	0.000376	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
trans-1,3-Dichloropropene	ND	0.000304	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,2,3-Trichlorobenzene	ND	0.000851	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,2,4-Trichlorobenzene	ND	0.000871	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,1,1-Trichloroethane	ND	0.000331	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,1,2-Trichloroethane	ND	0.00233	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Trichloroethene (TCE)	ND	0.000462	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Trichlorofluoromethane	ND	0.000470	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
1,2,3-Trichloropropane	ND	0.000816	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Vinyl chloride	ND	0.000266	0.00233		mg/Kg-dr	1	5/7/2015 3:05:10 PM	19107
Surr: 1,2-Dichloroethane-d4	99.4	0	70-130		%REC	1	5/7/2015 3:05:10 PM	19107
Surr: 4-Bromofluorobenzene	98.8	0	70-130		%REC	1	5/7/2015 3:05:10 PM	19107
Surr: Dibromofluoromethane	103	0	70-130		%REC	1	5/7/2015 3:05:10 PM	19107
Surr: Toluene-d8	95.3	0	70-130		%REC	1	5/7/2015 3:05:10 PM	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 1505223

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: MEOH BLANK

Project: SWMU 10

Collection Date:

Lab ID: 1505223-006

Matrix: MEOH BLAN

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	1.5	5.0		mg/Kg	1	5/7/2015 1:23:46 PM	19091
Surr: BFB	94.3	0	80-120		%REC	1	5/7/2015 1:23:46 PM	19091
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	ND	0.0074	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Toluene	ND	0.0060	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Ethylbenzene	ND	0.0046	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Methyl tert-butyl ether (MTBE)	ND	0.0071	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,2,4-Trimethylbenzene	ND	0.0025	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,3,5-Trimethylbenzene	ND	0.0033	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,2-Dichloroethane (EDC)	ND	0.020	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,2-Dibromoethane (EDB)	ND	0.0040	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Naphthalene	ND	0.012	0.10		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1-Methylnaphthalene	ND	0.030	0.20		mg/Kg	1	5/8/2015 11:52:26 PM	19119
2-Methylnaphthalene	ND	0.033	0.20		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Acetone	0.095	0.037	0.75	J	mg/Kg	1	5/8/2015 11:52:26 PM	19119
Bromobenzene	ND	0.0037	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Bromodichloromethane	ND	0.0041	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Bromoform	ND	0.0040	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Bromomethane	0.016	0.0097	0.15	J	mg/Kg	1	5/8/2015 11:52:26 PM	19119
2-Butanone	ND	0.032	0.50		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Carbon disulfide	ND	0.036	0.50		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Carbon tetrachloride	ND	0.0049	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Chlorobenzene	ND	0.0038	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Chloroethane	ND	0.039	0.10		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Chloroform	ND	0.0052	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Chloromethane	ND	0.0058	0.15		mg/Kg	1	5/8/2015 11:52:26 PM	19119
2-Chlorotoluene	ND	0.0057	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
4-Chlorotoluene	ND	0.0038	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
cis-1,2-DCE	ND	0.0063	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
cis-1,3-Dichloropropene	ND	0.0035	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,2-Dibromo-3-chloropropane	ND	0.0086	0.10		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Dibromochloromethane	ND	0.0037	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Dibromomethane	ND	0.0053	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,2-Dichlorobenzene	ND	0.0030	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,3-Dichlorobenzene	ND	0.0059	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,4-Dichlorobenzene	ND	0.0062	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Dichlorodifluoromethane	ND	0.013	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,1-Dichloroethane	ND	0.020	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,1-Dichloroethene	ND	0.0034	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119

Refer to the QC Summary report and 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 1505223

Date Reported: 10/12/2015

CLIENT: Western Refining Company

Client Sample ID: MEOH BLANK

Project: SWMU 10

Collection Date:

Lab ID: 1505223-006

Matrix: MEOH BLAN

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: cadg	
1,2-Dichloropropane	ND	0.0028	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,3-Dichloropropane	ND	0.0069	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
2,2-Dichloropropane	ND	0.0073	0.10		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,1-Dichloropropene	ND	0.0074	0.10		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Hexachlorobutadiene	ND	0.0069	0.10		mg/Kg	1	5/8/2015 11:52:26 PM	19119
2-Hexanone	ND	0.012	0.50		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Isopropylbenzene	ND	0.0042	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
4-Isopropyltoluene	ND	0.0036	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
4-Methyl-2-pentanone	ND	0.0087	0.50		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Methylene chloride	ND	0.020	0.15		mg/Kg	1	5/8/2015 11:52:26 PM	19119
n-Butylbenzene	ND	0.0043	0.15		mg/Kg	1	5/8/2015 11:52:26 PM	19119
n-Propylbenzene	ND	0.0037	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
sec-Butylbenzene	ND	0.0071	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Styrene	ND	0.0092	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
tert-Butylbenzene	ND	0.0057	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,1,1,2-Tetrachloroethane	ND	0.0041	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,1,2,2-Tetrachloroethane	ND	0.0061	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Tetrachloroethene (PCE)	ND	0.0043	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
trans-1,2-DCE	ND	0.0032	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
trans-1,3-Dichloropropene	ND	0.0090	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,2,3-Trichlorobenzene	ND	0.011	0.10		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,2,4-Trichlorobenzene	ND	0.0092	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,1,1-Trichloroethane	ND	0.0076	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,1,2-Trichloroethane	ND	0.0060	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Trichloroethene (TCE)	ND	0.0049	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Trichlorofluoromethane	ND	0.015	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
1,2,3-Trichloropropane	ND	0.0084	0.10		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Vinyl chloride	ND	0.020	0.050		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Xylenes, Total	ND	0.014	0.10		mg/Kg	1	5/8/2015 11:52:26 PM	19119
Surr: Dibromofluoromethane	99.5		70-130		%REC	1	5/8/2015 11:52:26 PM	19119
Surr: 1,2-Dichloroethane-d4	87.3		70-130		%REC	1	5/8/2015 11:52:26 PM	19119
Surr: Toluene-d8	92.4		70-130		%REC	1	5/8/2015 11:52:26 PM	19119
Surr: 4-Bromofluorobenzene	96.9		70-130		%REC	1	5/8/2015 11:52:26 PM	19119

Refer to the QC Summary report and 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 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 07, 2015
Description :
Sample ID : 1505223-001C SWMU 10-6 2-4FT
Collected By :
Collection Date : 05/04/15 15:20

ESC Sample # : L763578-01

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	40.		mV	2580 B-2011	05/12/15	1
pH	7.6	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 17:07 Printed: 05/12/15 17:08
L763578-01 (PH) - 7.6 a 20.4c



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REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 07, 2015
Description :
Sample ID : 1505223-002C SWMU 10-6 10-12FT
Collected By :
Collection Date : 05/04/15 15:30

ESC Sample # : L763578-02

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	-10.		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 17:07 Printed: 05/12/15 17:08
L763578-02 (PH) - 8.6 at 20.4c



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REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

ESC Sample # : L763578-03

Date Received : May 07, 2015
Description :
Sample ID : 1505223-003C SWMU 10-2 0-2FT
Collected By :
Collection Date : 05/04/15 15:50

Site ID :
Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium, Hexavalent	270	20.	mg/kg	3060A/7196A	05/12/15	10
ORP	-20.		mV	2580 B-2011	05/12/15	1
pH	7.8	0.10	su	9045D	05/08/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 05/12/15 17:07 Printed: 05/12/15 17:08
L763578-03 (PH) - 7.8 at 20.4c



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REPORT OF ANALYSIS

May 12, 2015

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Albuquerque, NM 87109

Date Received : May 07, 2015
Description :
Sample ID : 1505223-004C SWMU 10-2 2-4FT
Collected By :
Collection Date : 05/04/15 16:00

ESC Sample # : L763578-04

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium, Hexavalent	260	20.	mg/kg	3060A/7196A	05/12/15	10
ORP	-10.		mV	2580 B-2011	05/12/15	1
pH	8.2	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: 05/12/15 17:07 Printed: 05/12/15 17:08
L763578-04 (PH) - 8.2 at 20.1c



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REPORT OF ANALYSIS

May 12, 2015

Hall Environmental Analysis Laborat
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Albuquerque, NM 87109

Date Received : May 07, 2015
Description :
Sample ID : 1505223-005C SWMU 10 DUP03
Collected By :
Collection Date : 05/04/15 00:00

ESC Sample # : L763578-05

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/12/15	1
Chromium, Hexavalent	260	20.	mg/kg	3060A/7196A	05/12/15	10
ORP	-10.		mV	2580 B-2011	05/12/15	1
pH	8.4	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 17:07 Printed: 05/12/15 17:08
L763578-05 (PH) - 8.4 at 20.5c



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Hall Environmental Analysis Laboratory

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Quality Assurance Report
Level II

L763578

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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 Duplicate	RPD	Limit	Ref Samp	Batch
pH	su	6.60	6.70	0.749	1	L763514-01	WG787615
pH	su	7.40	7.40	0.542	1	L763739-08	WG787615
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	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	WG787615
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	WG787615
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

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
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

* 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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May 12, 2015

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

WG787615: R3035880: L763578-01 02 03 04 05
WG787747: R3036267: L763578-01 02 03 04 05
WG787856: R3036409: L763578-01 02 03 04 05
WG788141: R3036493: L763578-01 02 03 04 05

* * 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#: 1505223

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19116	SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID: 19116			RunNo: 26059					
Prep Date:	5/7/2015	Analysis Date: 5/8/2015			SeqNo: 773936		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		101	57.9	140			

Sample ID	LCS-19116		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 19116		RunNo: 26059					
Prep Date:	5/7/2015		Analysis Date: 5/8/2015		SeqNo: 773937		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	99.7	67.8	130			
Surr: DNOP	6.1		5.000		123	57.9	140			

Sample ID	1505223-001BMS		SampType: MS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	SWMU 10-6 (2-4')		Batch ID: 19116		RunNo: 26059					
Prep Date:	5/7/2015		Analysis Date: 5/8/2015		SeqNo: 773939		Units: mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.30	0	92.2	42.3	146			
Surr: DNOP	5.9		5.030		118	57.9	140			

Sample ID	1505223-001BMSD		SampType:	MSD		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	SWMU 10-6 (2-4')		Batch ID:	19116		RunNo:	26059				
Prep Date:	5/7/2015		Analysis Date:	5/8/2015		SeqNo:	773940		Units: mg/Kg-dry		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	44	10	50.35	0	88.3	42.3	146	4.24	28.9		
Surr: DNOP	5.7		5.035		113	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#: 1505223

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19091		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 19091		RunNo: 26045					
Prep Date:	5/6/2015		Analysis Date: 5/7/2015		SeqNo: 772072		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	920		1000		92.4	80	120			

Sample ID	LCS-19091		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 19091		RunNo: 26045					
Prep Date:	5/6/2015		Analysis Date: 5/7/2015		SeqNo: 772073		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	64	130			
Surr: BFB	1000		1000		100	80	120			

Sample ID	MB-19119		SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBS		Batch ID: 19119		RunNo: 26061					
Prep Date:	5/7/2015		Analysis Date: 5/8/2015		SeqNo: 773617		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	900		1000		89.8	80	120			

Sample ID	LCS-19119		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSS		Batch ID: 19119		RunNo: 26061					
Prep Date:	5/7/2015		Analysis Date: 5/8/2015		SeqNo: 773618		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	990		1000		98.9	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#: 1505223

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19119		SampType: MBLK		TestCode: EPA Method 8260B: Volatiles					
Client ID:	PBS		Batch ID: 19119		RunNo: 26064					
Prep Date:	5/7/2015		Analysis Date: 5/8/2015		SeqNo: 772830		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	0.0072	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	0.041	0.75								J
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	0.011	0.15								J
2-Butanone	0.036	0.50								J
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	0.0068	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#: 1505223

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19119		SampType:	MBLK		TestCode:	EPA Method 8260B: Volatiles			
Client ID:	PBS		Batch ID:	19119		RunNo:	26064			
Prep Date:	5/7/2015		Analysis Date:	5/8/2015		SeqNo:	772830		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	0.0070	0.15								J
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	0.011	0.10								J
1,2,4-Trichlorobenzene	0.013	0.050								J
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	0.0067	0.050								J
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.55		0.5000		111	70	130			
Surr: 1,2-Dichloroethane-d4	0.51		0.5000		103	70	130			
Surr: Toluene-d8	0.43		0.5000		85.5	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		96.4	70	130			

Sample ID	lcs-19119		SampType:	LCS		TestCode:	EPA Method 8260B: Volatiles			
Client ID:	LCSS		Batch ID:	19119		RunNo:	26064			
Prep Date:	5/7/2015		Analysis Date:	5/8/2015		SeqNo:	772831		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	102	70	130			
Toluene	0.90	0.050	1.000	0	89.9	70	130			
Chlorobenzene	1.0	0.050	1.000	0	103	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#: 1505223

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	lcs-19119		SampType: LCS		TestCode: EPA Method 8260B: Volatiles					
Client ID:	LCSS		Batch ID: 19119		RunNo: 26064					
Prep Date:	5/7/2015		Analysis Date: 5/8/2015		SeqNo: 772831		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	124	60.6	134			
Trichloroethene (TCE)	0.91	0.050	1.000	0	91.3	70	130			
Surr: Dibromofluoromethane	0.54		0.5000		109	70	130			
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		99.5	70	130			
Surr: Toluene-d8	0.44		0.5000		87.4	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.6	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#: 1505223

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

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								
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#: 1505223

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#: 1505223

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				

Sample ID	1505223-001Ams		SampType: MS		TestCode: Method 8260B/5035LOW: VOLATILES					
Client ID:	SWMU 10-6 (2-4')		Batch ID: 19107		RunNo: 26028					
Prep Date:	5/7/2015		Analysis Date: 5/7/2015		SeqNo: 771941		Units: mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0118	0.00219	0.01097	0.003867	72.7	33.4	127			
Toluene	0.0112	0.00219	0.01097	0.002747	76.9	24.8	130			
Chlorobenzene	0.0103	0.00219	0.01097	0	94.3	25.8	132			
1,1-Dichloroethene	0.0138	0.00219	0.01097	0	126	70	130			
Trichloroethene (TCE)	0.0122	0.00219	0.01097	0	111	70	130			
Surr: 1,2-Dichloroethane-d4	0.0255		0.02742		93.0	70	130			
Surr: 4-Bromofluorobenzene	0.0259		0.02742		94.3	70	130			
Surr: Dibromofluoromethane	0.0279		0.02742		102	70	130			
Surr: Toluene-d8	0.0245		0.02742		89.5	70	130			

Sample ID	1505223-001Amsd			SampType:	MSD		TestCode:	Method 8260B/5035LOW: VOLATILES				
Client ID:	SWMU 10-6 (2-4')			Batch ID:	19107		RunNo:	26028				
Prep Date:	5/7/2015			Analysis Date:	5/7/2015		SeqNo:	772064			Units:	mg/Kg-dry
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Benzene	0.0125	0.00219	0.01093	0.003867	79.2	33.4	127	5.53	20			
Toluene	0.0113	0.00219	0.01093	0.002747	78.4	24.8	130	1.16	20			
Chlorobenzene	0.0103	0.00219	0.01093	0	94.0	25.8	132	0.715	20			
1,1-Dichloroethene	0.0133	0.00219	0.01093	0	122	70	130	3.22	20			
Trichloroethene (TCE)	0.0121	0.00219	0.01093	0	110	70	130	1.03	20			
Surr: 1,2-Dichloroethane-d4	0.0266		0.02732		97.4	70	130	0	0			
Surr: 4-Bromofluorobenzene	0.0248		0.02732		90.8	70	130	0	0			
Surr: Dibromofluoromethane	0.0284		0.02732		104	70	130	0	0			
Surr: Toluene-d8	0.0267		0.02732		97.9	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#: 1505223

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#: 1505223

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.	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#: 1505223

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	lcs-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#: 1505223

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19112		SampType:	MBLK		TestCode:	EPA Method 7471: Mercury				
Client ID:	PBS		Batch ID:	19112		RunNo:	26073				
Prep Date:	5/7/2015		Analysis Date:	5/8/2015		SeqNo:	773113		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.033									

Sample ID	LCS-19112			SampType:	LCS		TestCode:	EPA Method 7471: Mercury			
Client ID:	LCSS			Batch ID:	19112		RunNo:	26073			
Prep Date:	5/7/2015			Analysis Date:	5/8/2015		SeqNo:	773114		Units:	mg/Kg
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	0.16	0.033	0.1667	0	98.3	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#: 1505223

12-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19082	SampType: MBLK			TestCode: EPA Method 6010B: Soil Metals					
Client ID:	PBS	Batch ID: 19082			RunNo: 26074					
Prep Date:	5/6/2015	Analysis Date: 5/8/2015			SeqNo: 773158		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	0.028	0.10								J
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	0.75	2.5								J
Lead	ND	0.25								
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Sample ID	LCS-19082		SampType: LCS		TestCode: EPA Method 6010B: Soil Metals					
Client ID:	LCSS		Batch ID: 19082		RunNo: 26074					
Prep Date:	5/6/2015		Analysis Date: 5/8/2015		SeqNo: 773159		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	25	2.5	25.00	0	101	80	120			
Arsenic	26	2.5	25.00	0	103	80	120			
Barium	25	0.10	25.00	0	98.4	80	120			
Beryllium	26	0.15	25.00	0	104	80	120			
Cadmium	25	0.10	25.00	0	99.3	80	120			
Chromium	25	0.30	25.00	0	100	80	120			
Cobalt	24	0.30	25.00	0	97.3	80	120			
Iron	26	2.5	25.00	0	104	80	120			
Lead	25	0.25	25.00	0	99.6	80	120			
Manganese	25	0.10	25.00	0	99.4	80	120			
Nickel	25	0.50	25.00	0	99.2	80	120			
Selenium	25	2.5	25.00	0	100	80	120			
Silver	5.3	0.25	5.000	0	106	80	120			
Vanadium	26	2.5	25.00	0	103	80	120			
Zinc	25	2.5	25.00	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

Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1505223

RcptNo: 1

Received by/date:

AG

05/05/15

Logged By: Ashley Gallegos

5/5/2015 2:55:00 PM

AG

Completed By: Ashley Gallegos

5/6/2015 9:49:27 AM

AG

Reviewed By:

AG

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 $>0^{\circ}\text{C}$ 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	1.0	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:

of HMMs

Project #:

Project Manager:

CHERYL JOHNSON

Sampler: TRACY PAYNE

On Ice: ☒ Yes ☐ No

Sample Temperature: 10

Container	Preservative	HEAL No.

HEAL No.

150533

〇〇

100

2

-002-

100

100

72

1

Date _____ Time _____

Date _____ Time _____

5/2/1988

Date _____ Time _____

211-11-201

10/11/2015. This serves as notice of this

These analyses, examples submitted to Wall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Black	White	Black
White	Black	White
Black	White	Black

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Air Bubbles (Y or N)

[illegible]

if necessary, samples submitted to ~~Health~~ 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 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 27, 2015

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

RE: SWMU 10

OrderNo.: 1505570

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 5/12/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 19, 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'.

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#: 1505570
Date: 10/27/2015

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 1505570

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-14 (6-8')

Project: SWMU 10

Collection Date: 5/12/2015 10:00:00 AM

Lab ID: 1505570-001

Matrix: SOIL

Received Date: 5/12/2015 4:43:00 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)	1200	61	110		mg/Kg-dr	10	5/14/2015 3:41:49 PM	19200
Motor Oil Range Organics (MRO)	ND	550	550		mg/Kg-dr	10	5/14/2015 3:41:49 PM	19200
Surr: DNOP	0	0	57.9-140	S	%REC	10	5/14/2015 3:41:49 PM	19200
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	11	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.0046	0.0030	0.034	J	mg/Kg-dr	1	5/29/2015 12:37:30 PM	19445
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	3.1	5.8		mg/Kg-dr	2	5/16/2015 4:12:10 PM	19259
Arsenic	0.87	0.34	2.9	J	mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
Barium	160	0.035	0.12		mg/Kg-dr	1	5/16/2015 4:42:40 PM	19259
Beryllium	0.78	0.0086	0.17		mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
Chromium	7.0	0.070	0.35		mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
Cobalt	4.5	0.044	0.35		mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
Iron	11000	70	290		mg/Kg-dr	100	5/16/2015 3:44:23 PM	19259
Lead	3.6	0.13	0.29		mg/Kg-dr	1	5/16/2015 4:42:40 PM	19259
Manganese	430	0.14	0.23		mg/Kg-dr	2	5/16/2015 4:12:10 PM	19259
Nickel	7.1	0.15	0.58		mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
Vanadium	13	0.039	2.9		mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
Zinc	14	0.75	2.9		mg/Kg-dr	1	5/16/2015 4:07:44 PM	19259
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Aniline	ND	0.098	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Anthracene	ND	0.095	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Azobenzene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Benz(a)anthracene	ND	0.088	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Benzo(a)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Benzo(b)fluoranthene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Benzo(g,h,i)perylene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Benzo(k)fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Benzoic acid	ND	0.064	0.56		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Benzyl alcohol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270

Refer to the QC Summary report and 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 10-14 (6-8')

Project: SWMU 10

Collection Date: 5/12/2015 10:00:00 AM

Lab ID: 1505570-001

Matrix: SOIL

Received Date: 5/12/2015 4:43:00 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	5/21/2015 3:04:40 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.086	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.13	0.56		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Butyl benzyl phthalate	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
4-Chloro-3-methylphenol	ND	0.11	0.56		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
4-Chloroaniline	ND	0.10	0.56		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
4-Chlorophenyl phenyl ether	ND	0.17	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Di-n-butyl phthalate	ND	0.13	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Di-n-octyl phthalate	ND	0.12	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
1,3-Dichlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
1,4-Dichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
3,3'-Dichlorobenzidine	ND	0.086	0.28		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Diethyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2,4-Dichlorophenol	ND	0.11	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2,4-Dimethylphenol	ND	0.088	0.34		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.061	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2,4-Dinitrophenol	ND	0.047	0.56		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2,4-Dinitrotoluene	ND	0.10	0.56		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2,6-Dinitrotoluene	ND	0.12	0.56		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Fluoranthene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Fluorene	0.20	0.15	0.22	J	mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Hexachlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Hexachlorocyclopentadiene	ND	0.078	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Hexachloroethane	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Isophorone	ND	0.12	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2-Methylphenol	ND	0.11	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270

Refer to the QC Summary report and 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 1505570

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-14 (6-8')

Project: SWMU 10

Collection Date: 5/12/2015 10:00:00 AM

Lab ID: 1505570-001

Matrix: SOIL

Received Date: 5/12/2015 4:43:00 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	5/21/2015 3:04:40 PM	19270
N-Nitrosodi-n-propylamine	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
N-Nitrosodiphenylamine	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Naphthalene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2-Nitroaniline	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
4-Nitroaniline	ND	0.10	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Nitrobenzene	ND	0.12	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2-Nitrophenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
4-Nitrophenol	ND	0.097	0.28		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Pentachlorophenol	ND	0.070	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Phenanthrene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Phenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Pyridine	ND	0.094	0.45		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
2,4,6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 3:04:40 PM	19270
Surr: 2-Fluorophenol	59.5		26.4-129		%REC	1	5/21/2015 3:04:40 PM	19270
Surr: Phenol-d5	69.1		34.8-118		%REC	1	5/21/2015 3:04:40 PM	19270
Surr: 2,4,6-Tribromophenol	48.3		26.8-128		%REC	1	5/21/2015 3:04:40 PM	19270
Surr: Nitrobenzene-d5	76.9		35.8-124		%REC	1	5/21/2015 3:04:40 PM	19270
Surr: 2-Fluorobiphenyl	66.8		24.5-139		%REC	1	5/21/2015 3:04:40 PM	19270
Surr: 4-Terphenyl-d14	54.2		29.4-129		%REC	1	5/21/2015 3:04:40 PM	19270
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	ND	0.0042	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Toluene	ND	0.0034	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Ethylbenzene	ND	0.0026	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Methyl tert-butyl ether (MTBE)	ND	0.0040	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,2,4-Trimethylbenzene	ND	0.0014	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,3,5-Trimethylbenzene	ND	0.0019	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,2-Dichloroethane (EDC)	ND	0.011	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,2-Dibromoethane (EDB)	ND	0.0023	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Naphthalene	ND	0.0067	0.057		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1-Methylnaphthalene	ND	0.017	0.11		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
2-Methylnaphthalene	ND	0.019	0.11		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Acetone	0.054	0.021	0.43	J	mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Bromobenzene	ND	0.0021	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Bromodichloromethane	ND	0.0023	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209

Refer to the QC Summary report and 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 10-14 (6-8')

Project: SWMU 10

Collection Date: 5/12/2015 10:00:00 AM

Lab ID: 1505570-001

Matrix: SOIL

Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Bromoform	ND	0.0023	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Bromomethane	0.023	0.0055	0.085	J	mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
2-Butanone	ND	0.018	0.28		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Carbon disulfide	ND	0.020	0.28		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Carbon tetrachloride	ND	0.0028	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Chlorobenzene	ND	0.0022	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Chloroethane	ND	0.022	0.057		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Chloroform	ND	0.0030	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Chloromethane	ND	0.0033	0.085		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
2-Chlorotoluene	ND	0.0032	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
4-Chlorotoluene	ND	0.0021	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
cis-1,2-DCE	ND	0.0036	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
cis-1,3-Dichloropropene	ND	0.0020	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,2-Dibromo-3-chloropropane	ND	0.0049	0.057		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Dibromochloromethane	ND	0.0021	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Dibromomethane	ND	0.0030	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,2-Dichlorobenzene	ND	0.0017	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,3-Dichlorobenzene	ND	0.0033	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,4-Dichlorobenzene	ND	0.0035	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Dichlorodifluoromethane	ND	0.0071	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,1-Dichloroethane	ND	0.011	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,1-Dichloroethene	ND	0.0020	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,2-Dichloropropane	ND	0.0016	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,3-Dichloropropane	ND	0.0039	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
2,2-Dichloropropane	ND	0.0041	0.057		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,1-Dichloropropene	ND	0.0042	0.057		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Hexachlorobutadiene	ND	0.0039	0.057		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
2-Hexanone	ND	0.0070	0.28		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Isopropylbenzene	ND	0.0024	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
4-Isopropyltoluene	ND	0.0020	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
4-Methyl-2-pentanone	ND	0.0049	0.28		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Methylene chloride	ND	0.011	0.085		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
n-Butylbenzene	ND	0.0024	0.085		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
n-Propylbenzene	ND	0.0021	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
sec-Butylbenzene	0.0097	0.0040	0.028	J	mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Styrene	ND	0.0052	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
tert-Butylbenzene	ND	0.0032	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,1,1,2-Tetrachloroethane	ND	0.0023	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,1,2,2-Tetrachloroethane	ND	0.0034	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209

Refer to the QC Summary report and 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 1505570

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-14 (6-8')

Project: SWMU 10

Collection Date: 5/12/2015 10:00:00 AM

Lab ID: 1505570-001

Matrix: SOIL

Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Tetrachloroethene (PCE)	ND	0.0025	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
trans-1,2-DCE	ND	0.0018	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
trans-1,3-Dichloropropene	ND	0.0051	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,2,3-Trichlorobenzene	ND	0.0060	0.057		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,2,4-Trichlorobenzene	ND	0.0052	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,1,1-Trichloroethane	ND	0.0043	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,1,2-Trichloroethane	ND	0.0034	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Trichloroethene (TCE)	ND	0.0028	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Trichlorofluoromethane	ND	0.0086	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
1,2,3-Trichloropropane	ND	0.0048	0.057		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Vinyl chloride	ND	0.011	0.028		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Xylenes, Total	ND	0.0079	0.057		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Surr: Dibromofluoromethane	105		70-130		%REC	1	5/14/2015 12:35:07 PM	R26209
Surr: 1,2-Dichloroethane-d4	114		70-130		%REC	1	5/14/2015 12:35:07 PM	R26209
Surr: Toluene-d8	95.1		70-130		%REC	1	5/14/2015 12:35:07 PM	R26209
Surr: 4-Bromofluorobenzene	80.4		70-130		%REC	1	5/14/2015 12:35:07 PM	R26209
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	50	0.71	2.8		mg/Kg-dr	1	5/14/2015 12:35:07 PM	R26209
Surr: BFB	130	0	67.4-150		%REC	1	5/14/2015 12:35:07 PM	R26209

Refer to the QC Summary report and 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 1505570

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-14 (21-23')

Project: SWMU 10

Collection Date: 5/12/2015 10:15:00 AM

Lab ID: 1505570-002

Matrix: SOIL

Received Date: 5/12/2015 4:43:00 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	5/14/2015 1:28:39 PM	19200
Motor Oil Range Organics (MRO)	ND	56	56		mg/Kg-dr	1	5/14/2015 1:28:39 PM	19200
Surr: DNOP	111	0	57.9-140		%REC	1	5/14/2015 1:28:39 PM	19200
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	9.5	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.0032	0.0030	0.035	J	mg/Kg-dr	1	5/29/2015 12:39:20 PM	19445
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	7.1	13		mg/Kg-dr	5	5/27/2015 10:13:57 AM	19259
Arsenic	1.1	0.32	2.7	J	mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Barium	220	0.032	0.11		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Beryllium	0.79	0.0080	0.16		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Cadmium	ND	0.030	0.11		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Chromium	8.9	0.065	0.32		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Cobalt	5.0	0.041	0.32		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Iron	15000	65	270		mg/Kg-dr	100	5/16/2015 3:45:46 PM	19259
Lead	3.6	0.12	0.27		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Manganese	410	0.13	0.22		mg/Kg-dr	2	5/16/2015 4:20:35 PM	19259
Nickel	11	0.14	0.54		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Selenium	ND	1.6	2.7		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Silver	ND	0.032	0.27		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Vanadium	7.3	0.036	2.7		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
Zinc	16	0.69	2.7		mg/Kg-dr	1	5/16/2015 4:19:10 PM	19259
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Aniline	ND	0.096	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Anthracene	ND	0.094	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Azobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Benz(a)anthracene	ND	0.087	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Benzo(a)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Benzo(b)fluoranthene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Benzo(g,h,i)perylene	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Benzo(k)fluoranthene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Benzoic acid	ND	0.063	0.55		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Benzyl alcohol	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270

Refer to the QC Summary report and 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 1505570

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-14 (21-23')

Project: SWMU 10

Collection Date: 5/12/2015 10:15:00 AM

Lab ID: 1505570-002

Matrix: SOIL

Received Date: 5/12/2015 4:43:00 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	5/19/2015 8:52:03 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.084	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.12	0.55		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Butyl benzyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
4-Chloro-3-methylphenol	ND	0.11	0.55		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
4-Chloroaniline	ND	0.10	0.55		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
4-Chlorophenyl phenyl ether	ND	0.16	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Di-n-butyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Di-n-octyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
1,3-Dichlorobenzene	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
1,4-Dichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
3,3'-Dichlorobenzidine	ND	0.085	0.28		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Diethyl phthalate	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2,4-Dichlorophenol	ND	0.11	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2,4-Dimethylphenol	ND	0.087	0.33		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.060	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2,4-Dinitrophenol	ND	0.046	0.55		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2,4-Dinitrotoluene	ND	0.099	0.55		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2,6-Dinitrotoluene	ND	0.12	0.55		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Hexachlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Hexachlorocyclopentadiene	ND	0.076	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Hexachloroethane	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Isophorone	ND	0.12	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2-Methylphenol	ND	0.11	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270

Refer to the QC Summary report and 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 1505570

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-14 (21-23')

Project: SWMU 10

Collection Date: 5/12/2015 10:15:00 AM

Lab ID: 1505570-002

Matrix: SOIL

Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
N-Nitrosodiphenylamine	ND	0.099	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Naphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2-Nitroaniline	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
4-Nitroaniline	ND	0.099	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Nitrobenzene	ND	0.11	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2-Nitrophenol	ND	0.099	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
4-Nitrophenol	ND	0.095	0.28		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Pentachlorophenol	ND	0.069	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Phenanthrene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Phenol	ND	0.099	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Pyridine	ND	0.093	0.44		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
2,4,6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 8:52:03 PM	19270
Surr: 2-Fluorophenol	86.7		26.4-129		%REC	1	5/19/2015 8:52:03 PM	19270
Surr: Phenol-d5	90.8		34.8-118		%REC	1	5/19/2015 8:52:03 PM	19270
Surr: 2,4,6-Tribromophenol	89.4		26.8-128		%REC	1	5/19/2015 8:52:03 PM	19270
Surr: Nitrobenzene-d5	88.2		35.8-124		%REC	1	5/19/2015 8:52:03 PM	19270
Surr: 2-Fluorobiphenyl	89.2		24.5-139		%REC	1	5/19/2015 8:52:03 PM	19270
Surr: 4-Terphenyl-d14	71.8		29.4-129		%REC	1	5/19/2015 8:52:03 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.0224	0.000499	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Toluene	0.0147	0.000230	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Ethylbenzene	0.00331	0.000372	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Xylenes, Total	0.0115	0.00132	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Methyl tert-butyl ether (MTBE)	ND	0.000929	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,2,4-Trimethylbenzene	0.00376	0.000579	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,3,5-Trimethylbenzene	0.00233	0.000388	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,2-Dichloroethane (EDC)	ND	0.000593	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,2-Dibromoethane (EDB)	ND	0.000265	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Naphthalene	0.00101	0.000724	0.00221	J	mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1-Methylnaphthalene	ND	0.000870	0.00443		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
2-Methylnaphthalene	ND	0.000865	0.00443		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Acetone	0.00282	0.00138	0.0111	J	mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Bromobenzene	ND	0.000616	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221

Refer to the QC Summary report and 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 10-14 (21-23')

Project: SWMU 10

Collection Date: 5/12/2015 10:15:00 AM

Lab ID: 1505570-002

Matrix: SOIL

Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Bromodichloromethane	ND	0.000299	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Bromoform	ND	0.000574	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Bromomethane	ND	0.00131	0.00332		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
2-Butanone	ND	0.000709	0.0111		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Carbon tetrachloride	ND	0.000401	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Chlorobenzene	ND	0.000224	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Chloroethane	ND	0.00221	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Chloroform	ND	0.000456	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Chloromethane	ND	0.000261	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
2-Chlorotoluene	ND	0.000432	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Carbon disulfide	ND	0.00100	0.0111		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
4-Chlorotoluene	ND	0.000427	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
cis-1,2-DCE	ND	0.000586	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
cis-1,3-Dichloropropene	ND	0.00221	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,2-Dibromo-3-chloropropane	ND	0.000651	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Dibromochloromethane	ND	0.000248	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Dibromomethane	ND	0.00126	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,2-Dichlorobenzene	ND	0.000491	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,3-Dichlorobenzene	ND	0.000375	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,4-Dichlorobenzene	ND	0.000348	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Dichlorodifluoromethane	ND	0.000904	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,1-Dichloroethane	ND	0.000517	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,1-Dichloroethene	ND	0.000370	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,2-Dichloropropane	ND	0.000473	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,3-Dichloropropane	ND	0.000345	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
2,2-Dichloropropane	ND	0.000385	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,1-Dichloropropene	ND	0.000406	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Hexachlorobutadiene	ND	0.000447	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Isopropylbenzene	0.000543	0.000514	0.00221	J	mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
4-Isopropyltoluene	ND	0.000859	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Methylene chloride	ND	0.000547	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
n-Butylbenzene	ND	0.000909	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
2-Hexanone	ND	0.000461	0.0111		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
n-Propylbenzene	0.000587	0.000415	0.00221	J	mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
sec-Butylbenzene	0.000853	0.000559	0.00221	J	mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Styrene	ND	0.000367	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
4-Methyl-2-pentanone	ND	0.000935	0.0111		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
tert-Butylbenzene	ND	0.000339	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,1,1,2-Tetrachloroethane	ND	0.000360	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221

Refer to the QC Summary report and 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 1505570

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-14 (21-23')

Project: SWMU 10

Collection Date: 5/12/2015 10:15:00 AM

Lab ID: 1505570-002

Matrix: SOIL

Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
1,1,2,2-Tetrachloroethane	ND	0.000487	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Tetrachloroethene (PCE)	ND	0.000439	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
trans-1,2-DCE	ND	0.000358	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
trans-1,3-Dichloropropene	ND	0.000290	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,2,3-Trichlorobenzene	ND	0.000810	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,2,4-Trichlorobenzene	ND	0.000830	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,1,1-Trichloroethane	ND	0.000315	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,1,2-Trichloroethane	ND	0.00221	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Trichloroethene (TCE)	ND	0.000440	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Trichlorofluoromethane	ND	0.000447	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
1,2,3-Trichloropropane	ND	0.000778	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Vinyl chloride	ND	0.000253	0.00221		mg/Kg-dr	1	5/14/2015 10:17:29 AM	19221
Surr: 1,2-Dichloroethane-d4	85.0	0	70-130		%REC	1	5/14/2015 10:17:29 AM	19221
Surr: 4-Bromofluorobenzene	99.8	0	70-130		%REC	1	5/14/2015 10:17:29 AM	19221
Surr: Dibromofluoromethane	92.0	0	70-130		%REC	1	5/14/2015 10:17:29 AM	19221
Surr: Toluene-d8	81.3	0	70-130		%REC	1	5/14/2015 10:17:29 AM	19221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.82	3.3		mg/Kg-dr	1	5/15/2015 3:41:52 PM	R26221
Surr: BFB	106	0	67.4-150		%REC	1	5/15/2015 3:41:52 PM	R26221

Refer to the QC Summary report and 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 1505570

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-11 (4-6')

Project: SWMU 10

Collection Date: 5/12/2015 12:00:00 PM

Lab ID: 1505570-003

Matrix: SOIL

Received Date: 5/12/2015 4:43:00 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)	3800	54	98		mg/Kg-dr	10	5/15/2015 9:27:18 AM	19200
Motor Oil Range Organics (MRO)	680	490	490		mg/Kg-dr	10	5/15/2015 9:27:18 AM	19200
Surr: DNOP	0	0	57.9-140	S	%REC	10	5/15/2015 9:27:18 AM	19200
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	11	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.050	0.0031	0.035		mg/Kg-dr	1	5/29/2015 12:44:48 PM	19445
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.5	2.8		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Arsenic	ND	0.33	2.8		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Barium	240	0.034	0.11		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Beryllium	0.61	0.0084	0.17		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Chromium	7.3	0.068	0.34		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Cobalt	3.5	0.043	0.34		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Iron	9200	68	280		mg/Kg-dr	100	5/16/2015 3:47:09 PM	19259
Lead	3.4	0.12	0.28		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Manganese	320	0.13	0.23		mg/Kg-dr	2	5/16/2015 4:23:20 PM	19259
Nickel	5.8	0.15	0.57		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Silver	ND	0.034	0.28		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Vanadium	13	0.038	2.8		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
Zinc	16	0.73	2.8		mg/Kg-dr	1	5/16/2015 4:22:04 PM	19259
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	1.4	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Acenaphthylene	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Aniline	ND	0.98	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Anthracene	ND	0.95	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Azobenzene	ND	1.3	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Benz(a)anthracene	ND	0.88	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Benzo(a)pyrene	ND	1.3	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Benzo(b)fluoranthene	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Benzo(g,h,i)perylene	ND	1.3	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Benzo(k)fluoranthene	ND	1.3	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Benzoic acid	ND	0.64	5.6		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Benzyl alcohol	ND	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Bis(2-chloroethoxy)methane	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270

Refer to the QC Summary report and 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 1505570

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-11 (4-6')

Project: SWMU 10

Collection Date: 5/12/2015 12:00:00 PM

Lab ID: 1505570-003

Matrix: SOIL

Received Date: 5/12/2015 4:43:00 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	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.86	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Bis(2-ethylhexyl)phthalate	ND	1.3	5.6		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
4-Bromophenyl phenyl ether	ND	1.2	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Butyl benzyl phthalate	ND	1.4	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Carbazole	ND	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
4-Chloro-3-methylphenol	ND	1.1	5.6		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
4-Chloroaniline	ND	1.0	5.6		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2-Chloronaphthalene	ND	1.2	2.8		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2-Chlorophenol	ND	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
4-Chlorophenyl phenyl ether	ND	1.7	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Chrysene	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Di-n-butyl phthalate	ND	1.3	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Di-n-octyl phthalate	ND	1.2	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Dibenz(a,h)anthracene	ND	1.2	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Dibenzofuran	ND	1.2	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
1,2-Dichlorobenzene	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
1,3-Dichlorobenzene	ND	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
1,4-Dichlorobenzene	ND	1.2	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
3,3'-Dichlorobenzidine	ND	0.86	2.8		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Diethyl phthalate	ND	1.3	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Dimethyl phthalate	ND	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2,4-Dichlorophenol	ND	1.1	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2,4-Dimethylphenol	ND	0.88	3.4		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.61	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2,4-Dinitrophenol	ND	0.47	5.6		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2,4-Dinitrotoluene	ND	1.0	5.6		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2,6-Dinitrotoluene	ND	1.2	5.6		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Fluoranthene	ND	1.4	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Fluorene	1.8	1.5	2.2	J	mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Hexachlorobenzene	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Hexachlorobutadiene	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Hexachlorocyclopentadiene	ND	0.78	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Hexachloroethane	ND	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Indeno(1,2,3-cd)pyrene	ND	1.3	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Isophorone	ND	1.2	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
1-Methylnaphthalene	14	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2-Methylnaphthalene	23	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2-Methylphenol	ND	1.1	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270

Refer to the QC Summary report and 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 1505570

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-11 (4-6')

Project: SWMU 10

Collection Date: 5/12/2015 12:00:00 PM

Lab ID: 1505570-003

Matrix: SOIL

Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	ND	1.2	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
N-Nitrosodi-n-propylamine	ND	1.2	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
N-Nitrosodiphenylamine	ND	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Naphthalene	5.3	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2-Nitroaniline	ND	1.3	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
3-Nitroaniline	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
4-Nitroaniline	ND	1.0	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Nitrobenzene	ND	1.2	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2-Nitrophenol	ND	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
4-Nitrophenol	ND	0.97	2.8		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Pentachlorophenol	ND	0.70	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Phenanthrene	3.6	1.2	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Phenol	ND	1.0	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Pyrene	ND	1.4	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Pyridine	ND	0.94	4.5		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
1,2,4-Trichlorobenzene	ND	1.1	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2,4,5-Trichlorophenol	ND	1.3	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
2,4,6-Trichlorophenol	ND	1.3	2.2		mg/Kg-dr	1	5/21/2015 4:27:15 PM	19270
Surr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/21/2015 4:27:15 PM	19270
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/21/2015 4:27:15 PM	19270
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/21/2015 4:27:15 PM	19270
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/21/2015 4:27:15 PM	19270
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/21/2015 4:27:15 PM	19270
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/21/2015 4:27:15 PM	19270
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	ND	0.023	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Toluene	0.021	0.019	0.16	J	mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Ethylbenzene	0.10	0.014	0.16	J	mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Methyl tert-butyl ether (MTBE)	ND	0.022	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,2,4-Trimethylbenzene	0.40	0.0078	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,3,5-Trimethylbenzene	0.31	0.010	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,2-Dichloroethane (EDC)	ND	0.063	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,2-Dibromoethane (EDB)	ND	0.013	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Naphthalene	0.54	0.037	0.31		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1-Methylnaphthalene	1.6	0.094	0.63		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
2-Methylnaphthalene	1.8	0.10	0.63		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Acetone	0.15	0.12	2.4	J	mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Bromobenzene	ND	0.012	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Bromodichloromethane	ND	0.013	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209

Refer to the QC Summary report and 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 1505570

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-11 (4-6')

Project: SWMU 10

Collection Date: 5/12/2015 12:00:00 PM

Lab ID: 1505570-003

Matrix: SOIL

Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Bromoform	ND	0.013	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Bromomethane	0.12	0.030	0.47	J	mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
2-Butanone	ND	0.10	1.6		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Carbon disulfide	ND	0.11	1.6		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Carbon tetrachloride	ND	0.015	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Chlorobenzene	ND	0.012	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Chloroethane	ND	0.12	0.31		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Chloroform	ND	0.016	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Chloromethane	ND	0.018	0.47		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
2-Chlorotoluene	ND	0.018	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
4-Chlorotoluene	ND	0.012	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
cis-1,2-DCE	ND	0.020	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
cis-1,3-Dichloropropene	ND	0.011	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,2-Dibromo-3-chloropropane	ND	0.027	0.31		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Dibromochloromethane	ND	0.012	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Dibromomethane	ND	0.017	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,2-Dichlorobenzene	ND	0.0095	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,3-Dichlorobenzene	ND	0.018	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,4-Dichlorobenzene	ND	0.020	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Dichlorodifluoromethane	ND	0.039	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,1-Dichloroethane	ND	0.063	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,1-Dichloroethene	ND	0.011	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,2-Dichloropropane	ND	0.0088	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,3-Dichloropropane	ND	0.022	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
2,2-Dichloropropane	ND	0.023	0.31		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,1-Dichloropropene	ND	0.023	0.31		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Hexachlorobutadiene	ND	0.022	0.31		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
2-Hexanone	ND	0.039	1.6		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Isopropylbenzene	0.040	0.013	0.16	J	mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
4-Isopropyltoluene	ND	0.011	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
4-Methyl-2-pentanone	ND	0.027	1.6		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Methylene chloride	ND	0.063	0.47		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
n-Butylbenzene	0.063	0.014	0.47	J	mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
n-Propylbenzene	0.057	0.012	0.16	J	mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
sec-Butylbenzene	ND	0.022	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Styrene	ND	0.029	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
tert-Butylbenzene	ND	0.018	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,1,1,2-Tetrachloroethane	ND	0.013	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,1,2,2-Tetrachloroethane	ND	0.019	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209

Refer to the QC Summary report and 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 1505570

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-11 (4-6')

Project: SWMU 10

Collection Date: 5/12/2015 12:00:00 PM

Lab ID: 1505570-003

Matrix: SOIL

Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Tetrachloroethene (PCE)	ND	0.014	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
trans-1,2-DCE	ND	0.010	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
trans-1,3-Dichloropropene	ND	0.028	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,2,3-Trichlorobenzene	ND	0.034	0.31		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,2,4-Trichlorobenzene	ND	0.029	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,1,1-Trichloroethane	ND	0.024	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,1,2-Trichloroethane	ND	0.019	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Trichloroethene (TCE)	ND	0.015	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Trichlorofluoromethane	ND	0.047	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
1,2,3-Trichloropropane	ND	0.026	0.31		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Vinyl chloride	ND	0.063	0.16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Xylenes, Total	0.73	0.044	0.31		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Surr: Dibromofluoromethane	106		70-130		%REC	5	5/14/2015 1:03:56 PM	R26209
Surr: 1,2-Dichloroethane-d4	110		70-130		%REC	5	5/14/2015 1:03:56 PM	R26209
Surr: Toluene-d8	98.2		70-130		%REC	5	5/14/2015 1:03:56 PM	R26209
Surr: 4-Bromofluorobenzene	87.5		70-130		%REC	5	5/14/2015 1:03:56 PM	R26209
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	40	3.9	16		mg/Kg-dr	5	5/14/2015 1:03:56 PM	R26209
Surr: BFB	111	0	67.4-150		%REC	5	5/14/2015 1:03:56 PM	R26209

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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 1505570

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-11 (8-10')

Project: SWMU 10

Collection Date: 5/12/2015 12:15:00 PM

Lab ID: 1505570-004

Matrix: SOIL

Received Date: 5/12/2015 4:43:00 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)	870	5.3	9.6		mg/Kg-dr	1	5/15/2015 10:20:57 AM	19200
Motor Oil Range Organics (MRO)	280	48	48		mg/Kg-dr	1	5/15/2015 10:20:57 AM	19200
Surr: DNOP	173	0	57.9-140	S	%REC	1	5/15/2015 10:20:57 AM	19200
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	17	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.014	0.0037	0.042	J	mg/Kg-dr	1	5/29/2015 12:46:33 PM	19445
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	3.2	6.2		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Arsenic	0.91	0.72	6.2	J	mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Barium	330	0.073	0.25		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Beryllium	0.98	0.018	0.37		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Cadmium	ND	0.068	0.25		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Chromium	8.1	0.15	0.74		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Cobalt	5.0	0.093	0.74		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Iron	12000	74	310		mg/Kg-dr	100	5/16/2015 3:48:48 PM	19259
Lead	5.8	0.27	0.62		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Manganese	400	0.14	0.25		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Nickel	7.8	0.32	1.2		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Selenium	ND	3.8	6.2		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Silver	ND	0.073	0.62		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Vanadium	14	0.082	6.2		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
Zinc	18	1.6	6.2		mg/Kg-dr	2	5/16/2015 4:26:20 PM	19259
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	1.5	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Acenaphthylene	ND	1.2	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Aniline	ND	1.0	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Anthracene	ND	1.0	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Azobenzene	ND	1.3	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Benz(a)anthracene	ND	0.94	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Benzo(a)pyrene	ND	1.3	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Benzo(b)fluoranthene	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Benzo(g,h,i)perylene	ND	1.4	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Benzo(k)fluoranthene	ND	1.4	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Benzoic acid	ND	0.69	6.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Benzyl alcohol	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Bis(2-chloroethoxy)methane	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270

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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 1505570

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-11 (8-10')

Project: SWMU 10

Collection Date: 5/12/2015 12:15:00 PM

Lab ID: 1505570-004

Matrix: SOIL

Received Date: 5/12/2015 4:43:00 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	5/21/2015 4:54:49 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.92	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Bis(2-ethylhexyl)phthalate	ND	1.4	6.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
4-Bromophenyl phenyl ether	ND	1.3	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Butyl benzyl phthalate	ND	1.5	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Carbazole	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
4-Chloro-3-methylphenol	ND	1.2	6.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
4-Chloroaniline	ND	1.1	6.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2-Chloronaphthalene	ND	1.3	3.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2-Chlorophenol	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
4-Chlorophenyl phenyl ether	ND	1.8	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Chrysene	ND	1.2	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Di-n-butyl phthalate	ND	1.4	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Di-n-octyl phthalate	ND	1.3	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Dibenz(a,h)anthracene	ND	1.3	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Dibenzofuran	ND	1.3	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
1,2-Dichlorobenzene	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
1,3-Dichlorobenzene	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
1,4-Dichlorobenzene	ND	1.3	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
3,3'-Dichlorobenzidine	ND	0.93	3.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Diethyl phthalate	ND	1.4	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Dimethyl phthalate	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2,4-Dichlorophenol	ND	1.2	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2,4-Dimethylphenol	ND	0.94	3.6		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.65	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2,4-Dinitrophenol	ND	0.50	6.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2,4-Dinitrotoluene	ND	1.1	6.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2,6-Dinitrotoluene	ND	1.3	6.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Fluoranthene	ND	1.5	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Fluorene	ND	1.6	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Hexachlorobenzene	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Hexachlorobutadiene	ND	1.2	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Hexachlorocyclopentadiene	ND	0.83	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Hexachloroethane	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Indeno(1,2,3-cd)pyrene	ND	1.4	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Isophorone	ND	1.3	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
1-Methylnaphthalene	3.8	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2-Methylnaphthalene	5.7	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2-Methylphenol	ND	1.2	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270

Refer to the QC Summary report and 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 1505570

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-11 (8-10')

Project: SWMU 10

Collection Date: 5/12/2015 12:15:00 PM

Lab ID: 1505570-004

Matrix: SOIL

Received Date: 5/12/2015 4:43:00 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	5/21/2015 4:54:49 PM	19270
N-Nitrosodi-n-propylamine	ND	1.2	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
N-Nitrosodiphenylamine	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Naphthalene	1.2	1.1	2.4	J	mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2-Nitroaniline	ND	1.4	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
3-Nitroaniline	ND	1.2	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
4-Nitroaniline	ND	1.1	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Nitrobenzene	ND	1.2	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2-Nitrophenol	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
4-Nitrophenol	ND	1.0	3.0		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Pentachlorophenol	ND	0.75	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Phenanthrene	ND	1.3	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Phenol	ND	1.1	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Pyrene	ND	1.6	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Pyridine	ND	1.0	4.8		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
1,2,4-Trichlorobenzene	ND	1.2	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2,4,5-Trichlorophenol	ND	1.4	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
2,4,6-Trichlorophenol	ND	1.4	2.4		mg/Kg-dr	1	5/21/2015 4:54:49 PM	19270
Surr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/21/2015 4:54:49 PM	19270
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/21/2015 4:54:49 PM	19270
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/21/2015 4:54:49 PM	19270
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/21/2015 4:54:49 PM	19270
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/21/2015 4:54:49 PM	19270
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/21/2015 4:54:49 PM	19270
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	ND	0.0048	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Toluene	0.020	0.0038	0.032	J	mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Ethylbenzene	0.21	0.0030	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Methyl tert-butyl ether (MTBE)	ND	0.0046	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,2,4-Trimethylbenzene	0.79	0.0016	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,3,5-Trimethylbenzene	0.29	0.0021	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,2-Dichloroethane (EDC)	ND	0.013	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,2-Dibromoethane (EDB)	ND	0.0026	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Naphthalene	0.46	0.0077	0.065		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1-Methylnaphthalene	1.3	0.019	0.13		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
2-Methylnaphthalene	2.3	0.021	0.13		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Acetone	0.058	0.024	0.48	J	mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Bromobenzene	ND	0.0024	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Bromodichloromethane	ND	0.0026	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209

Refer to the QC Summary report and 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 10-11 (8-10')

Project: SWMU 10

Collection Date: 5/12/2015 12:15:00 PM

Lab ID: 1505570-004

Matrix: SOIL

Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Bromoform	ND	0.0026	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Bromomethane	0.026	0.0062	0.097	J	mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
2-Butanone	ND	0.021	0.32		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Carbon disulfide	ND	0.023	0.32		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Carbon tetrachloride	ND	0.0031	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Chlorobenzene	ND	0.0025	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Chloroethane	ND	0.025	0.065		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Chloroform	ND	0.0034	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Chloromethane	ND	0.0037	0.097		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
2-Chlorotoluene	ND	0.0037	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
4-Chlorotoluene	ND	0.0024	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
cis-1,2-DCE	ND	0.0041	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
cis-1,3-Dichloropropene	ND	0.0022	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,2-Dibromo-3-chloropropane	ND	0.0056	0.065		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Dibromochloromethane	ND	0.0024	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Dibromomethane	ND	0.0034	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,2-Dichlorobenzene	ND	0.0019	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,3-Dichlorobenzene	ND	0.0038	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,4-Dichlorobenzene	ND	0.0040	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Dichlorodifluoromethane	ND	0.0081	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,1-Dichloroethane	ND	0.013	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,1-Dichloroethene	ND	0.0022	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,2-Dichloropropane	ND	0.0018	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,3-Dichloropropane	ND	0.0045	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
2,2-Dichloropropane	ND	0.0047	0.065		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,1-Dichloropropene	ND	0.0048	0.065		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Hexachlorobutadiene	ND	0.0045	0.065		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
2-Hexanone	ND	0.0079	0.32		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Isopropylbenzene	0.077	0.0027	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
4-Isopropyltoluene	ND	0.0023	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
4-Methyl-2-pentanone	ND	0.0056	0.32		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Methylene chloride	ND	0.013	0.097		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
n-Butylbenzene	0.098	0.0028	0.097		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
n-Propylbenzene	0.12	0.0024	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
sec-Butylbenzene	0.051	0.0046	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Styrene	ND	0.0059	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
tert-Butylbenzene	ND	0.0037	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,1,1,2-Tetrachloroethane	ND	0.0027	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,1,2,2-Tetrachloroethane	ND	0.0039	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209

Refer to the QC Summary report and 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 1505570

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-11 (8-10')

Project: SWMU 10

Collection Date: 5/12/2015 12:15:00 PM

Lab ID: 1505570-004

Matrix: SOIL

Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Tetrachloroethene (PCE)	ND	0.0028	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
trans-1,2-DCE	ND	0.0021	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
trans-1,3-Dichloropropene	ND	0.0058	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,2,3-Trichlorobenzene	ND	0.0069	0.065		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,2,4-Trichlorobenzene	ND	0.0060	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,1,1-Trichloroethane	ND	0.0049	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,1,2-Trichloroethane	ND	0.0039	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Trichloroethene (TCE)	ND	0.0031	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Trichlorofluoromethane	ND	0.0098	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
1,2,3-Trichloropropane	ND	0.0054	0.065		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Vinyl chloride	ND	0.013	0.032		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Xylenes, Total	1.7	0.0090	0.065		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Surr: Dibromofluoromethane	101		70-130		%REC	1	5/14/2015 1:32:43 PM	R26209
Surr: 1,2-Dichloroethane-d4	110		70-130		%REC	1	5/14/2015 1:32:43 PM	R26209
Surr: Toluene-d8	87.5		70-130		%REC	1	5/14/2015 1:32:43 PM	R26209
Surr: 4-Bromofluorobenzene	89.2		70-130		%REC	1	5/14/2015 1:32:43 PM	R26209
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	68	0.81	3.2		mg/Kg-dr	1	5/14/2015 1:32:43 PM	R26209
Surr: BFB	109	0	67.4-150		%REC	1	5/14/2015 1:32:43 PM	R26209

Refer to the QC Summary report and 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 1505570

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-11 (18-20')

Project: SWMU 10

Collection Date: 5/12/2015 12:25:00 PM

Lab ID: 1505570-005

Matrix: SOIL

Received Date: 5/12/2015 4:43:00 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	6.4	12		mg/Kg-dr	1	5/14/2015 3:15:18 PM	19200
Motor Oil Range Organics (MRO)	ND	58	58		mg/Kg-dr	1	5/14/2015 3:15:18 PM	19200
Surr: DNOP	108	0	57.9-140		%REC	1	5/14/2015 3:15:18 PM	19200
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	12	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	ND	0.0032	0.037		mg/Kg-dr	1	5/31/2015 10:41:10 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	3.0	5.7		mg/Kg-dr	2	5/16/2015 4:29:02 PM	19259
Arsenic	0.84	0.34	2.9	J	mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Barium	420	0.068	0.23		mg/Kg-dr	2	5/16/2015 4:29:02 PM	19259
Beryllium	0.89	0.0085	0.17		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Cadmium	ND	0.032	0.11		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Chromium	11	0.069	0.34		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Cobalt	7.7	0.043	0.34		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Iron	16000	69	290		mg/Kg-dr	100	5/16/2015 3:50:18 PM	19259
Lead	3.5	0.12	0.29		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Manganese	890	0.34	0.57		mg/Kg-dr	5	5/16/2015 4:48:11 PM	19259
Nickel	13	0.15	0.57		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Silver	ND	0.034	0.29		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Vanadium	5.2	0.038	2.9		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
Zinc	23	0.74	2.9		mg/Kg-dr	1	5/16/2015 4:27:40 PM	19259
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Aniline	ND	0.099	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Anthracene	ND	0.097	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Benz(a)anthracene	ND	0.089	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Benzoic acid	ND	0.065	0.57		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270

Refer to the QC Summary report and 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 1505570

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-11 (18-20')

Project: SWMU 10

Collection Date: 5/12/2015 12:25:00 PM

Lab ID: 1505570-005

Matrix: SOIL

Received Date: 5/12/2015 4:43:00 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	5/19/2015 9:20:04 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.087	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.13	0.57		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
4-Chloro-3-methylphenol	ND	0.11	0.57		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
4-Chloroaniline	ND	0.11	0.57		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Chrysene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Di-n-butyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Di-n-octyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Dibenz(a,h)anthracene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
3,3'-Dichlorobenzidine	ND	0.088	0.28		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Dimethyl phthalate	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2,4-Dichlorophenol	ND	0.11	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2,4-Dimethylphenol	ND	0.089	0.34		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.062	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2,4-Dinitrophenol	ND	0.047	0.57		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2,4-Dinitrotoluene	ND	0.10	0.57		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2,6-Dinitrotoluene	ND	0.13	0.57		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Fluorene	ND	0.15	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Hexachlorobutadiene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Hexachlorocyclopentadiene	ND	0.079	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Isophorone	ND	0.12	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2-Methylnaphthalene	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2-Methylphenol	ND	0.11	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270

Refer to the QC Summary report and 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 1505570

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-11 (18-20')

Project: SWMU 10

Collection Date: 5/12/2015 12:25:00 PM

Lab ID: 1505570-005

Matrix: SOIL

Received Date: 5/12/2015 4:43:00 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	5/19/2015 9:20:04 PM	19270
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
4-Nitroaniline	ND	0.10	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2-Nitrophenol	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
4-Nitrophenol	ND	0.098	0.28		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Pentachlorophenol	ND	0.071	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Pyridine	ND	0.096	0.46		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
2,4,6-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:20:04 PM	19270
Surr: 2-Fluorophenol	60.4		26.4-129		%REC	1	5/19/2015 9:20:04 PM	19270
Surr: Phenol-d5	62.4		34.8-118		%REC	1	5/19/2015 9:20:04 PM	19270
Surr: 2,4,6-Tribromophenol	63.2		26.8-128		%REC	1	5/19/2015 9:20:04 PM	19270
Surr: Nitrobenzene-d5	61.0		35.8-124		%REC	1	5/19/2015 9:20:04 PM	19270
Surr: 2-Fluorobiphenyl	56.7		24.5-139		%REC	1	5/19/2015 9:20:04 PM	19270
Surr: 4-Terphenyl-d14	51.3		29.4-129		%REC	1	5/19/2015 9:20:04 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.0260	0.000547	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Toluene	0.0162	0.000252	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Ethylbenzene	0.00371	0.000408	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Xylenes, Total	0.0121	0.00145	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Methyl tert-butyl ether (MTBE)	ND	0.00102	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,2,4-Trimethylbenzene	0.00377	0.000634	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,3,5-Trimethylbenzene	0.00245	0.000426	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,2-Dichloroethane (EDC)	ND	0.000650	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,2-Dibromoethane (EDB)	ND	0.000290	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Naphthalene	0.00119	0.000793	0.00243	J	mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1-Methylnaphthalene	0.00126	0.000953	0.00485	J	mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
2-Methylnaphthalene	0.00130	0.000948	0.00485	J	mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Acetone	0.00262	0.00152	0.0121	J	mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Bromobenzene	ND	0.000675	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221

Refer to the QC Summary report and 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 10-11 (18-20')**Project:** SWMU 10**Collection Date:** 5/12/2015 12:25:00 PM**Lab ID:** 1505570-005**Matrix:** SOIL**Received Date:** 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Bromodichloromethane	ND	0.000328	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Bromoform	ND	0.000629	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Bromomethane	ND	0.00144	0.00364		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
2-Butanone	ND	0.000777	0.0121		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Carbon tetrachloride	ND	0.000439	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Chlorobenzene	ND	0.000246	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Chloroethane	ND	0.00243	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Chloroform	ND	0.000500	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Chloromethane	ND	0.000286	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
2-Chlorotoluene	ND	0.000474	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Carbon disulfide	ND	0.00110	0.0121		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
4-Chlorotoluene	ND	0.000468	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
cis-1,2-DCE	ND	0.000642	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
cis-1,3-Dichloropropene	ND	0.00243	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,2-Dibromo-3-chloropropane	ND	0.000713	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Dibromochloromethane	ND	0.000272	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Dibromomethane	ND	0.00138	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,2-Dichlorobenzene	ND	0.000539	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,3-Dichlorobenzene	ND	0.000411	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,4-Dichlorobenzene	ND	0.000381	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Dichlorodifluoromethane	ND	0.000991	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,1-Dichloroethane	ND	0.000567	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,1-Dichloroethene	ND	0.000405	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,2-Dichloropropane	ND	0.000519	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,3-Dichloropropane	ND	0.000378	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
2,2-Dichloropropane	ND	0.000422	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,1-Dichloropropene	ND	0.000444	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Hexachlorobutadiene	ND	0.000490	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Isopropylbenzene	0.000607	0.000563	0.00243	J	mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
4-Isopropyltoluene	ND	0.000942	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Methylene chloride	0.000813	0.000600	0.00243	J	mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
n-Butylbenzene	ND	0.000996	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
2-Hexanone	ND	0.000505	0.0121		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
n-Propylbenzene	0.000680	0.000454	0.00243	J	mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
sec-Butylbenzene	0.000947	0.000613	0.00243	J	mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Styrene	ND	0.000402	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
4-Methyl-2-pentanone	ND	0.00102	0.0121		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
tert-Butylbenzene	ND	0.000372	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,1,1,2-Tetrachloroethane	ND	0.000395	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221

Refer to the QC Summary report and 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 1505570

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-11 (18-20')

Project: SWMU 10

Collection Date: 5/12/2015 12:25:00 PM

Lab ID: 1505570-005

Matrix: SOIL

Received Date: 5/12/2015 4:43:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
1,1,2,2-Tetrachloroethane	ND	0.000534	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Tetrachloroethene (PCE)	ND	0.000481	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
trans-1,2-DCE	ND	0.000392	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
trans-1,3-Dichloropropene	ND	0.000317	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,2,3-Trichlorobenzene	ND	0.000888	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,2,4-Trichlorobenzene	ND	0.000909	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,1,1-Trichloroethane	ND	0.000345	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,1,2-Trichloroethane	ND	0.00243	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Trichloroethene (TCE)	ND	0.000482	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Trichlorofluoromethane	ND	0.000490	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
1,2,3-Trichloropropane	ND	0.000852	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Vinyl chloride	ND	0.000277	0.00243		mg/Kg-dr	1	5/14/2015 11:45:48 AM	19221
Surr: 1,2-Dichloroethane-d4	92.4	0	70-130		%REC	1	5/14/2015 11:45:48 AM	19221
Surr: 4-Bromofluorobenzene	103	0	70-130		%REC	1	5/14/2015 11:45:48 AM	19221
Surr: Dibromofluoromethane	100	0	70-130		%REC	1	5/14/2015 11:45:48 AM	19221
Surr: Toluene-d8	83.2	0	70-130		%REC	1	5/14/2015 11:45:48 AM	19221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.91	3.6		mg/Kg-dr	1	5/14/2015 3:57:02 PM	R26209
Surr: BFB	113	0	67.4-150		%REC	1	5/14/2015 3:57:02 PM	R26209

Refer to the QC Summary report and 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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REPORT OF ANALYSIS

May 21, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 14, 2015
Description :
Sample ID : 1505570-001C SWMU 10-14 6-8FT
Collected By :
Collection Date : 05/12/15 10:00

ESC Sample # : L765169-01
Site ID :
Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/16/15	1
ORP	-35.		mV	2580 B-2011	05/19/15	1
pH	8.4	0.10	su	9045D	05/15/15	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: 05/21/15 10:55 Printed: 05/21/15 10:56
L765169-01 (PH) - 8.4 at 20.2c



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REPORT OF ANALYSIS

May 21, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 14, 2015
Description :
Sample ID : 1505570-002C SWMU 10-14 21-23FT
Collected By :
Collection Date : 05/12/15 10:15

ESC Sample # : L765169-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/16/15	1
ORP	-29.		mV	2580 B-2011	05/19/15	1
pH	9.0	0.10	su	9045D	05/15/15	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: 05/21/15 10:55 Printed: 05/21/15 10:56
L765169-02 (PH) - 9.0 at 20.4c



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REPORT OF ANALYSIS

May 21, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 14, 2015
Description :
Sample ID : 1505570-003C SWMU 10-11 4-6FT
Collected By :
Collection Date : 05/12/15 12:00

ESC Sample # : L765169-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/16/15	1
ORP	27.		mV	2580 B-2011	05/19/15	1
pH	7.5	0.10	su	9045D	05/15/15	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: 05/21/15 10:55 Printed: 05/21/15 10:56
L765169-03 (PH) - 7.5 at 20.7c



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REPORT OF ANALYSIS

May 21, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 14, 2015
Description :
Sample ID : 1505570-004C SWMU 10-11 8-10FT
Collected By :
Collection Date : 05/12/15 12:15

ESC Sample # : L765169-04

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/16/15	1
ORP	15.		mV	2580 B-2011	05/19/15	1
pH	7.9	0.10	su	9045D	05/15/15	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: 05/21/15 10:55 Printed: 05/21/15 10:56
L765169-04 (PH) - 7.9 at 20.7c



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REPORT OF ANALYSIS

May 21, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 14, 2015
Description :
Sample ID : 1505570-005C SWMU 10-11 18-20FT
Collected By :
Collection Date : 05/12/15 12:25

ESC Sample # : L765169-05

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/16/15	1
ORP	-4.0		mV	2580 B-2011	05/19/15	1
pH	9.2	0.10	su	9045D	05/15/15	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: 05/21/15 10:55 Printed: 05/21/15 10:56
L765169-05 (PH) - 9.2 at 20.5c



YOUR LAB OF CHOICE

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765169

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1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

May 21, 2015

Analyte	Result	Laboratory Blank Units	% Rec	Limit	Batch	Date Analyzed
Chromium, Hexavalent	< 2	mg/kg			WG789309	05/16/15 13:30
Cyanide	< .25	mg/kg			WG789989	05/21/15 08:51

Analyte	Units	Result	Duplicate Duplicate	RPD	Limit	Ref Samp	Batch
pH	su	5.70	5.70	0.699	1	L764621-01	WG789052
pH	su	7.90	7.90	0.127	1	L765205-01	WG789052
Chromium, Hexavalent	mg/kg	0.0	0.0	0.0	20	L765169-05	WG789309
ORP	mV	18.0	19.0	5.41	20	L765012-01	WG789737
ORP	mV	71.0	70.0	1.42	20	L765462-10	WG789737
Cyanide	mg/kg	0.0	0.0	0.0	20	L765575-01	WG789989
Cyanide	mg/kg	0.0	0.0	0.0	20	L765575-03	WG789989

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
pH	su	7.84	7.74	98.7	98.3-101.7	WG789052
Chromium, Hexavalent	mg/kg	59.8	71.8	120.*	80-120	WG789309
ORP	mV	100	104.	104.	90-110	WG789737
Cyanide	mg/kg	101	117.	116.	50-150	WG789989

Analyte	Units	Laboratory Control Sample Result	Ref	% Rec	Limit	RPD	Limit	Batch
pH	su	7.76	7.74	99.0	98.3-101.7	0.258	20	WG789052
Chromium, Hexavalent	mg/kg	71.8	71.8	120.	80-120	0.0	20	WG789309
ORP	mV	105.	104.	105.	90-110	0.957	20	WG789737
Cyanide	mg/kg	125.	117.	124.	50-150	6.61	20	WG789989

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Chromium, Hexavalent	mg/kg	22.4	0.0	20	110.	75-125	L765169-05	WG789309
Cyanide	mg/kg	3.32	0.0	3.33	100.	80-120	L765575-02	WG789989

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



YOUR LAB OF CHOICE

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765169

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 21, 2015

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Chromium, Hexavalent	mg/kg	23.2	22.4	116.	75-125	3.51	20	L765169-05	WG789309
Cyanide	mg/kg	3.47	3.32	104.	80-120	4.42	20	L765575-02	WG789989

Batch number / Run number / Sample number cross reference

WG789052: R3037239: L765169-01 02 03 04 05
WG789309: R3037394: L765169-01 02 03 04 05
WG789737: R3038093: L765169-01 02 03 04 05
WG789989: R3038429: L765169-01 02 03 04 05

* * 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#: 1505570

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19200	SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID: 19200			RunNo: 26179					
Prep Date:	5/13/2015	Analysis Date: 5/14/2015			SeqNo: 776929		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		105	57.9	140			

Sample ID	LCS-19200		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 19200		RunNo: 26179					
Prep Date:	5/13/2015		Analysis Date: 5/14/2015		SeqNo: 776930		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	103	67.8	130			
Surr: DNOP	5.5		5.000		110	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#: 1505570

27-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: R26209			RunNo: 26209					
Prep Date:		Analysis Date: 5/14/2015			SeqNo: 777608		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	0.0085	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	0.023	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								

Qualifiers:

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

B Analyte detected in the 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#: 1505570

27-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:	R26209	RunNo:	26209					
Prep Date:		Analysis Date:	5/14/2015	SeqNo:	777608	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	0.52		0.5000		103	70	130			
Surr: Toluene-d8	0.49		0.5000		97.4	70	130			
Surr: 4-Bromofluorobenzene	0.53		0.5000		105	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: Volatiles					
Client ID:	LCSS	Batch ID:	R26209	RunNo:	26209					
Prep Date:		Analysis Date:	5/14/2015	SeqNo:	777609	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	104	70	130			
Toluene	1.0	0.050	1.000	0	104	70	130			
Chlorobenzene	0.98	0.050	1.000	0	98.3	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#: 1505570

27-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: R26209			RunNo: 26209					
Prep Date:		Analysis Date: 5/14/2015			SeqNo: 777609		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	118	60.6	134			
Trichloroethene (TCE)	0.94	0.050	1.000	0	94.2	70	130			
Surr: Dibromofluoromethane	0.53		0.5000		106	70	130			
Surr: 1,2-Dichloroethane-d4	0.54		0.5000		109	70	130			
Surr: Toluene-d8	0.50		0.5000		101	70	130			
Surr: 4-Bromofluorobenzene	0.53		0.5000		106	70	130			

Sample ID	1505570-003a ms		SampType: MS		TestCode: EPA Method 8260B: Volatiles					
Client ID:	SWMU 10-11 (4-6')		Batch ID: R26209		RunNo: 26209					
Prep Date:			Analysis Date: 5/14/2015		SeqNo: 777617		Units: mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	5.6	0.28	5.590	0	99.8	57.8	132			
Toluene	5.7	0.28	5.590	0.02054	102	54.8	139			
Chlorobenzene	5.7	0.28	5.590	0	102	63.5	134			
1,1-Dichloroethene	6.0	0.28	5.590	0	108	26.4	145			
Trichloroethene (TCE)	5.1	0.28	5.590	0	90.4	54.9	125			
Surr: Dibromofluoromethane	2.6		2.795		93.6	70	130			
Surr: 1,2-Dichloroethane-d4	2.8		2.795		101	70	130			
Surr: Toluene-d8	2.7		2.795		98.2	70	130			
Surr: 4-Bromofluorobenzene	2.8		2.795		101	70	130			

Sample ID	1505570-003a msd			SampType:	MSD		TestCode: EPA Method 8260B: Volatiles				
Client ID:	SWMU 10-11 (4-6')			Batch ID:	R26209		RunNo: 26209				
Prep Date:	Analysis Date: 5/14/2015			SeqNo: 777618			Units: mg/Kg-dry				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	5.5	0.28	5.590	0	97.6	57.8	132	2.27	20		
Toluene	5.5	0.28	5.590	0.02054	98.1	54.8	139	4.10	20		
Chlorobenzene	5.6	0.28	5.590	0	100	63.5	134	2.03	20		
1,1-Dichloroethene	6.2	0.28	5.590	0	111	26.4	145	3.06	20		
Trichloroethene (TCE)	4.9	0.28	5.590	0	88.3	54.9	125	2.40	20		
Surr: Dibromofluoromethane	2.8		2.795		101	70	130	0	0		
Surr: 1,2-Dichloroethane-d4	3.0		2.795		107	70	130	0	0		
Surr: Toluene-d8	2.7		2.795		97.6	70	130	0	0		
Surr: 4-Bromofluorobenzene	2.4		2.795		86.3	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#: 1505570

27-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:	R26221		RunNo:	26221			
Prep Date:			Analysis Date:	5/15/2015		SeqNo:	778722		Units: %REC	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.54		0.5000		107	70	130			
Surr: 1,2-Dichloroethane-d4	0.53		0.5000		107	70	130			
Surr: Toluene-d8	0.51		0.5000		101	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		101	70	130			

Sample ID	100ng lcs		SampType:	LCS		TestCode:	EPA Method 8260B: Volatiles			
Client ID:	LCSS		Batch ID:	R26221		RunNo:	26221			
Prep Date:			Analysis Date:	5/15/2015		SeqNo:	778723		Units: %REC	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	0.48		0.5000		95.6	70	130			
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		103	70	130			
Surr: Toluene-d8	0.49		0.5000		98.8	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		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#: 1505570

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19270		SampType: MBLK		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	PBS		Batch ID: 19270		RunNo: 26300					
Prep Date:	5/18/2015		Analysis Date: 5/19/2015		SeqNo: 781322		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#: 1505570

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19270		SampType: MBLK		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	PBS		Batch ID: 19270		RunNo: 26300					
Prep Date:	5/18/2015		Analysis Date: 5/19/2015		SeqNo: 781322		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	3.0		3.330		89.3	26.4	129			
Surr: Phenol-d5	2.9		3.330		86.8	34.8	118			
Surr: 2,4,6-Tribromophenol	2.9		3.330		85.8	26.8	128			
Surr: Nitrobenzene-d5	1.5		1.670		88.3	35.8	124			
Surr: 2-Fluorobiphenyl	1.5		1.670		87.0	24.5	139			
Surr: 4-Terphenyl-d14	1.4		1.670		84.5	29.4	129			

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#: 1505570

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	lcs-19270		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS		Batch ID: 19270		RunNo: 26300					
Prep Date:	5/18/2015		Analysis Date: 5/19/2015		SeqNo: 781323		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.4	0.20	1.670	0	86.6	45.8	114			
4-Chloro-3-methylphenol	2.9	0.50	3.330	0	88.6	52.3	122			
2-Chlorophenol	2.9	0.20	3.330	0	87.7	49.9	115			
1,4-Dichlorobenzene	1.5	0.20	1.670	0	91.5	43.7	107			
2,4-Dinitrotoluene	1.2	0.50	1.670	0	74.4	36	106			
N-Nitrosodi-n-propylamine	1.3	0.20	1.670	0	80.6	39.5	110			
4-Nitrophenol	2.8	0.25	3.330	0	83.9	45.1	121			
Pentachlorophenol	2.5	0.40	3.330	0	75.8	23.7	111			
Phenol	3.2	0.20	3.330	0	97.0	52.7	119			
Pyrene	1.5	0.20	1.670	0	90.1	50.4	116			
1,2,4-Trichlorobenzene	1.7	0.20	1.670	0	101	40.1	114			
Surr: 2-Fluorophenol	3.3		3.330		98.7	26.4	129			
Surr: Phenol-d5	3.4		3.330		103	34.8	118			
Surr: 2,4,6-Tribromophenol	3.4		3.330		101	26.8	128			
Surr: Nitrobenzene-d5	1.6		1.670		96.4	35.8	124			
Surr: 2-Fluorobiphenyl	1.7		1.670		100	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		87.2	29.4	129			

Sample ID	1505570-001Bms	SampType: MS			TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	SWMU 10-14 (6-8')	Batch ID: 19270			RunNo: 26352					
Prep Date:	5/18/2015	Analysis Date: 5/21/2015			SeqNo: 783097		Units: mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.5	0.23	1.884	0	77.1	36.3	121			
4-Chloro-3-methylphenol	2.2	0.56	3.756	0	58.7	48.2	119			
2-Chlorophenol	2.3	0.23	3.756	0	60.6	37.2	114			
1,4-Dichlorobenzene	1.1	0.23	1.884	0	59.7	28.8	106			
2,4-Dinitrotoluene	1.0	0.56	1.884	0	54.1	34.6	111			
N-Nitrosodi-n-propylamine	1.3	0.23	1.884	0	68.3	32.7	117			
4-Nitrophenol	2.6	0.28	3.756	0	68.3	30.1	134			
Pentachlorophenol	2.0	0.45	3.756	0.07937	49.8	24	120			
Phenol	2.3	0.23	3.756		0	61.4	38.3	118		
Pyrene	1.4	0.23	1.884	0	75.0	38.3	134			
1,2,4-Trichlorobenzene	1.2	0.23	1.884	0	61.2	31.8	110			
Surr: 2-Fluorophenol	2.2		3.756		57.6	26.4	129			
Surr: Phenol-d5	2.5		3.756		66.1	34.8	118			
Surr: 2,4,6-Tribromophenol	2.3		3.756		59.9	26.8	128			
Surr: Nitrobenzene-d5	1.3		1.884		67.1	35.8	124			
Surr: 2-Fluorobiphenyl	1.3		1.884		68.2	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#: 1505570

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	1505570-001Bms	SampType:	MS	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	SWMU 10-14 (6-8')	Batch ID:	19270	RunNo:	26352					
Prep Date:	5/18/2015	Analysis Date:	5/21/2015	SeqNo:	783097	Units:	mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	1.1		1.884		55.8	29.4	129			

Sample ID	1505570-001Bmsd	SampType:	MSD	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	SWMU 10-14 (6-8')	Batch ID:	19270	RunNo:	26352					
Prep Date:	5/18/2015	Analysis Date:	5/21/2015	SeqNo:	783098	Units:	mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.5	0.23	1.880	0	82.0	36.3	121	6.00	25.4	
4-Chloro-3-methylphenol	2.5	0.56	3.749	0	66.7	48.2	119	12.6	30.4	
2-Chlorophenol	2.7	0.23	3.749	0	71.7	37.2	114	16.4	33.4	
1,4-Dichlorobenzene	1.3	0.23	1.880	0	71.3	28.8	106	17.5	20.9	
2,4-Dinitrotoluene	1.1	0.56	1.880	0	56.7	34.6	111	4.66	27.9	
N-Nitrosodi-n-propylamine	1.7	0.23	1.880	0	93.0	32.7	117	30.4	27.5	R
4-Nitrophenol	3.0	0.28	3.749	0	81.1	30.1	134	16.9	33.7	
Pentachlorophenol	1.9	0.45	3.749	0.07937	49.3	24	120	1.25	39.7	
Phenol	2.7	0.23	3.749	0	73.2	38.3	118	17.3	30.1	
Pyrene	1.5	0.23	1.880	0	80.8	38.3	134	7.25	22.7	
1,2,4-Trichlorobenzene	1.2	0.23	1.880	0	63.9	31.8	110	4.14	27.8	
Surr: 2-Fluorophenol	2.6		3.749		68.8	26.4	129	0	0	
Surr: Phenol-d5	3.0		3.749		79.2	34.8	118	0	0	
Surr: 2,4,6-Tribromophenol	2.2		3.749		57.5	26.8	128	0	0	
Surr: Nitrobenzene-d5	1.5		1.880		81.7	35.8	124	0	0	
Surr: 2-Fluorobiphenyl	1.4		1.880		74.9	24.5	139	0	0	
Surr: 4-Terphenyl-d14	1.1		1.880		60.6	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#: 1505570

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

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	
Mercurv	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	1505570-002BMS		SampType:	MS		TestCode:	EPA Method 7471: Mercury				
Client ID:	SWMU 10-14 (21-23'		Batch ID:	19445		RunNo:	26497				
Prep Date:	5/28/2015		Analysis Date:	5/29/2015		SeqNo:	787374		Units: mg/Kg-dry		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	0.19	0.035	0.1789	0.003199	103	75	125				

Sample ID	1505570-002BMSD		SampType:	MSD		TestCode:	EPA Method 7471: Mercury				
Client ID:	SWMU 10-14 (21-23'		Batch ID:	19445		RunNo:	26497				
Prep Date:	5/28/2015		Analysis Date:	5/29/2015		SeqNo:	787375		Units: mg/Kg-dry		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	0.19	0.036	0.1839	0.003199	102	75	125	1.94	20		

Sample ID	MB-19475		SampType:	MBLK		TestCode:	EPA Method 7471: Mercury				
Client ID:	PBS		Batch ID:	19475		RunNo:	26535				
Prep Date:	5/30/2015		Analysis Date:	5/31/2015		SeqNo:	788620		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.033									

Sample ID	LCS-19475		SampType: LCS		TestCode: EPA Method 7471: Mercury					
Client ID:	LCSS		Batch ID: 19475		RunNo: 26535					
Prep Date:	5/30/2015		Analysis Date: 5/31/2015		SeqNo: 788621		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.16	0.033	0.1667	0	97.3	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#: 1505570

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19259		SampType:	MBLK		TestCode:	EPA Method 6010B: Soil Metals			
Client ID:	PBS		Batch ID:	19259		RunNo:	26236			
Prep Date:	5/15/2015		Analysis Date:	5/16/2015		SeqNo:	778671		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	0.054	0.10								J
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	0.77	2.5								J
Lead	ND	0.25								
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	0.032	0.25								J
Vanadium	ND	2.5								
Zinc	ND	2.5								

Sample ID	LCS-19259		SampType:	LCS		TestCode:	EPA Method 6010B: Soil Metals			
Client ID:	LCSS		Batch ID:	19259		RunNo:	26236			
Prep Date:	5/15/2015		Analysis Date:	5/16/2015		SeqNo:	778674		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	23	2.5	25.00	0	93.9	80	120			
Arsenic	27	2.5	25.00	0	109	80	120			
Barium	25	0.10	25.00	0	101	80	120			
Beryllium	27	0.15	25.00	0	106	80	120			
Cadmium	26	0.10	25.00	0	104	80	120			
Chromium	25	0.30	25.00	0	101	80	120			
Cobalt	25	0.30	25.00	0	99.4	80	120			
Iron	25	2.5	25.00	0	99.0	80	120			
Lead	25	0.25	25.00	0	99.7	80	120			
Manganese	25	0.10	25.00	0	101	80	120			
Nickel	25	0.50	25.00	0	101	80	120			
Selenium	29	2.5	25.00	0	115	80	120			
Silver	5.4	0.25	5.000	0	108	80	120			
Vanadium	26	2.5	25.00	0	106	80	120			
Zinc	27	2.5	25.00	0	107	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#: 1505570

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	1505570-001BMS		SampType:	MS		TestCode:	EPA Method 6010B: Soil Metals			
Client ID:	SWMU 10-14 (6-8')		Batch ID:	19259		RunNo:	26236			
Prep Date:	5/15/2015		Analysis Date:	5/16/2015		SeqNo:	778691		Units: mg/Kg-dry	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	24	2.7	27.39	0.8732	85.5	75	125			
Beryllium	25	0.16	27.39	0.7775	87.7	75	125			
Cadmium	24	0.11	27.39	0	88.6	75	125			
Chromium	31	0.33	27.39	7.019	87.8	75	125			
Cobalt	26	0.33	27.39	4.480	79.4	75	125			
Nickel	29	0.55	27.39	7.061	80.2	75	125			
Selenium	21	2.7	27.39	0	78.1	75	125			
Silver	4.9	0.27	5.479	0	89.7	75	125			
Vanadium	36	2.7	27.39	12.52	86.8	75	125			
Zinc	37	2.7	27.39	13.76	83.9	75	125			

Sample ID	1505570-001BMSD		SampType:	MSD		TestCode:	EPA Method 6010B: Soil Metals			
Client ID:	SWMU 10-14 (6-8')		Batch ID:	19259		RunNo:	26236			
Prep Date:	5/15/2015		Analysis Date:	5/16/2015		SeqNo:	778692		Units: mg/Kg-dry	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	25	2.9	28.67	0.8732	84.9	75	125	3.62	20	
Beryllium	26	0.17	28.67	0.7775	87.6	75	125	4.31	20	
Cadmium	25	0.11	28.67	0	87.2	75	125	2.90	20	
Chromium	32	0.34	28.67	7.019	85.5	75	125	1.46	20	
Cobalt	27	0.34	28.67	4.480	78.6	75	125	2.89	20	
Nickel	30	0.57	28.67	7.061	78.6	75	125	1.91	20	
Selenium	22	2.9	28.67	0	77.9	75	125	4.33	20	
Silver	5.1	0.29	5.733	0	88.3	75	125	3.06	20	
Vanadium	37	2.9	28.67	12.52	85.5	75	125	2.03	20	
Zinc	38	2.9	28.67	13.76	84.2	75	125	3.08	20	

Sample ID	1505570-001BMS		SampType:	MS		TestCode:	EPA Method 6010B: Soil Metals			
Client ID:	SWMU 10-14 (6-8')		Batch ID:	19259		RunNo:	26236			
Prep Date:	5/15/2015		Analysis Date:	5/16/2015		SeqNo:	778694		Units: mg/Kg-dry	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	9.1	5.5	27.39	0	33.2	75	125			S

Sample ID	1505570-001BMSD		SampType:	MSD		TestCode:	EPA Method 6010B: Soil Metals			
Client ID:	SWMU 10-14 (6-8')		Batch ID:	19259		RunNo:	26236			
Prep Date:	5/15/2015		Analysis Date:	5/16/2015		SeqNo:	778695		Units: mg/Kg-dry	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	9.5	5.7	28.67	0	33.3	75	125	4.69	20	S

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#: 1505570

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	1505570-001BMS	SampType:	MS	TestCode:	EPA Method 6010B: Soil Metals						
Client ID:	SWMU 10-14 (6-8')	Batch ID:	19259	RunNo:	26236						
Prep Date:	5/15/2015	Analysis Date:	5/16/2015	SeqNo:	779832	Units:	mg/Kg-dry				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Lead	24	0.27	27.39	3.555	75.2	75	125				

Sample ID	1505570-001BMSD	SampType:	MSD	TestCode:	EPA Method 6010B: Soil Metals						
Client ID:	SWMU 10-14 (6-8')	Batch ID:	19259	RunNo:	26236						
Prep Date:	5/15/2015	Analysis Date:	5/16/2015	SeqNo:	779833	Units:	mg/Kg-dry				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Lead	25	0.29	28.67	3.555	74.4	75	125	2.94	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#: 1505570

27-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:	R26209	RunNo:	26209					
Prep Date:		Analysis Date:	5/14/2015	SeqNo:	777629	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	490		500.0		98.3	67.4	150			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	LCSS	Batch ID:	R26209	RunNo:	26209					
Prep Date:		Analysis Date:	5/14/2015	SeqNo:	777631	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	96.6	79.9	135			
Surr: BFB	510		500.0		103	67.4	150			

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	PBS	Batch ID:	R26221	RunNo:	26221					
Prep Date:		Analysis Date:	5/15/2015	SeqNo:	778746	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	490		500.0		97.2	67.4	150			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	LCSS	Batch ID:	R26221	RunNo:	26221					
Prep Date:		Analysis Date:	5/15/2015	SeqNo:	778747	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	90.8	79.9	135			
Surr: BFB	480		500.0		96.4	67.4	150			

Sample ID	1505570-002B MS	SampType:	MS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	SWMU 10-14 (21-23'	Batch ID:	R26221	RunNo:	26221					
Prep Date:		Analysis Date:	5/15/2015	SeqNo:	778749	Units:	mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	13	3.3	16.33	0	81.5	65.2	156			
Surr: BFB	360		326.6		110	67.4	150			

Sample ID	1505570-002B MSD	SampType:	MSD	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	SWMU 10-14 (21-23'	Batch ID:	R26221	RunNo:	26221					
Prep Date:		Analysis Date:	5/15/2015	SeqNo:	778750	Units:	mg/Kg-dry			
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#: 1505570

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID		1505570-002B MSD			SampType:	MSD		TestCode: EPA Method 8015D Mod: Gasoline Range		
Client ID:		SWMU 10-14 (21-23'		Batch ID:		R26221		RunNo: 26221		
Prep Date:		Analysis Date:			5/15/2015		SeqNo: 778750		Units: mg/Kg-dry	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	13	3.3	16.33	0	79.8	65.2	156	2.13	20	
Surr: BFB	360		326.6		111	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: 1505570

RcptNo: 1

Received by/date:	AG	05/12/15
Logged By:	Ashley Gallegos	5/12/2015 4:43:00 PM
Completed By:	Ashley Gallegos	5/13/2015 10:12:37 AM
Reviewed By:	AT	05/13/15

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: _____
(<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 27, 2015

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

RE: SWMU 10

OrderNo.: 1505617

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 11 sample(s) on 5/13/2015 for the analyses presented in the following report.

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

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#: 1505617
Date: 10/27/2015

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 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-12 (6-8')

Project: SWMU 10

Collection Date: 5/12/2015 3:45:00 PM

Lab ID: 1505617-001

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 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	5/15/2015 9:35:32 AM	19228
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	5/15/2015 9:35:32 AM	19228
Surr: DNOP	101	0	57.9-140		%REC	1	5/15/2015 9:35:32 AM	19228
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	14	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	ND	0.0034	0.039		mg/Kg-dr	1	5/31/2015 10:42:57 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	3.0	5.6		mg/Kg-dr	2	5/20/2015 12:42:35 PM	19280
Arsenic	1.9	0.33	2.8	J	mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
Barium	1700	0.34	1.1		mg/Kg-dr	10	5/20/2015 1:36:17 PM	19280
Beryllium	1.1	0.0083	0.17		mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
Chromium	12	0.068	0.34		mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
Cobalt	5.7	0.043	0.34		mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
Iron	21000	68	280		mg/Kg-dr	100	5/20/2015 10:36:35 AM	19280
Lead	3.7	0.12	0.28		mg/Kg-dr	1	5/20/2015 1:46:33 PM	19280
Manganese	470	0.13	0.23		mg/Kg-dr	2	5/20/2015 12:42:35 PM	19280
Nickel	10	0.14	0.56		mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
Silver	ND	0.034	0.28		mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
Vanadium	21	0.038	2.8		mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
Zinc	20	0.73	2.8		mg/Kg-dr	1	5/20/2015 12:41:14 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Aniline	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Anthracene	ND	0.098	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Benz(a)anthracene	ND	0.091	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Benzoic acid	ND	0.066	0.58		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270

Refer to the QC Summary report and 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 10-12 (6-8')

Project: SWMU 10

Collection Date: 5/12/2015 3:45:00 PM

Lab ID: 1505617-001

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 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	5/19/2015 9:48:06 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.088	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.13	0.58		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
4-Chloro-3-methylphenol	ND	0.12	0.58		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
4-Chloroaniline	ND	0.11	0.58		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2-Chloronaphthalene	ND	0.12	0.29		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Chrysene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Di-n-butyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Di-n-octyl phthalate	ND	0.13	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Dibenz(a,h)anthracene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
3,3'-Dichlorobenzidine	ND	0.089	0.29		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2,4-Dichlorophenol	ND	0.12	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2,4-Dimethylphenol	ND	0.091	0.35		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.063	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2,4-Dinitrophenol	ND	0.048	0.58		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2,4-Dinitrotoluene	ND	0.10	0.58		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2,6-Dinitrotoluene	ND	0.13	0.58		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Fluorene	ND	0.16	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Hexachlorobutadiene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Hexachlorocyclopentadiene	ND	0.080	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Isophorone	ND	0.12	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2-Methylphenol	ND	0.12	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270

Refer to the QC Summary report and 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 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-12 (6-8')

Project: SWMU 10

Collection Date: 5/12/2015 3:45:00 PM

Lab ID: 1505617-001

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 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	5/19/2015 9:48:06 PM	19270
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
4-Nitroaniline	ND	0.10	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2-Nitrophenol	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
4-Nitrophenol	ND	0.10	0.29		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Pentachlorophenol	ND	0.072	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Phenol	ND	0.10	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Pyridine	ND	0.097	0.46		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
2,4,6-Trichlorophenol	ND	0.13	0.23		mg/Kg-dr	1	5/19/2015 9:48:06 PM	19270
Surr: 2-Fluorophenol	59.0		26.4-129		%REC	1	5/19/2015 9:48:06 PM	19270
Surr: Phenol-d5	59.9		34.8-118		%REC	1	5/19/2015 9:48:06 PM	19270
Surr: 2,4,6-Tribromophenol	67.1		26.8-128		%REC	1	5/19/2015 9:48:06 PM	19270
Surr: Nitrobenzene-d5	58.5		35.8-124		%REC	1	5/19/2015 9:48:06 PM	19270
Surr: 2-Fluorobiphenyl	58.7		24.5-139		%REC	1	5/19/2015 9:48:06 PM	19270
Surr: 4-Terphenyl-d14	50.9		29.4-129		%REC	1	5/19/2015 9:48:06 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.00132	0.000528	0.00234	J	mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Toluene	0.00101	0.000244	0.00234	J	mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Ethylbenzene	ND	0.000394	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Xylenes, Total	ND	0.00140	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Methyl tert-butyl ether (MTBE)	ND	0.000982	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,2,4-Trimethylbenzene	ND	0.000612	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,3,5-Trimethylbenzene	ND	0.000411	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,2-Dichloroethane (EDC)	ND	0.000628	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,2-Dibromoethane (EDB)	ND	0.000280	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Naphthalene	ND	0.000765	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1-Methylnaphthalene	ND	0.000920	0.00468		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
2-Methylnaphthalene	ND	0.000915	0.00468		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Acetone	0.00766	0.00146	0.0117	J	mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Bromobenzene	ND	0.000652	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221

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.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-12 (6-8')

Project: SWMU 10

Collection Date: 5/12/2015 3:45:00 PM

Lab ID: 1505617-001

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Bromodichloromethane	ND	0.000316	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Bromoform	ND	0.000607	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Bromomethane	ND	0.00138	0.00351		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
2-Butanone	0.00208	0.000750	0.0117	J	mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Carbon tetrachloride	ND	0.000424	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Chlorobenzene	ND	0.000237	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Chloroethane	ND	0.00234	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Chloroform	ND	0.000482	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Chloromethane	ND	0.000276	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
2-Chlorotoluene	ND	0.000457	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Carbon disulfide	ND	0.00106	0.0117		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
4-Chlorotoluene	ND	0.000451	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
cis-1,2-DCE	ND	0.000619	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
cis-1,3-Dichloropropene	ND	0.00234	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,2-Dibromo-3-chloropropane	ND	0.000688	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Dibromochloromethane	ND	0.000263	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Dibromomethane	ND	0.00133	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,2-Dichlorobenzene	ND	0.000520	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,3-Dichlorobenzene	ND	0.000397	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,4-Dichlorobenzene	ND	0.000368	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Dichlorodifluoromethane	ND	0.000956	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,1-Dichloroethane	ND	0.000547	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,1-Dichloroethene	ND	0.000391	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,2-Dichloropropane	ND	0.000500	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,3-Dichloropropane	ND	0.000365	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
2,2-Dichloropropane	ND	0.000407	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,1-Dichloropropene	ND	0.000429	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Hexachlorobutadiene	ND	0.000473	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Isopropylbenzene	ND	0.000543	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
4-Isopropyltoluene	ND	0.000909	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Methylene chloride	ND	0.000579	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
n-Butylbenzene	ND	0.000961	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
2-Hexanone	ND	0.000487	0.0117		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
n-Propylbenzene	ND	0.000438	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
sec-Butylbenzene	0.000831	0.000591	0.00234	J	mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Styrene	ND	0.000388	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
4-Methyl-2-pentanone	ND	0.000989	0.0117		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
tert-Butylbenzene	ND	0.000359	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,1,1,2-Tetrachloroethane	ND	0.000381	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221

Refer to the QC Summary report and 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 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-12 (6-8')

Project: SWMU 10

Collection Date: 5/12/2015 3:45:00 PM

Lab ID: 1505617-001

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
1,1,2,2-Tetrachloroethane	ND	0.000515	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Tetrachloroethene (PCE)	ND	0.000464	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
trans-1,2-DCE	ND	0.000379	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
trans-1,3-Dichloropropene	ND	0.000306	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,2,3-Trichlorobenzene	ND	0.000857	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,2,4-Trichlorobenzene	ND	0.000877	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,1,1-Trichloroethane	ND	0.000333	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,1,2-Trichloroethane	ND	0.00234	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Trichloroethene (TCE)	ND	0.000465	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Trichlorofluoromethane	ND	0.000473	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
1,2,3-Trichloropropane	ND	0.000822	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Vinyl chloride	ND	0.000267	0.00234		mg/Kg-dr	1	5/14/2015 12:15:07 PM	19221
Surr: 1,2-Dichloroethane-d4	99.1	0	70-130		%REC	1	5/14/2015 12:15:07 PM	19221
Surr: 4-Bromofluorobenzene	98.1	0	70-130		%REC	1	5/14/2015 12:15:07 PM	19221
Surr: Dibromofluoromethane	100	0	70-130		%REC	1	5/14/2015 12:15:07 PM	19221
Surr: Toluene-d8	82.9	0	70-130		%REC	1	5/14/2015 12:15:07 PM	19221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.77	3.1		mg/Kg-dr	1	5/14/2015 4:25:48 PM	R26209
Surr: BFB	110	0	67.4-150		%REC	1	5/14/2015 4:25:48 PM	R26209

Refer to the QC Summary report and 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
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	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-12 (20-22')

Project: SWMU 10

Collection Date: 5/12/2015 4:00:00 PM

Lab ID: 1505617-002

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 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	5/15/2015 9:56:50 AM	19228
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	5/15/2015 9:56:50 AM	19228
Surr: DNOP	98.0	0	57.9-140		%REC	1	5/15/2015 9:56:50 AM	19228
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	8.9	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	ND	0.0032	0.036		mg/Kg-dr	1	5/31/2015 10:44:44 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.4	2.7		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Arsenic	2.0	0.32	2.7	J	mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Barium	500	0.065	0.22		mg/Kg-dr	2	5/20/2015 12:45:15 PM	19280
Beryllium	0.94	0.0081	0.16		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Cadmium	ND	0.030	0.11		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Chromium	14	0.066	0.33		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Cobalt	9.1	0.041	0.33		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Iron	20000	66	270		mg/Kg-dr	100	5/20/2015 10:37:56 AM	19280
Lead	1.8	0.12	0.27		mg/Kg-dr	1	5/20/2015 1:41:21 PM	19280
Manganese	1300	0.32	0.55		mg/Kg-dr	5	5/20/2015 1:42:46 PM	19280
Nickel	16	0.14	0.55		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Selenium	ND	1.7	2.7		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Silver	ND	0.033	0.27		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Vanadium	25	0.037	2.7		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
Zinc	28	0.71	2.7		mg/Kg-dr	1	5/20/2015 12:43:51 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Aniline	ND	0.096	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Anthracene	ND	0.093	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Azobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Benz(a)anthracene	ND	0.086	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Benzo(a)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Benzo(b)fluoranthene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Benzo(g,h,i)perylene	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Benzo(k)fluoranthene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Benzoic acid	ND	0.063	0.55		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Benzyl alcohol	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Bis(2-chloroethoxy)methane	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270

Refer to the QC Summary report and 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 10-12 (20-22')

Project: SWMU 10

Collection Date: 5/12/2015 4:00:00 PM

Lab ID: 1505617-002

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 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	5/19/2015 10:16:14 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.084	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.12	0.55		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Butyl benzyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
4-Chloro-3-methylphenol	ND	0.11	0.55		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
4-Chloroaniline	ND	0.10	0.55		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
4-Chlorophenyl phenyl ether	ND	0.16	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Di-n-butyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Di-n-octyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
1,3-Dichlorobenzene	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
1,4-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
3,3'-Dichlorobenzidine	ND	0.085	0.28		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Diethyl phthalate	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2,4-Dichlorophenol	ND	0.11	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2,4-Dimethylphenol	ND	0.086	0.33		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.060	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2,4-Dinitrophenol	ND	0.046	0.55		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2,4-Dinitrotoluene	ND	0.098	0.55		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2,6-Dinitrotoluene	ND	0.12	0.55		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Hexachlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Hexachlorocyclopentadiene	ND	0.076	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Hexachloroethane	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Isophorone	ND	0.12	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2-Methylphenol	ND	0.11	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270

Refer to the QC Summary report and 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 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-12 (20-22')

Project: SWMU 10

Collection Date: 5/12/2015 4:00:00 PM

Lab ID: 1505617-002

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
N-Nitrosodiphenylamine	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Naphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2-Nitroaniline	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
4-Nitroaniline	ND	0.099	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Nitrobenzene	ND	0.11	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2-Nitrophenol	ND	0.099	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
4-Nitrophenol	ND	0.095	0.28		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Pentachlorophenol	ND	0.069	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Phenanthrene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Phenol	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Pyridine	ND	0.092	0.44		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
2,4,6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 10:16:14 PM	19270
Surr: 2-Fluorophenol	80.5		26.4-129		%REC	1	5/19/2015 10:16:14 PM	19270
Surr: Phenol-d5	78.5		34.8-118		%REC	1	5/19/2015 10:16:14 PM	19270
Surr: 2,4,6-Tribromophenol	79.0		26.8-128		%REC	1	5/19/2015 10:16:14 PM	19270
Surr: Nitrobenzene-d5	74.7		35.8-124		%REC	1	5/19/2015 10:16:14 PM	19270
Surr: 2-Fluorobiphenyl	74.7		24.5-139		%REC	1	5/19/2015 10:16:14 PM	19270
Surr: 4-Terphenyl-d14	65.8		29.4-129		%REC	1	5/19/2015 10:16:14 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.0154	0.000621	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Toluene	0.0101	0.000287	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Ethylbenzene	0.00249	0.000463	0.00276	J	mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Xylenes, Total	0.00583	0.00164	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Methyl tert-butyl ether (MTBE)	ND	0.00116	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,2,4-Trimethylbenzene	0.00203	0.000720	0.00276	J	mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,3,5-Trimethylbenzene	0.00134	0.000483	0.00276	J	mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,2-Dichloroethane (EDC)	ND	0.000738	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,2-Dibromoethane (EDB)	ND	0.000329	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Naphthalene	ND	0.000900	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1-Methylnaphthalene	ND	0.00108	0.00551		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
2-Methylnaphthalene	ND	0.00108	0.00551		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Acetone	0.00740	0.00172	0.0138	J	mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Bromobenzene	ND	0.000767	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221

Refer to the QC Summary report and 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 10-12 (20-22')

Project: SWMU 10

Collection Date: 5/12/2015 4:00:00 PM

Lab ID: 1505617-002

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Bromodichloromethane	ND	0.000372	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Bromoform	ND	0.000714	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Bromomethane	ND	0.00163	0.00413		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
2-Butanone	0.00234	0.000882	0.0138	J	mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Carbon tetrachloride	ND	0.000499	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Chlorobenzene	ND	0.000279	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Chloroethane	ND	0.00276	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Chloroform	ND	0.000568	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Chloromethane	ND	0.000325	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
2-Chlorotoluene	ND	0.000538	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Carbon disulfide	ND	0.00125	0.0138		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
4-Chlorotoluene	ND	0.000531	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
cis-1,2-DCE	ND	0.000729	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
cis-1,3-Dichloropropene	ND	0.00276	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,2-Dibromo-3-chloropropane	ND	0.000809	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Dibromochloromethane	ND	0.000309	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Dibromomethane	ND	0.00156	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,2-Dichlorobenzene	ND	0.000611	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,3-Dichlorobenzene	ND	0.000467	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,4-Dichlorobenzene	ND	0.000433	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Dichlorodifluoromethane	ND	0.00112	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,1-Dichloroethane	ND	0.000644	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,1-Dichloroethene	ND	0.000460	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,2-Dichloropropane	ND	0.000589	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,3-Dichloropropane	ND	0.000429	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
2,2-Dichloropropane	ND	0.000479	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,1-Dichloropropene	ND	0.000505	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Hexachlorobutadiene	ND	0.000556	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Isopropylbenzene	ND	0.000639	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
4-Isopropyltoluene	ND	0.00107	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Methylene chloride	ND	0.000681	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
n-Butylbenzene	ND	0.00113	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
2-Hexanone	ND	0.000573	0.0138		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
n-Propylbenzene	ND	0.000516	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
sec-Butylbenzene	0.000964	0.000696	0.00276	J	mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Styrene	ND	0.000457	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
4-Methyl-2-pentanone	ND	0.00116	0.0138		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
tert-Butylbenzene	ND	0.000422	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,1,1,2-Tetrachloroethane	ND	0.000448	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221

Refer to the QC Summary report and 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 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-12 (20-22')

Project: SWMU 10

Collection Date: 5/12/2015 4:00:00 PM

Lab ID: 1505617-002

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
1,1,2,2-Tetrachloroethane	ND	0.000606	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Tetrachloroethene (PCE)	ND	0.000546	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
trans-1,2-DCE	ND	0.000445	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
trans-1,3-Dichloropropene	ND	0.000360	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,2,3-Trichlorobenzene	ND	0.00101	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,2,4-Trichlorobenzene	ND	0.00103	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,1,1-Trichloroethane	ND	0.000392	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,1,2-Trichloroethane	ND	0.00276	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Trichloroethene (TCE)	ND	0.000547	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Trichlorofluoromethane	ND	0.000557	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
1,2,3-Trichloropropane	ND	0.000967	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Vinyl chloride	ND	0.000315	0.00276		mg/Kg-dr	1	5/14/2015 12:44:33 PM	19221
Surr: 1,2-Dichloroethane-d4	89.5	0	70-130		%REC	1	5/14/2015 12:44:33 PM	19221
Surr: 4-Bromofluorobenzene	93.4	0	70-130		%REC	1	5/14/2015 12:44:33 PM	19221
Surr: Dibromofluoromethane	92.7	0	70-130		%REC	1	5/14/2015 12:44:33 PM	19221
Surr: Toluene-d8	86.5	0	70-130		%REC	1	5/14/2015 12:44:33 PM	19221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	2.4	0.90	3.6	J	mg/Kg-dr	1	5/14/2015 4:54:30 PM	R26209
Surr: BFB	106	0	67.4-150		%REC	1	5/14/2015 4:54:30 PM	R26209

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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 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-13 (2-4')

Project: SWMU 10

Collection Date: 5/13/2015 9:15:00 AM

Lab ID: 1505617-003

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 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	5/15/2015 10:18:19 AM	19228
Motor Oil Range Organics (MRO)	ND	48	48		mg/Kg-dr	1	5/15/2015 10:18:19 AM	19228
Surr: DNOP	109	0	57.9-140		%REC	1	5/15/2015 10:18:19 AM	19228
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	6.0	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	ND	0.0030	0.034		mg/Kg-dr	1	5/31/2015 10:46:31 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.4	2.7		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Arsenic	1.3	0.32	2.7	J	mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Barium	260	0.032	0.11		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Beryllium	0.71	0.0080	0.16		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Cadmium	ND	0.030	0.11		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Chromium	7.8	0.065	0.33		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Cobalt	4.0	0.041	0.33		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Iron	15000	65	270		mg/Kg-dr	100	5/20/2015 10:39:17 AM	19280
Lead	2.9	0.12	0.27		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Manganese	390	0.13	0.22		mg/Kg-dr	2	5/20/2015 12:51:54 PM	19280
Nickel	6.5	0.14	0.54		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Selenium	ND	1.7	2.7		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Silver	ND	0.032	0.27		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Vanadium	19	0.036	2.7		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
Zinc	13	0.70	2.7		mg/Kg-dr	1	5/20/2015 12:50:30 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.13	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Acenaphthylene	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Aniline	ND	0.092	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Anthracene	ND	0.090	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Azobenzene	ND	0.12	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Benz(a)anthracene	ND	0.083	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Benzo(a)pyrene	ND	0.12	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Benzo(b)fluoranthene	ND	0.10	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Benzo(g,h,i)perylene	ND	0.12	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Benzo(k)fluoranthene	ND	0.12	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Benzoic acid	ND	0.060	0.53		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Benzyl alcohol	ND	0.094	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Bis(2-chloroethoxy)methane	ND	0.10	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270

Refer to the QC Summary report and 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 10-13 (2-4')

Project: SWMU 10

Collection Date: 5/13/2015 9:15:00 AM

Lab ID: 1505617-003

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Bis(2-chloroethyl)ether	ND	0.10	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.081	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.12	0.53		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
4-Bromophenyl phenyl ether	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Butyl benzyl phthalate	ND	0.13	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Carbazole	ND	0.098	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
4-Chloro-3-methylphenol	ND	0.10	0.53		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
4-Chloroaniline	ND	0.098	0.53		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2-Chloronaphthalene	ND	0.11	0.26		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2-Chlorophenol	ND	0.098	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
4-Chlorophenyl phenyl ether	ND	0.16	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Chrysene	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Di-n-butyl phthalate	ND	0.12	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Di-n-octyl phthalate	ND	0.12	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Dibenz(a,h)anthracene	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Dibenzofuran	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
1,2-Dichlorobenzene	ND	0.10	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
1,3-Dichlorobenzene	ND	0.094	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
1,4-Dichlorobenzene	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
3,3'-Dichlorobenzidine	ND	0.081	0.26		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Diethyl phthalate	ND	0.12	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Dimethyl phthalate	ND	0.097	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2,4-Dichlorophenol	ND	0.11	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2,4-Dimethylphenol	ND	0.083	0.32		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.057	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2,4-Dinitrophenol	ND	0.044	0.53		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2,4-Dinitrotoluene	ND	0.094	0.53		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2,6-Dinitrotoluene	ND	0.12	0.53		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Fluoranthene	ND	0.13	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Fluorene	ND	0.14	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Hexachlorobenzene	ND	0.10	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Hexachlorobutadiene	ND	0.10	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Hexachlorocyclopentadiene	ND	0.073	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Hexachloroethane	ND	0.094	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.12	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Isophorone	ND	0.11	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
1-Methylnaphthalene	ND	0.098	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2-Methylnaphthalene	ND	0.096	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2-Methylphenol	ND	0.11	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270

Refer to the QC Summary report and 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 10-13 (2-4')

Project: SWMU 10

Collection Date: 5/13/2015 9:15:00 AM

Lab ID: 1505617-003

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
N-Nitrosodi-n-propylamine	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
N-Nitrosodiphenylamine	ND	0.094	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Naphthalene	ND	0.10	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2-Nitroaniline	ND	0.12	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
3-Nitroaniline	ND	0.10	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
4-Nitroaniline	ND	0.095	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Nitrobenzene	ND	0.11	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2-Nitrophenol	ND	0.095	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
4-Nitrophenol	ND	0.091	0.26		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Pentachlorophenol	ND	0.066	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Phenanthrene	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Phenol	ND	0.094	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Pyrene	ND	0.14	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Pyridine	ND	0.089	0.42		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
1,2,4-Trichlorobenzene	ND	0.11	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2,4,5-Trichlorophenol	ND	0.12	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
2,4,6-Trichlorophenol	ND	0.12	0.21		mg/Kg-dr	1	5/19/2015 10:44:10 PM	19270
Surr: 2-Fluorophenol	66.4		26.4-129		%REC	1	5/19/2015 10:44:10 PM	19270
Surr: Phenol-d5	70.0		34.8-118		%REC	1	5/19/2015 10:44:10 PM	19270
Surr: 2,4,6-Tribromophenol	74.7		26.8-128		%REC	1	5/19/2015 10:44:10 PM	19270
Surr: Nitrobenzene-d5	70.4		35.8-124		%REC	1	5/19/2015 10:44:10 PM	19270
Surr: 2-Fluorobiphenyl	69.0		24.5-139		%REC	1	5/19/2015 10:44:10 PM	19270
Surr: 4-Terphenyl-d14	67.3		29.4-129		%REC	1	5/19/2015 10:44:10 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.000909	0.000561	0.00249	J	mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Toluene	0.000885	0.000259	0.00249	J	mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Ethylbenzene	ND	0.000419	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Xylenes, Total	ND	0.00149	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Methyl tert-butyl ether (MTBE)	ND	0.00104	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,2,4-Trimethylbenzene	ND	0.000651	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,3,5-Trimethylbenzene	ND	0.000437	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,2-Dichloroethane (EDC)	ND	0.000668	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,2-Dibromoethane (EDB)	ND	0.000298	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Naphthalene	ND	0.000814	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1-Methylnaphthalene	ND	0.000979	0.00498		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
2-Methylnaphthalene	ND	0.000974	0.00498		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Acetone	0.0451	0.00156	0.0125		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Bromobenzene	ND	0.000693	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221

Refer to the QC Summary report and 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 10-13 (2-4')

Project: SWMU 10

Collection Date: 5/13/2015 9:15:00 AM

Lab ID: 1505617-003

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Bromodichloromethane	ND	0.000337	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Bromoform	ND	0.000646	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Bromomethane	ND	0.00147	0.00374		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
2-Butanone	0.00424	0.000798	0.0125	J	mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Carbon tetrachloride	ND	0.000451	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Chlorobenzene	ND	0.000253	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Chloroethane	ND	0.00249	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Chloroform	ND	0.000513	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Chloromethane	ND	0.000294	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
2-Chlorotoluene	ND	0.000486	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Carbon disulfide	ND	0.00113	0.0125		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
4-Chlorotoluene	ND	0.000480	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
cis-1,2-DCE	ND	0.000659	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
cis-1,3-Dichloropropene	ND	0.00249	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,2-Dibromo-3-chloropropane	ND	0.000732	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Dibromochloromethane	ND	0.000279	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Dibromomethane	ND	0.00141	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,2-Dichlorobenzene	ND	0.000553	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,3-Dichlorobenzene	ND	0.000422	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,4-Dichlorobenzene	ND	0.000391	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Dichlorodifluoromethane	ND	0.00102	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,1-Dichloroethane	ND	0.000582	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,1-Dichloroethene	ND	0.000416	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,2-Dichloropropane	ND	0.000532	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,3-Dichloropropane	ND	0.000388	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
2,2-Dichloropropane	ND	0.000433	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,1-Dichloropropene	ND	0.000456	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Hexachlorobutadiene	ND	0.000503	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Isopropylbenzene	ND	0.000578	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
4-Isopropyltoluene	ND	0.000967	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Methylene chloride	0.000685	0.000616	0.00249	J	mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
n-Butylbenzene	ND	0.00102	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
2-Hexanone	0.000962	0.000518	0.0125	J	mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
n-Propylbenzene	ND	0.000466	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
sec-Butylbenzene	ND	0.000629	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Styrene	ND	0.000413	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
4-Methyl-2-pentanone	ND	0.00105	0.0125		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
tert-Butylbenzene	ND	0.000382	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,1,1,2-Tetrachloroethane	ND	0.000405	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221

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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 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-13 (2-4')

Project: SWMU 10

Collection Date: 5/13/2015 9:15:00 AM

Lab ID: 1505617-003

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
1,1,2,2-Tetrachloroethane	ND	0.000548	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Tetrachloroethene (PCE)	ND	0.000494	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
trans-1,2-DCE	ND	0.000403	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
trans-1,3-Dichloropropene	ND	0.000326	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,2,3-Trichlorobenzene	ND	0.000912	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,2,4-Trichlorobenzene	ND	0.000934	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,1,1-Trichloroethane	ND	0.000354	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,1,2-Trichloroethane	ND	0.00249	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Trichloroethene (TCE)	ND	0.000495	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Trichlorofluoromethane	ND	0.000503	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
1,2,3-Trichloropropane	ND	0.000875	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Vinyl chloride	ND	0.000285	0.00249		mg/Kg-dr	1	5/14/2015 1:14:29 PM	19221
Surr: 1,2-Dichloroethane-d4	91.4	0	70-130		%REC	1	5/14/2015 1:14:29 PM	19221
Surr: 4-Bromofluorobenzene	109	0	70-130		%REC	1	5/14/2015 1:14:29 PM	19221
Surr: Dibromofluoromethane	92.4	0	70-130		%REC	1	5/14/2015 1:14:29 PM	19221
Surr: Toluene-d8	92.5	0	70-130		%REC	1	5/14/2015 1:14:29 PM	19221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.81	3.2		mg/Kg-dr	1	5/14/2015 5:23:16 PM	R26209
Surr: BFB	114	0	67.4-150		%REC	1	5/14/2015 5:23:16 PM	R26209

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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 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-13 (6-8')

Project: SWMU 10

Collection Date: 5/13/2015 9:25:00 AM

Lab ID: 1505617-004

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 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)	2300	55	100		mg/Kg-dr	10	5/15/2015 10:39:26 AM	19228
Motor Oil Range Organics (MRO)	ND	500	500		mg/Kg-dr	10	5/15/2015 10:39:26 AM	19228
Surr: DNOP	0	0	57.9-140	S	%REC	10	5/15/2015 10:39:26 AM	19228
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	15	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	ND	0.0034	0.039		mg/Kg-dr	1	5/31/2015 10:48:18 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	3.1	6.0		mg/Kg-dr	2	5/20/2015 12:54:24 PM	19280
Arsenic	1.3	0.35	3.0	J	mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Barium	200	0.036	0.12		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Beryllium	1.2	0.0088	0.18		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Cadmium	ND	0.033	0.12		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Chromium	11	0.072	0.36		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Cobalt	5.9	0.045	0.36		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Iron	18000	72	300		mg/Kg-dr	100	5/20/2015 10:44:51 AM	19280
Lead	5.2	0.13	0.30		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Manganese	190	0.070	0.12		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Nickel	11	0.15	0.60		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Selenium	ND	1.8	3.0		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Silver	ND	0.036	0.30		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Vanadium	19	0.040	3.0		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
Zinc	17	0.77	3.0		mg/Kg-dr	1	5/20/2015 12:53:08 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.14	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Acenaphthylene	ND	0.12	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Aniline	ND	0.10	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Azobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Benz(a)anthracene	ND	0.093	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Benzo(a)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Benzo(g,h,i)perylene	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Benzo(k)fluoranthene	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Benzoic acid	ND	0.067	0.59		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Benzyl alcohol	ND	0.10	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270

Refer to the QC Summary report and 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 10-13 (6-8')

Project: SWMU 10

Collection Date: 5/13/2015 9:25:00 AM

Lab ID: 1505617-004

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 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	5/21/2015 5:22:36 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.090	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
4-Bromophenyl phenyl ether	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Butyl benzyl phthalate	ND	0.14	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Carbazole	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2-Chloronaphthalene	ND	0.13	0.30		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2-Chlorophenol	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
4-Chlorophenyl phenyl ether	ND	0.18	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Chrysene	ND	0.12	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Di-n-butyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Di-n-octyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Dibenz(a,h)anthracene	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Dibenzofuran	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
1,3-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
1,4-Dichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
3,3'-Dichlorobenzidine	ND	0.091	0.30		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Diethyl phthalate	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Dimethyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2,4-Dichlorophenol	ND	0.12	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2,4-Dimethylphenol	ND	0.093	0.35		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.064	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2,4-Dinitrotoluene	ND	0.11	0.59		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Fluoranthene	ND	0.14	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Fluorene	1.1	0.16	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Hexachlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Hexachlorobutadiene	ND	0.12	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Hexachlorocyclopentadiene	ND	0.082	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Hexachloroethane	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Isophorone	ND	0.13	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
1-Methylnaphthalene	12	0.55	1.2		mg/Kg-dr	5	5/21/2015 5:50:19 PM	19270
2-Methylnaphthalene	21	0.54	1.2		mg/Kg-dr	5	5/21/2015 5:50:19 PM	19270
2-Methylphenol	2.2	0.12	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270

Refer to the QC Summary report and 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 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-13 (6-8')

Project: SWMU 10

Collection Date: 5/13/2015 9:25:00 AM

Lab ID: 1505617-004

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	0.79	0.12	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
N-Nitrosodiphenylamine	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Naphthalene	3.9	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
4-Nitroaniline	ND	0.11	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2-Nitrophenol	ND	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
4-Nitrophenol	ND	0.10	0.30		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Pentachlorophenol	ND	0.074	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Phenanthrene	2.3	0.12	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Phenol	0.91	0.11	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Pyrene	ND	0.15	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Pyridine	ND	0.099	0.47		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
1,2,4-Trichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2,4,5-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
2,4,6-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/21/2015 5:22:36 PM	19270
Surr: 2-Fluorophenol	61.6		26.4-129		%REC	1	5/21/2015 5:22:36 PM	19270
Surr: Phenol-d5	61.3		34.8-118		%REC	1	5/21/2015 5:22:36 PM	19270
Surr: 2,4,6-Tribromophenol	29.6		26.8-128		%REC	1	5/21/2015 5:22:36 PM	19270
Surr: Nitrobenzene-d5	69.1		35.8-124		%REC	1	5/21/2015 5:22:36 PM	19270
Surr: 2-Fluorobiphenyl	57.5		24.5-139		%REC	1	5/21/2015 5:22:36 PM	19270
Surr: 4-Terphenyl-d14	58.2		29.4-129		%REC	1	5/21/2015 5:22:36 PM	19270
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	ND	0.0050	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Toluene	0.11	0.0040	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Ethylbenzene	1.3	0.0031	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Methyl tert-butyl ether (MTBE)	ND	0.0048	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,2,4-Trimethylbenzene	5.2	0.017	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
1,3,5-Trimethylbenzene	1.9	0.022	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
1,2-Dichloroethane (EDC)	ND	0.013	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,2-Dibromoethane (EDB)	ND	0.0027	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Naphthalene	3.8	0.080	0.67		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
1-Methylnaphthalene	11	0.20	1.3		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
2-Methylnaphthalene	20	0.22	1.3		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
Acetone	ND	0.025	0.51		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Bromobenzene	ND	0.025	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
Bromodichloromethane	ND	0.0028	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209

Refer to the QC Summary report and 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 10-13 (6-8')

Project: SWMU 10

Collection Date: 5/13/2015 9:25:00 AM

Lab ID: 1505617-004

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Bromoform	ND	0.027	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
Bromomethane	0.023	0.0065	0.10	J	mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
2-Butanone	ND	0.022	0.34		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Carbon disulfide	ND	0.024	0.34		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Carbon tetrachloride	ND	0.0033	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Chlorobenzene	ND	0.0026	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Chloroethane	ND	0.026	0.067		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Chloroform	ND	0.0035	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Chloromethane	ND	0.0039	0.10		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
2-Chlorotoluene	ND	0.038	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
4-Chlorotoluene	ND	0.026	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
cis-1,2-DCE	ND	0.0043	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
cis-1,3-Dichloropropene	ND	0.0023	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,2-Dibromo-3-chloropropane	ND	0.058	0.67		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
Dibromochloromethane	ND	0.0025	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Dibromomethane	ND	0.0036	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,2-Dichlorobenzene	ND	0.020	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
1,3-Dichlorobenzene	ND	0.040	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
1,4-Dichlorobenzene	ND	0.042	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
Dichlorodifluoromethane	ND	0.0085	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,1-Dichloroethane	ND	0.013	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,1-Dichloroethene	ND	0.0023	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,2-Dichloropropane	ND	0.0019	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,3-Dichloropropane	ND	0.0046	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
2,2-Dichloropropane	ND	0.0049	0.067		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,1-Dichloropropene	ND	0.0050	0.067		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Hexachlorobutadiene	ND	0.047	0.67		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
2-Hexanone	ND	0.0083	0.34		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Isopropylbenzene	0.67	0.028	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
4-Isopropyltoluene	0.37	0.024	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
4-Methyl-2-pentanone	ND	0.0059	0.34		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Methylene chloride	ND	0.013	0.10		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
n-Butylbenzene	0.58	0.029	1.0	J	mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
n-Propylbenzene	0.86	0.025	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
sec-Butylbenzene	0.36	0.048	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
Styrene	ND	0.0062	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
tert-Butylbenzene	ND	0.039	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
1,1,1,2-Tetrachloroethane	ND	0.0028	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,1,2,2-Tetrachloroethane	ND	0.041	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221

Refer to the QC Summary report and 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 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-13 (6-8')

Project: SWMU 10

Collection Date: 5/13/2015 9:25:00 AM

Lab ID: 1505617-004

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Tetrachloroethene (PCE)	ND	0.0029	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
trans-1,2-DCE	ND	0.0022	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
trans-1,3-Dichloropropene	ND	0.0061	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,2,3-Trichlorobenzene	ND	0.072	0.67		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
1,2,4-Trichlorobenzene	ND	0.062	0.34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
1,1,1-Trichloroethane	ND	0.0051	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,1,2-Trichloroethane	ND	0.0041	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Trichloroethene (TCE)	ND	0.0033	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Trichlorofluoromethane	ND	0.010	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
1,2,3-Trichloropropane	ND	0.057	0.67		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
Vinyl chloride	ND	0.013	0.034		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Xylenes, Total	5.0	0.0093	0.067		mg/Kg-dr	1	5/14/2015 2:01:32 PM	R26209
Surr: Dibromofluoromethane	92.8		70-130		%REC	1	5/14/2015 2:01:32 PM	R26209
Surr: 1,2-Dichloroethane-d4	110		70-130		%REC	1	5/14/2015 2:01:32 PM	R26209
Surr: Toluene-d8	83.2		70-130		%REC	1	5/14/2015 2:01:32 PM	R26209
Surr: 4-Bromofluorobenzene	73.0		70-130		%REC	10	5/15/2015 12:48:52 PM	R26221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	320	8.5	34		mg/Kg-dr	10	5/15/2015 12:48:52 PM	R26221
Surr: BFB	101	0	67.4-150		%REC	10	5/15/2015 12:48:52 PM	R26221

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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 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-13 (18-20')

Project: SWMU 10

Collection Date: 5/13/2015 9:35:00 AM

Lab ID: 1505617-005

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 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	5/15/2015 11:00:42 AM	19228
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg-dr	1	5/15/2015 11:00:42 AM	19228
Surr: DNOP	101	0	57.9-140		%REC	1	5/15/2015 11:00:42 AM	19228
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	9.1	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	ND	0.0031	0.036		mg/Kg-dr	1	5/31/2015 10:50:07 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	2.8	5.4		mg/Kg-dr	2	5/20/2015 12:57:00 PM	19280
Arsenic	1.2	0.32	2.7	J	mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Barium	110	0.032	0.11		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Beryllium	1.1	0.0080	0.16		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Cadmium	ND	0.030	0.11		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Chromium	15	0.065	0.32		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Cobalt	6.3	0.041	0.32		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Iron	23000	65	270		mg/Kg-dr	100	5/20/2015 10:46:12 AM	19280
Lead	2.3	0.12	0.27		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Manganese	430	0.13	0.22		mg/Kg-dr	2	5/20/2015 12:57:00 PM	19280
Nickel	15	0.14	0.54		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Selenium	ND	1.7	2.7		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Silver	ND	0.032	0.27		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Vanadium	15	0.036	2.7		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
Zinc	21	0.70	2.7		mg/Kg-dr	1	5/20/2015 12:55:40 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Aniline	ND	0.095	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Anthracene	ND	0.093	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Azobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Benz(a)anthracene	ND	0.086	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Benzo(a)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Benzo(b)fluoranthene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Benzo(g,h,i)perylene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Benzo(k)fluoranthene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Benzoic acid	ND	0.062	0.55		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Benzyl alcohol	ND	0.097	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Bis(2-chloroethoxy)methane	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270

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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.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-13 (18-20')

Project: SWMU 10

Collection Date: 5/13/2015 9:35:00 AM

Lab ID: 1505617-005

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 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	5/19/2015 11:12:10 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.084	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.12	0.55		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Butyl benzyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
4-Chloro-3-methylphenol	ND	0.11	0.55		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
4-Chloroaniline	ND	0.10	0.55		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2-Chloronaphthalene	ND	0.12	0.27		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
4-Chlorophenyl phenyl ether	ND	0.16	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Di-n-butyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Di-n-octyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
1,2-Dichlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
1,3-Dichlorobenzene	ND	0.097	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
1,4-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
3,3'-Dichlorobenzidine	ND	0.084	0.27		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Diethyl phthalate	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2,4-Dichlorophenol	ND	0.11	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2,4-Dimethylphenol	ND	0.086	0.33		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.060	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2,4-Dinitrophenol	ND	0.046	0.55		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2,4-Dinitrotoluene	ND	0.098	0.55		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2,6-Dinitrotoluene	ND	0.12	0.55		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Hexachlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Hexachlorocyclopentadiene	ND	0.076	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Hexachloroethane	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Isophorone	ND	0.12	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2-Methylphenol	ND	0.11	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270

Refer to the QC Summary report and 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 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-13 (18-20')

Project: SWMU 10

Collection Date: 5/13/2015 9:35:00 AM

Lab ID: 1505617-005

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
N-Nitrosodiphenylamine	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Naphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2-Nitroaniline	ND	0.12	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
4-Nitroaniline	ND	0.098	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Nitrobenzene	ND	0.11	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2-Nitrophenol	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
4-Nitrophenol	ND	0.094	0.27		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Pentachlorophenol	ND	0.068	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Phenanthrene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Phenol	ND	0.098	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Pyridine	ND	0.092	0.44		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
2,4,6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/19/2015 11:12:10 PM	19270
Surr: 2-Fluorophenol	64.5		26.4-129		%REC	1	5/19/2015 11:12:10 PM	19270
Surr: Phenol-d5	67.6		34.8-118		%REC	1	5/19/2015 11:12:10 PM	19270
Surr: 2,4,6-Tribromophenol	67.0		26.8-128		%REC	1	5/19/2015 11:12:10 PM	19270
Surr: Nitrobenzene-d5	67.1		35.8-124		%REC	1	5/19/2015 11:12:10 PM	19270
Surr: 2-Fluorobiphenyl	65.2		24.5-139		%REC	1	5/19/2015 11:12:10 PM	19270
Surr: 4-Terphenyl-d14	58.3		29.4-129		%REC	1	5/19/2015 11:12:10 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.0194	0.000509	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Toluene	0.00936	0.000235	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Ethylbenzene	0.00216	0.000380	0.00226	J	mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Xylenes, Total	0.00769	0.00135	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Methyl tert-butyl ether (MTBE)	ND	0.000947	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,2,4-Trimethylbenzene	0.00230	0.000590	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,3,5-Trimethylbenzene	0.00154	0.000396	0.00226	J	mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,2-Dichloroethane (EDC)	ND	0.000605	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,2-Dibromoethane (EDB)	ND	0.000270	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Naphthalene	0.000791	0.000738	0.00226	J	mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1-Methylnaphthalene	ND	0.000887	0.00452		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
2-Methylnaphthalene	ND	0.000883	0.00452		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Acetone	0.00217	0.00141	0.0113	J	mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Bromobenzene	ND	0.000629	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221

Refer to the QC Summary report and 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 10-13 (18-20')

Project: SWMU 10

Collection Date: 5/13/2015 9:35:00 AM

Lab ID: 1505617-005

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Bromodichloromethane	ND	0.000305	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Bromoform	ND	0.000585	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Bromomethane	ND	0.00134	0.00339		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
2-Butanone	0.00181	0.000723	0.0113	J	mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Carbon tetrachloride	ND	0.000409	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Chlorobenzene	ND	0.000229	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Chloroethane	ND	0.00226	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Chloroform	ND	0.000465	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Chloromethane	ND	0.000266	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
2-Chlorotoluene	ND	0.000441	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Carbon disulfide	ND	0.00102	0.0113		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
4-Chlorotoluene	ND	0.000435	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
cis-1,2-DCE	ND	0.000598	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
cis-1,3-Dichloropropene	ND	0.00226	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,2-Dibromo-3-chloropropane	ND	0.000664	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Dibromochloromethane	ND	0.000253	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Dibromomethane	ND	0.00128	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,2-Dichlorobenzene	ND	0.000501	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,3-Dichlorobenzene	ND	0.000383	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,4-Dichlorobenzene	ND	0.000355	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Dichlorodifluoromethane	ND	0.000922	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,1-Dichloroethane	ND	0.000528	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,1-Dichloroethene	ND	0.000377	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,2-Dichloropropane	ND	0.000483	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,3-Dichloropropane	ND	0.000352	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
2,2-Dichloropropane	ND	0.000393	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,1-Dichloropropene	ND	0.000414	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Hexachlorobutadiene	ND	0.000456	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Isopropylbenzene	ND	0.000524	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
4-Isopropyltoluene	ND	0.000877	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Methylene chloride	0.000655	0.000558	0.00226	J	mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
n-Butylbenzene	ND	0.000928	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
2-Hexanone	ND	0.000470	0.0113		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
n-Propylbenzene	ND	0.000423	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
sec-Butylbenzene	0.000813	0.000571	0.00226	J	mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Styrene	ND	0.000374	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
4-Methyl-2-pentanone	ND	0.000954	0.0113		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
tert-Butylbenzene	ND	0.000346	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,1,1,2-Tetrachloroethane	ND	0.000368	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221

Refer to the QC Summary report and 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 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-13 (18-20')

Project: SWMU 10

Collection Date: 5/13/2015 9:35:00 AM

Lab ID: 1505617-005

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
1,1,2,2-Tetrachloroethane	ND	0.000497	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Tetrachloroethene (PCE)	ND	0.000448	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
trans-1,2-DCE	ND	0.000365	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
trans-1,3-Dichloropropene	ND	0.000295	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,2,3-Trichlorobenzene	ND	0.000827	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,2,4-Trichlorobenzene	ND	0.000847	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,1,1-Trichloroethane	ND	0.000321	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,1,2-Trichloroethane	ND	0.00226	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Trichloroethene (TCE)	ND	0.000449	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Trichlorofluoromethane	ND	0.000456	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
1,2,3-Trichloropropane	ND	0.000793	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Vinyl chloride	ND	0.000258	0.00226		mg/Kg-dr	1	5/14/2015 1:43:49 PM	19221
Surr: 1,2-Dichloroethane-d4	90.1	0	70-130		%REC	1	5/14/2015 1:43:49 PM	19221
Surr: 4-Bromofluorobenzene	98.3	0	70-130		%REC	1	5/14/2015 1:43:49 PM	19221
Surr: Dibromofluoromethane	93.3	0	70-130		%REC	1	5/14/2015 1:43:49 PM	19221
Surr: Toluene-d8	86.7	0	70-130		%REC	1	5/14/2015 1:43:49 PM	19221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.93	3.7		mg/Kg-dr	1	5/14/2015 5:51:59 PM	R26209
Surr: BFB	106	0	67.4-150		%REC	1	5/14/2015 5:51:59 PM	R26209

Refer to the QC Summary report and 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 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-15 (2-4')

Project: SWMU 10

Collection Date: 5/13/2015 11:15:00 AM

Lab ID: 1505617-006

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 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	5/15/2015 11:44:41 AM	19228
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg-dr	1	5/15/2015 11:44:41 AM	19228
Surr: DNOP	103	0	57.9-140		%REC	1	5/15/2015 11:44:41 AM	19228
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	16	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	ND	0.0033	0.038		mg/Kg-dr	1	5/31/2015 10:55:38 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.6	3.1		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Arsenic	1.1	0.36	3.1	J	mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Barium	52	0.037	0.12		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Beryllium	1.0	0.0091	0.18		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Cadmium	ND	0.034	0.12		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Chromium	9.2	0.074	0.37		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Cobalt	4.7	0.047	0.37		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Iron	15000	74	310		mg/Kg-dr	100	5/20/2015 10:47:34 AM	19280
Lead	5.1	0.13	0.31		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Manganese	490	0.14	0.25		mg/Kg-dr	2	5/20/2015 12:59:37 PM	19280
Nickel	8.7	0.16	0.62		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Selenium	ND	1.9	3.1		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Silver	ND	0.037	0.31		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Vanadium	17	0.041	3.1		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
Zinc	15	0.79	3.1		mg/Kg-dr	1	5/20/2015 12:58:14 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.14	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Acenaphthylene	ND	0.12	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Aniline	ND	0.10	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Azobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Benz(a)anthracene	ND	0.093	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Benzo(a)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Benzo(g,h,i)perylene	ND	0.14	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Benzo(k)fluoranthene	ND	0.13	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Benzoic acid	ND	0.068	0.59		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Benzyl alcohol	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270

Refer to the QC Summary report and 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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	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-15 (2-4')

Project: SWMU 10

Collection Date: 5/13/2015 11:15:00 AM

Lab ID: 1505617-006

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 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	5/19/2015 11:39:50 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.091	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
4-Bromophenyl phenyl ether	ND	0.13	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Butyl benzyl phthalate	ND	0.14	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Carbazole	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2-Chloronaphthalene	ND	0.13	0.30		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2-Chlorophenol	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
4-Chlorophenyl phenyl ether	ND	0.18	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Chrysene	ND	0.12	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Di-n-butyl phthalate	ND	0.13	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Di-n-octyl phthalate	ND	0.13	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Dibenz(a,h)anthracene	ND	0.13	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Dibenzofuran	ND	0.13	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
1,3-Dichlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
1,4-Dichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
3,3'-Dichlorobenzidine	ND	0.091	0.30		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Diethyl phthalate	ND	0.13	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Dimethyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2,4-Dichlorophenol	ND	0.12	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2,4-Dimethylphenol	ND	0.093	0.36		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.065	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2,4-Dinitrotoluene	ND	0.11	0.59		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Fluoranthene	ND	0.14	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Fluorene	ND	0.16	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Hexachlorobenzene	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Hexachlorobutadiene	ND	0.12	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Hexachlorocyclopentadiene	ND	0.082	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Hexachloroethane	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Isophorone	ND	0.13	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
1-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2-Methylnaphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2-Methylphenol	ND	0.12	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270

Refer to the QC Summary report and 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 10-15 (2-4')

Project: SWMU 10

Collection Date: 5/13/2015 11:15:00 AM

Lab ID: 1505617-006

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 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	5/19/2015 11:39:50 PM	19270
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
N-Nitrosodiphenylamine	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Naphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2-Nitroaniline	ND	0.14	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
4-Nitroaniline	ND	0.11	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Nitrobenzene	ND	0.12	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2-Nitrophenol	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
4-Nitrophenol	ND	0.10	0.30		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Pentachlorophenol	ND	0.074	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Phenanthrene	ND	0.12	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Phenol	ND	0.11	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Pyrene	ND	0.15	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Pyridine	ND	0.10	0.48		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
1,2,4-Trichlorobenzene	ND	0.12	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2,4,5-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
2,4,6-Trichlorophenol	ND	0.14	0.24		mg/Kg-dr	1	5/19/2015 11:39:50 PM	19270
Surr: 2-Fluorophenol	87.1		26.4-129		%REC	1	5/19/2015 11:39:50 PM	19270
Surr: Phenol-d5	87.6		34.8-118		%REC	1	5/19/2015 11:39:50 PM	19270
Surr: 2,4,6-Tribromophenol	85.4		26.8-128		%REC	1	5/19/2015 11:39:50 PM	19270
Surr: Nitrobenzene-d5	92.0		35.8-124		%REC	1	5/19/2015 11:39:50 PM	19270
Surr: 2-Fluorobiphenyl	81.8		24.5-139		%REC	1	5/19/2015 11:39:50 PM	19270
Surr: 4-Terphenyl-d14	68.4		29.4-129		%REC	1	5/19/2015 11:39:50 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.00119	0.000432	0.00192	J	mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Toluene	0.00109	0.000199	0.00192	J	mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Ethylbenzene	0.000345	0.000322	0.00192	J	mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Xylenes, Total	0.00141	0.00114	0.00192	J	mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Methyl tert-butyl ether (MTBE)	0.00478	0.000803	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,2,4-Trimethylbenzene	ND	0.000501	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,3,5-Trimethylbenzene	ND	0.000336	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,2-Dichloroethane (EDC)	ND	0.000513	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,2-Dibromoethane (EDB)	ND	0.000229	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Naphthalene	ND	0.000626	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1-Methylnaphthalene	ND	0.000752	0.00383		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
2-Methylnaphthalene	ND	0.000749	0.00383		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Acetone	0.00666	0.00120	0.00958	J	mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Bromobenzene	ND	0.000533	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221

Refer to the QC Summary report and 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 10-15 (2-4')

Project: SWMU 10

Collection Date: 5/13/2015 11:15:00 AM

Lab ID: 1505617-006

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 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	5/14/2015 2:13:08 PM	19221
Bromoform	ND	0.000496	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Bromomethane	ND	0.00113	0.00287		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
2-Butanone	ND	0.000614	0.00958		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Carbon tetrachloride	ND	0.000347	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Chlorobenzene	ND	0.000194	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Chloroethane	ND	0.00192	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Chloroform	ND	0.000395	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Chloromethane	ND	0.000226	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
2-Chlorotoluene	ND	0.000374	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Carbon disulfide	0.000968	0.000867	0.00958	J	mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
4-Chlorotoluene	ND	0.000369	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
cis-1,2-DCE	ND	0.000507	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
cis-1,3-Dichloropropene	ND	0.00192	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,2-Dibromo-3-chloropropane	ND	0.000563	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Dibromochloromethane	ND	0.000215	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Dibromomethane	ND	0.00109	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,2-Dichlorobenzene	ND	0.000425	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,3-Dichlorobenzene	ND	0.000325	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,4-Dichlorobenzene	ND	0.000301	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Dichlorodifluoromethane	ND	0.000782	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,1-Dichloroethane	ND	0.000448	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,1-Dichloroethene	ND	0.000320	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,2-Dichloropropane	ND	0.000409	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,3-Dichloropropane	ND	0.000298	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
2,2-Dichloropropane	ND	0.000333	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,1-Dichloropropene	ND	0.000351	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Hexachlorobutadiene	ND	0.000387	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Isopropylbenzene	ND	0.000445	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
4-Isopropyltoluene	ND	0.000744	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Methylene chloride	0.000498	0.000473	0.00192	J	mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
n-Butylbenzene	ND	0.000787	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
2-Hexanone	ND	0.000399	0.00958		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
n-Propylbenzene	ND	0.000359	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
sec-Butylbenzene	0.000632	0.000484	0.00192	J	mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Styrene	ND	0.000318	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
4-Methyl-2-pentanone	ND	0.000809	0.00958		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
tert-Butylbenzene	ND	0.000294	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,1,1,2-Tetrachloroethane	ND	0.000312	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221

Refer to the QC Summary report and 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 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-15 (2-4')

Project: SWMU 10

Collection Date: 5/13/2015 11:15:00 AM

Lab ID: 1505617-006

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 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	5/14/2015 2:13:08 PM	19221
Tetrachloroethene (PCE)	ND	0.000380	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
trans-1,2-DCE	ND	0.000310	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
trans-1,3-Dichloropropene	ND	0.000251	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,2,3-Trichlorobenzene	ND	0.000701	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,2,4-Trichlorobenzene	ND	0.000718	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,1,1-Trichloroethane	ND	0.000273	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,1,2-Trichloroethane	ND	0.00192	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Trichloroethene (TCE)	ND	0.000381	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Trichlorofluoromethane	ND	0.000387	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
1,2,3-Trichloropropane	ND	0.000673	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Vinyl chloride	ND	0.000219	0.00192		mg/Kg-dr	1	5/14/2015 2:13:08 PM	19221
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%REC	1	5/14/2015 2:13:08 PM	19221
Surr: 4-Bromofluorobenzene	95.2	0	70-130		%REC	1	5/14/2015 2:13:08 PM	19221
Surr: Dibromofluoromethane	105	0	70-130		%REC	1	5/14/2015 2:13:08 PM	19221
Surr: Toluene-d8	82.0	0	70-130		%REC	1	5/14/2015 2:13:08 PM	19221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.74	3.0		mg/Kg-dr	1	5/14/2015 6:20:45 PM	R26209
Surr: BFB	110	0	67.4-150		%REC	1	5/14/2015 6:20:45 PM	R26209

Refer to the QC Summary report and 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 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-15 (4-6')

Project: SWMU 10

Collection Date: 5/13/2015 11:25:00 AM

Lab ID: 1505617-007

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 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	5.3	9.7		mg/Kg-dr	1	5/15/2015 12:05:56 PM	19228
Motor Oil Range Organics (MRO)	ND	48	48		mg/Kg-dr	1	5/15/2015 12:05:56 PM	19228
Surr: DNOP	107	0	57.9-140		%REC	1	5/15/2015 12:05:56 PM	19228
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	15	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	ND	0.0032	0.036		mg/Kg-dr	1	5/31/2015 10:58:11 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.5	2.8		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Arsenic	1.3	0.33	2.8	J	mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Barium	120	0.034	0.11		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Beryllium	1.0	0.0084	0.17		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Chromium	9.1	0.068	0.34		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Cobalt	4.6	0.043	0.34		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Iron	17000	68	280		mg/Kg-dr	100	5/20/2015 10:48:56 AM	19280
Lead	3.7	0.12	0.28		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Manganese	200	0.066	0.11		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Nickel	8.3	0.15	0.57		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Silver	ND	0.034	0.28		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Vanadium	15	0.038	2.8		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
Zinc	15	0.73	2.8		mg/Kg-dr	1	5/20/2015 1:00:52 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.14	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Acenaphthylene	ND	0.12	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Aniline	ND	0.10	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Anthracene	ND	0.10	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Azobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Benz(a)anthracene	ND	0.092	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Benzo(a)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Benzo(g,h,i)perylene	ND	0.13	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Benzo(k)fluoranthene	ND	0.13	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Benzoic acid	ND	0.067	0.59		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Benzyl alcohol	ND	0.10	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270

Refer to the QC Summary report and 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 10-15 (4-6')

Project: SWMU 10

Collection Date: 5/13/2015 11:25:00 AM

Lab ID: 1505617-007

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 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	5/20/2015 12:07:52 AM	19270
Bis(2-chloroisopropyl)ether	ND	0.090	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Bis(2-ethylhexyl)phthalate	ND	0.13	0.59		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Butyl benzyl phthalate	ND	0.14	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Carbazole	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
4-Chloro-3-methylphenol	ND	0.12	0.59		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
4-Chloroaniline	ND	0.11	0.59		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2-Chloronaphthalene	ND	0.13	0.29		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2-Chlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
4-Chlorophenyl phenyl ether	ND	0.17	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Chrysene	ND	0.12	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Di-n-butyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Di-n-octyl phthalate	ND	0.13	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Dibenz(a,h)anthracene	ND	0.13	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Dibenzofuran	ND	0.13	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
1,2-Dichlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
1,3-Dichlorobenzene	ND	0.10	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
1,4-Dichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
3,3'-Dichlorobenzidine	ND	0.090	0.29		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Diethyl phthalate	ND	0.13	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2,4-Dichlorophenol	ND	0.12	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2,4-Dimethylphenol	ND	0.092	0.35		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
4,6-Dinitro-2-methylphenol	ND	0.064	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2,4-Dinitrophenol	ND	0.049	0.59		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2,4-Dinitrotoluene	ND	0.10	0.59		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2,6-Dinitrotoluene	ND	0.13	0.59		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Fluoranthene	ND	0.14	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Fluorene	ND	0.16	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Hexachlorobenzene	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Hexachlorobutadiene	ND	0.12	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Hexachlorocyclopentadiene	ND	0.081	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Isophorone	ND	0.12	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2-Methylphenol	ND	0.12	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270

Refer to the QC Summary report and 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 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-15 (4-6')

Project: SWMU 10

Collection Date: 5/13/2015 11:25:00 AM

Lab ID: 1505617-007

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 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	5/20/2015 12:07:52 AM	19270
N-Nitrosodi-n-propylamine	ND	0.12	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
N-Nitrosodiphenylamine	ND	0.10	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
3-Nitroaniline	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
4-Nitroaniline	ND	0.11	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2-Nitrophenol	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
4-Nitrophenol	ND	0.10	0.29		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Pentachlorophenol	ND	0.073	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Phenanthrene	ND	0.12	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Phenol	ND	0.11	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Pyrene	ND	0.15	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Pyridine	ND	0.099	0.47		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2,4,5-Trichlorophenol	ND	0.14	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
2,4,6-Trichlorophenol	ND	0.14	0.23		mg/Kg-dr	1	5/20/2015 12:07:52 AM	19270
Surr: 2-Fluorophenol	71.9		26.4-129		%REC	1	5/20/2015 12:07:52 AM	19270
Surr: Phenol-d5	76.9		34.8-118		%REC	1	5/20/2015 12:07:52 AM	19270
Surr: 2,4,6-Tribromophenol	89.1		26.8-128		%REC	1	5/20/2015 12:07:52 AM	19270
Surr: Nitrobenzene-d5	68.9		35.8-124		%REC	1	5/20/2015 12:07:52 AM	19270
Surr: 2-Fluorobiphenyl	82.9		24.5-139		%REC	1	5/20/2015 12:07:52 AM	19270
Surr: 4-Terphenyl-d14	78.0		29.4-129		%REC	1	5/20/2015 12:07:52 AM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.00144	0.000385	0.00171	J	mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Toluene	0.00120	0.000178	0.00171	J	mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Ethylbenzene	0.000367	0.000287	0.00171	J	mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Xylenes, Total	0.00123	0.00102	0.00171	J	mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Methyl tert-butyl ether (MTBE)	0.00936	0.000717	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,2,4-Trimethylbenzene	ND	0.000447	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,3,5-Trimethylbenzene	ND	0.000300	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,2-Dichloroethane (EDC)	ND	0.000458	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,2-Dibromoethane (EDB)	ND	0.000204	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Naphthalene	ND	0.000558	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1-Methylnaphthalene	ND	0.000671	0.00342		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
2-Methylnaphthalene	ND	0.000668	0.00342		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Acetone	0.00320	0.00107	0.00854	J	mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Bromobenzene	ND	0.000475	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221

Refer to the QC Summary report and 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 10-15 (4-6')

Project: SWMU 10

Collection Date: 5/13/2015 11:25:00 AM

Lab ID: 1505617-007

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Bromodichloromethane	ND	0.000231	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Bromoform	ND	0.000443	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Bromomethane	ND	0.00101	0.00256		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
2-Butanone	0.00114	0.000547	0.00854	J	mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Carbon tetrachloride	ND	0.000309	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Chlorobenzene	ND	0.000173	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Chloroethane	ND	0.00171	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Chloroform	ND	0.000352	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Chloromethane	ND	0.000201	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
2-Chlorotoluene	ND	0.000334	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Carbon disulfide	ND	0.000773	0.00854		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
4-Chlorotoluene	ND	0.000329	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
cis-1,2-DCE	ND	0.000452	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
cis-1,3-Dichloropropene	ND	0.00171	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,2-Dibromo-3-chloropropane	ND	0.000502	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Dibromochloromethane	ND	0.000192	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Dibromomethane	ND	0.000970	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,2-Dichlorobenzene	ND	0.000379	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,3-Dichlorobenzene	ND	0.000290	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,4-Dichlorobenzene	ND	0.000268	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Dichlorodifluoromethane	ND	0.000698	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,1-Dichloroethane	ND	0.000399	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,1-Dichloroethene	ND	0.000285	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,2-Dichloropropane	ND	0.000365	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,3-Dichloropropane	ND	0.000266	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
2,2-Dichloropropane	ND	0.000297	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,1-Dichloropropene	ND	0.000313	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Hexachlorobutadiene	ND	0.000345	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Isopropylbenzene	ND	0.000396	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
4-Isopropyltoluene	ND	0.000663	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Methylene chloride	ND	0.000422	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
n-Butylbenzene	ND	0.000702	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
2-Hexanone	ND	0.000355	0.00854		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
n-Propylbenzene	ND	0.000320	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
sec-Butylbenzene	0.000564	0.000432	0.00171	J	mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Styrene	ND	0.000283	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
4-Methyl-2-pentanone	ND	0.000722	0.00854		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
tert-Butylbenzene	ND	0.000262	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,1,1,2-Tetrachloroethane	ND	0.000278	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221

Refer to the QC Summary report and 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 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-15 (4-6')

Project: SWMU 10

Collection Date: 5/13/2015 11:25:00 AM

Lab ID: 1505617-007

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
1,1,2,2-Tetrachloroethane	ND	0.000376	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Tetrachloroethene (PCE)	ND	0.000339	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
trans-1,2-DCE	ND	0.000276	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
trans-1,3-Dichloropropene	ND	0.000223	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,2,3-Trichlorobenzene	ND	0.000625	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,2,4-Trichlorobenzene	ND	0.000640	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,1,1-Trichloroethane	ND	0.000243	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,1,2-Trichloroethane	ND	0.00171	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Trichloroethene (TCE)	ND	0.000340	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Trichlorofluoromethane	ND	0.000345	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
1,2,3-Trichloropropane	ND	0.000600	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Vinyl chloride	ND	0.000195	0.00171		mg/Kg-dr	1	5/14/2015 2:42:39 PM	19221
Surr: 1,2-Dichloroethane-d4	97.3	0	70-130		%REC	1	5/14/2015 2:42:39 PM	19221
Surr: 4-Bromofluorobenzene	92.1	0	70-130		%REC	1	5/14/2015 2:42:39 PM	19221
Surr: Dibromofluoromethane	100	0	70-130		%REC	1	5/14/2015 2:42:39 PM	19221
Surr: Toluene-d8	86.5	0	70-130		%REC	1	5/14/2015 2:42:39 PM	19221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	2.6	10		mg/Kg-dr	1	5/14/2015 6:49:44 PM	R26209
Surr: BFB	108	0	67.4-150		%REC	1	5/14/2015 6:49:44 PM	R26209

Refer to the QC Summary report and 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 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-15 (18-20')

Project: SWMU 10

Collection Date: 5/13/2015 11:40:00 AM

Lab ID: 1505617-008

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 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	5.3	9.5		mg/Kg-dr	1	5/15/2015 12:27:11 PM	19228
Motor Oil Range Organics (MRO)	ND	48	48		mg/Kg-dr	1	5/15/2015 12:27:11 PM	19228
Surr: DNOP	97.7	0	57.9-140		%REC	1	5/15/2015 12:27:11 PM	19228
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	7.9	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	ND	0.0031	0.035		mg/Kg-dr	1	5/31/2015 11:00:02 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	2.8	5.3		mg/Kg-dr	2	5/20/2015 1:08:38 PM	19280
Arsenic	2.1	0.31	2.7	J	mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Barium	850	0.16	0.53		mg/Kg-dr	5	5/20/2015 1:44:01 PM	19280
Beryllium	1.0	0.0079	0.16		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Cadmium	ND	0.030	0.11		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Chromium	13	0.064	0.32		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Cobalt	7.4	0.040	0.32		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Iron	20000	65	270		mg/Kg-dr	100	5/20/2015 10:50:19 AM	19280
Lead	1.8	0.12	0.27		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Manganese	980	0.31	0.53		mg/Kg-dr	5	5/20/2015 1:44:01 PM	19280
Nickel	15	0.14	0.53		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Selenium	ND	1.6	2.7		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Silver	ND	0.032	0.27		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Vanadium	21	0.036	2.7		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
Zinc	23	0.69	2.7		mg/Kg-dr	1	5/20/2015 1:07:16 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Aniline	ND	0.094	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Anthracene	ND	0.091	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Azobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Benz(a)anthracene	ND	0.085	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Benzo(a)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Benzo(b)fluoranthene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Benzo(g,h,i)perylene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Benzo(k)fluoranthene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Benzoic acid	ND	0.061	0.54		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Benzyl alcohol	ND	0.096	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Bis(2-chloroethoxy)methane	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270

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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.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-15 (18-20')

Project: SWMU 10

Collection Date: 5/13/2015 11:40:00 AM

Lab ID: 1505617-008

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 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	5/21/2015 1:13:59 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.082	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.12	0.54		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
4-Bromophenyl phenyl ether	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Butyl benzyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
4-Chloro-3-methylphenol	ND	0.11	0.54		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
4-Chloroaniline	ND	0.10	0.54		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2-Chloronaphthalene	ND	0.12	0.27		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
4-Chlorophenyl phenyl ether	ND	0.16	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Di-n-butyl phthalate	ND	0.12	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Di-n-octyl phthalate	ND	0.12	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
1,2-Dichlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
1,3-Dichlorobenzene	ND	0.096	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
1,4-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
3,3'-Dichlorobenzidine	ND	0.083	0.27		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Diethyl phthalate	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Dimethyl phthalate	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2,4-Dichlorophenol	ND	0.11	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2,4-Dimethylphenol	ND	0.085	0.32		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.059	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2,4-Dinitrophenol	ND	0.045	0.54		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2,4-Dinitrotoluene	ND	0.096	0.54		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2,6-Dinitrotoluene	ND	0.12	0.54		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Hexachlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Hexachlorocyclopentadiene	ND	0.075	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Hexachloroethane	ND	0.096	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Isophorone	ND	0.11	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2-Methylnaphthalene	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2-Methylphenol	ND	0.11	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270

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Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-15 (18-20')

Project: SWMU 10

Collection Date: 5/13/2015 11:40:00 AM

Lab ID: 1505617-008

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
N-Nitrosodiphenylamine	ND	0.096	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Naphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2-Nitroaniline	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
3-Nitroaniline	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
4-Nitroaniline	ND	0.097	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Nitrobenzene	ND	0.11	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2-Nitrophenol	ND	0.097	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
4-Nitrophenol	ND	0.093	0.27		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Pentachlorophenol	ND	0.067	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Phenanthrene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Phenol	ND	0.097	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Pyridine	ND	0.091	0.43		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
2,4,6-Trichlorophenol	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:13:59 PM	19270
Surr: 2-Fluorophenol	76.2		26.4-129		%REC	1	5/21/2015 1:13:59 PM	19270
Surr: Phenol-d5	81.1		34.8-118		%REC	1	5/21/2015 1:13:59 PM	19270
Surr: 2,4,6-Tribromophenol	76.6		26.8-128		%REC	1	5/21/2015 1:13:59 PM	19270
Surr: Nitrobenzene-d5	74.5		35.8-124		%REC	1	5/21/2015 1:13:59 PM	19270
Surr: 2-Fluorobiphenyl	78.0		24.5-139		%REC	1	5/21/2015 1:13:59 PM	19270
Surr: 4-Terphenyl-d14	69.6		29.4-129		%REC	1	5/21/2015 1:13:59 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.0292	0.000501	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Toluene	0.0204	0.000231	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Ethylbenzene	0.00472	0.000374	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Xylenes, Total	0.0155	0.00133	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Methyl tert-butyl ether (MTBE)	ND	0.000932	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,2,4-Trimethylbenzene	0.00497	0.000581	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,3,5-Trimethylbenzene	0.00318	0.000390	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,2-Dichloroethane (EDC)	ND	0.000595	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,2-Dibromoethane (EDB)	ND	0.000266	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Naphthalene	0.00109	0.000726	0.00222	J	mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1-Methylnaphthalene	ND	0.000873	0.00444		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
2-Methylnaphthalene	ND	0.000868	0.00444		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Acetone	0.00238	0.00139	0.0111	J	mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Bromobenzene	ND	0.000618	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221

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
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-15 (18-20')

Project: SWMU 10

Collection Date: 5/13/2015 11:40:00 AM

Lab ID: 1505617-008

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Bromodichloromethane	ND	0.000300	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Bromoform	ND	0.000576	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Bromomethane	ND	0.00131	0.00333		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
2-Butanone	0.00227	0.000712	0.0111	J	mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Carbon tetrachloride	ND	0.000402	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Chlorobenzene	ND	0.000225	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Chloroethane	ND	0.00222	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Chloroform	ND	0.000458	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Chloromethane	ND	0.000262	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
2-Chlorotoluene	ND	0.000434	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Carbon disulfide	ND	0.00101	0.0111		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
4-Chlorotoluene	ND	0.000428	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
cis-1,2-DCE	ND	0.000588	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
cis-1,3-Dichloropropene	ND	0.00222	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,2-Dibromo-3-chloropropane	ND	0.000653	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Dibromochloromethane	ND	0.000249	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Dibromomethane	ND	0.00126	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,2-Dichlorobenzene	ND	0.000493	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,3-Dichlorobenzene	ND	0.000377	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,4-Dichlorobenzene	ND	0.000349	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Dichlorodifluoromethane	ND	0.000907	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,1-Dichloroethane	ND	0.000519	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,1-Dichloroethene	ND	0.000371	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,2-Dichloropropane	ND	0.000475	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,3-Dichloropropane	ND	0.000346	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
2,2-Dichloropropane	ND	0.000386	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,1-Dichloropropene	ND	0.000407	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Hexachlorobutadiene	ND	0.000448	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Isopropylbenzene	0.000689	0.000516	0.00222	J	mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
4-Isopropyltoluene	ND	0.000862	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Methylene chloride	ND	0.000549	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
n-Butylbenzene	ND	0.000912	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
2-Hexanone	ND	0.000462	0.0111		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
n-Propylbenzene	0.000889	0.000416	0.00222	J	mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
sec-Butylbenzene	0.000889	0.000561	0.00222	J	mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Styrene	ND	0.000368	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
4-Methyl-2-pentanone	ND	0.000938	0.0111		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
tert-Butylbenzene	ND	0.000341	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,1,1,2-Tetrachloroethane	ND	0.000362	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221

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	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report

Lab Order 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-15 (18-20')

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Lab ID: 1505617-008

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
1,1,2,2-Tetrachloroethane	ND	0.000489	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Tetrachloroethene (PCE)	ND	0.000440	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
trans-1,2-DCE	ND	0.000359	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
trans-1,3-Dichloropropene	ND	0.000291	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,2,3-Trichlorobenzene	ND	0.000813	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,2,4-Trichlorobenzene	ND	0.000833	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,1,1-Trichloroethane	ND	0.000316	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,1,2-Trichloroethane	ND	0.00222	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Trichloroethene (TCE)	ND	0.000442	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Trichlorofluoromethane	ND	0.000449	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
1,2,3-Trichloropropane	ND	0.000780	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Vinyl chloride	ND	0.000254	0.00222		mg/Kg-dr	1	5/14/2015 3:11:58 PM	19221
Surr: 1,2-Dichloroethane-d4	88.8	0	70-130		%REC	1	5/14/2015 3:11:58 PM	19221
Surr: 4-Bromofluorobenzene	104	0	70-130		%REC	1	5/14/2015 3:11:58 PM	19221
Surr: Dibromofluoromethane	92.9	0	70-130		%REC	1	5/14/2015 3:11:58 PM	19221
Surr: Toluene-d8	84.5	0	70-130		%REC	1	5/14/2015 3:11:58 PM	19221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.94	3.8		mg/Kg-dr	1	5/14/2015 7:18:41 PM	R26209
Surr: BFB	109	0	67.4-150		%REC	1	5/14/2015 7:18:41 PM	R26209

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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 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-17 (6-8')

Project: SWMU 10

Collection Date: 5/13/2015 1:45:00 PM

Lab ID: 1505617-009

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 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)	7800	530	960		mg/Kg-dr	100	5/15/2015 1:39:22 PM	19228
Motor Oil Range Organics (MRO)	ND	4800	4800		mg/Kg-dr	100	5/15/2015 1:39:22 PM	19228
Surr: DNOP	0	0	57.9-140	S	%REC	100	5/15/2015 1:39:22 PM	19228
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	13	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	ND	0.0031	0.036		mg/Kg-dr	1	5/31/2015 11:01:52 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	3.1	5.8		mg/Kg-dr	2	5/20/2015 1:11:14 PM	19280
Arsenic	1.5	0.34	2.9	J	mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Barium	200	0.035	0.12		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Beryllium	1.0	0.0086	0.17		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Chromium	11	0.070	0.35		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Cobalt	5.3	0.044	0.35		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Iron	16000	70	290		mg/Kg-dr	100	5/20/2015 10:51:42 AM	19280
Lead	4.4	0.13	0.29		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Manganese	210	0.068	0.12		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Nickel	9.6	0.15	0.58		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Vanadium	19	0.039	2.9		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
Zinc	17	0.75	2.9		mg/Kg-dr	1	5/20/2015 1:09:59 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	1.4	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Acenaphthylene	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Aniline	ND	0.99	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Anthracene	ND	0.97	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Azobenzene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Benz(a)anthracene	ND	0.90	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Benzo(a)pyrene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Benzo(b)fluoranthene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Benzo(g,h,i)perylene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Benzo(k)fluoranthene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Benzoic acid	ND	0.65	5.7		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Benzyl alcohol	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Bis(2-chloroethoxy)methane	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270

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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 10-17 (6-8')

Project: SWMU 10

Collection Date: 5/13/2015 1:45:00 PM

Lab ID: 1505617-009

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 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	5/21/2015 6:18:13 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.87	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Bis(2-ethylhexyl)phthalate	ND	1.3	5.7		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
4-Bromophenyl phenyl ether	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Butyl benzyl phthalate	ND	1.4	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Carbazole	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
4-Chloro-3-methylphenol	ND	1.1	5.7		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
4-Chloroaniline	ND	1.1	5.7		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2-Chloronaphthalene	ND	1.2	2.9		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2-Chlorophenol	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
4-Chlorophenyl phenyl ether	ND	1.7	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Chrysene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Di-n-butyl phthalate	ND	1.3	4.6		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Di-n-octyl phthalate	ND	1.3	4.6		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Dibenz(a,h)anthracene	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Dibenzofuran	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
1,2-Dichlorobenzene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
1,3-Dichlorobenzene	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
1,4-Dichlorobenzene	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
3,3'-Dichlorobenzidine	ND	0.88	2.9		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Diethyl phthalate	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Dimethyl phthalate	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2,4-Dichlorophenol	ND	1.1	4.6		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2,4-Dimethylphenol	36	0.90	3.4		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.62	4.6		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2,4-Dinitrophenol	ND	0.47	5.7		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2,4-Dinitrotoluene	ND	1.0	5.7		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2,6-Dinitrotoluene	ND	1.3	5.7		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Fluoranthene	ND	1.4	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Fluorene	7.1	1.6	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Hexachlorobenzene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Hexachlorobutadiene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Hexachlorocyclopentadiene	ND	0.79	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Hexachloroethane	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Indeno(1,2,3-cd)pyrene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Isophorone	ND	1.2	4.6		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
1-Methylnaphthalene	76	5.3	11		mg/Kg-dr	5	5/21/2015 6:45:56 PM	19270
2-Methylnaphthalene	130	5.2	11		mg/Kg-dr	5	5/21/2015 6:45:56 PM	19270
2-Methylphenol	56	5.7	23		mg/Kg-dr	5	5/21/2015 6:45:56 PM	19270

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Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-17 (6-8')

Project: SWMU 10

Collection Date: 5/13/2015 1:45:00 PM

Lab ID: 1505617-009

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	100	5.9	11		mg/Kg-dr	5	5/21/2015 6:45:56 PM	19270
N-Nitrosodi-n-propylamine	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
N-Nitrosodiphenylamine	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Naphthalene	24	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2-Nitroaniline	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
3-Nitroaniline	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
4-Nitroaniline	ND	1.0	4.6		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Nitrobenzene	ND	1.2	4.6		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2-Nitrophenol	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
4-Nitrophenol	ND	0.98	2.9		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Pentachlorophenol	ND	0.71	4.6		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Phenanthrene	15	1.2	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Phenol	52	5.1	11		mg/Kg-dr	5	5/21/2015 6:45:56 PM	19270
Pyrene	ND	1.5	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Pyridine	ND	0.96	4.6		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
1,2,4-Trichlorobenzene	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2,4,5-Trichlorophenol	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
2,4,6-Trichlorophenol	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 6:18:13 PM	19270
Surr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/21/2015 6:18:13 PM	19270
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/21/2015 6:18:13 PM	19270
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/21/2015 6:18:13 PM	19270
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/21/2015 6:18:13 PM	19270
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/21/2015 6:18:13 PM	19270
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/21/2015 6:18:13 PM	19270
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	1.9	0.094	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Toluene	34	0.076	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Ethylbenzene	11	0.058	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Methyl tert-butyl ether (MTBE)	ND	0.090	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,2,4-Trimethylbenzene	27	0.032	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,3,5-Trimethylbenzene	10	0.042	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,2-Dichloroethane (EDC)	ND	0.25	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,2-Dibromoethane (EDB)	ND	0.051	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Naphthalene	20	0.15	1.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1-Methylnaphthalene	48	0.38	2.5		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
2-Methylnaphthalene	87	2.1	13		mg/Kg-dr	100	5/15/2015 1:17:42 PM	R26221
Acetone	ND	0.47	9.5		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Bromobenzene	ND	0.047	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Bromodichloromethane	ND	0.052	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221

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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 10-17 (6-8')

Project: SWMU 10

Collection Date: 5/13/2015 1:45:00 PM

Lab ID: 1505617-009

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Bromoform	ND	0.051	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Bromomethane	ND	0.12	1.9		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
2-Butanone	ND	0.41	6.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Carbon disulfide	ND	0.46	6.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Carbon tetrachloride	ND	0.062	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Chlorobenzene	ND	0.049	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Chloroethane	ND	0.49	1.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Chloroform	ND	0.066	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Chloromethane	ND	0.073	1.9		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
2-Chlorotoluene	ND	0.072	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
4-Chlorotoluene	ND	0.048	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
cis-1,2-DCE	ND	0.080	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
cis-1,3-Dichloropropene	ND	0.044	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,2-Dibromo-3-chloropropane	ND	0.11	1.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Dibromochloromethane	ND	0.048	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Dibromomethane	ND	0.067	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,2-Dichlorobenzene	ND	0.038	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,3-Dichlorobenzene	ND	0.075	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,4-Dichlorobenzene	ND	0.079	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Dichlorodifluoromethane	ND	0.16	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,1-Dichloroethane	ND	0.25	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,1-Dichloroethene	ND	0.044	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,2-Dichloropropane	ND	0.035	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,3-Dichloropropane	ND	0.087	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
2,2-Dichloropropane	ND	0.092	1.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,1-Dichloropropene	ND	0.095	1.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Hexachlorobutadiene	ND	0.088	1.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
2-Hexanone	ND	0.16	6.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Isopropylbenzene	3.1	0.054	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
4-Isopropyltoluene	1.6	0.045	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
4-Methyl-2-pentanone	ND	0.11	6.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Methylene chloride	ND	0.25	1.9		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
n-Butylbenzene	2.8	0.055	1.9		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
n-Propylbenzene	5.2	0.047	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
sec-Butylbenzene	1.8	0.090	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Styrene	ND	0.12	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
tert-Butylbenzene	ND	0.073	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,1,1,2-Tetrachloroethane	ND	0.052	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,1,2,2-Tetrachloroethane	ND	0.077	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221

Refer to the QC Summary report and 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 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-17 (6-8')

Project: SWMU 10

Collection Date: 5/13/2015 1:45:00 PM

Lab ID: 1505617-009

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Tetrachloroethene (PCE)	ND	0.055	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
trans-1,2-DCE	ND	0.041	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
trans-1,3-Dichloropropene	ND	0.11	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,2,3-Trichlorobenzene	ND	0.14	1.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,2,4-Trichlorobenzene	ND	0.12	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,1,1-Trichloroethane	ND	0.096	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,1,2-Trichloroethane	ND	0.076	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Trichloroethene (TCE)	ND	0.062	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Trichlorofluoromethane	ND	0.19	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
1,2,3-Trichloropropane	ND	0.11	1.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Vinyl chloride	ND	0.25	0.63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Xylenes, Total	86	0.18	1.3		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Surr: Dibromofluoromethane	90.0		70-130		%REC	20	5/15/2015 2:15:21 PM	R26221
Surr: 1,2-Dichloroethane-d4	99.1		70-130		%REC	20	5/15/2015 2:15:21 PM	R26221
Surr: Toluene-d8	99.9		70-130		%REC	20	5/15/2015 2:15:21 PM	R26221
Surr: 4-Bromofluorobenzene	102		70-130		%REC	20	5/15/2015 2:15:21 PM	R26221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	1300	16	63		mg/Kg-dr	20	5/15/2015 2:15:21 PM	R26221
Surr: BFB	106	0	67.4-150		%REC	20	5/15/2015 2:15:21 PM	R26221

Refer to the QC Summary report and 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 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 DUP04

Project: SWMU 10

Collection Date: 5/13/2015

Lab ID: 1505617-010

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 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	98		mg/Kg-dr	10	5/15/2015 2:00:39 PM	19228
Motor Oil Range Organics (MRO)	ND	490	490		mg/Kg-dr	10	5/15/2015 2:00:39 PM	19228
Surr: DNOP	0	0	57.9-140	S	%REC	10	5/15/2015 2:00:39 PM	19228
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	13	1.0	1.0		wt%	1	5/14/2015	R26213
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	ND	0.0032	0.036		mg/Kg-dr	1	5/31/2015 11:03:43 AM	19475
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.5	2.9		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Arsenic	1.1	0.34	2.9	J	mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Barium	160	0.035	0.12		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Beryllium	1.1	0.0086	0.17		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Cadmium	ND	0.032	0.12		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Chromium	11	0.070	0.35		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Cobalt	5.4	0.044	0.35		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Iron	16000	70	290		mg/Kg-dr	100	5/20/2015 10:53:06 AM	19280
Lead	5.3	0.13	0.29		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Manganese	200	0.068	0.12		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Nickel	9.5	0.15	0.58		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Selenium	ND	1.8	2.9		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Silver	ND	0.035	0.29		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Vanadium	19	0.039	2.9		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
Zinc	17	0.75	2.9		mg/Kg-dr	1	5/20/2015 1:12:28 PM	19280
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	1.4	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Acenaphthylene	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Aniline	ND	0.99	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Anthracene	ND	0.97	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Azobenzene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Benz(a)anthracene	ND	0.89	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Benzo(a)pyrene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Benzo(b)fluoranthene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Benzo(g,h,i)perylene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Benzo(k)fluoranthene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Benzoic acid	ND	0.65	5.7		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Benzyl alcohol	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Bis(2-chloroethoxy)methane	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270

Refer to the QC Summary report and 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 DUP04

Project: SWMU 10

Collection Date: 5/13/2015

Lab ID: 1505617-010

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 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	5/21/2015 7:13:45 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.87	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Bis(2-ethylhexyl)phthalate	ND	1.3	5.7		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
4-Bromophenyl phenyl ether	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Butyl benzyl phthalate	ND	1.4	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Carbazole	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
4-Chloro-3-methylphenol	ND	1.1	5.7		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
4-Chloroaniline	ND	1.1	5.7		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2-Chloronaphthalene	ND	1.2	2.8		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2-Chlorophenol	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
4-Chlorophenyl phenyl ether	ND	1.7	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Chrysene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Di-n-butyl phthalate	ND	1.3	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Di-n-octyl phthalate	ND	1.3	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Dibenz(a,h)anthracene	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Dibenzofuran	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
1,2-Dichlorobenzene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
1,3-Dichlorobenzene	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
1,4-Dichlorobenzene	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
3,3'-Dichlorobenzidine	ND	0.87	2.8		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Diethyl phthalate	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Dimethyl phthalate	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2,4-Dichlorophenol	ND	1.1	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2,4-Dimethylphenol	18	0.89	3.4		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.62	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2,4-Dinitrophenol	ND	0.47	5.7		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2,4-Dinitrotoluene	ND	1.0	5.7		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2,6-Dinitrotoluene	ND	1.3	5.7		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Fluoranthene	ND	1.4	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Fluorene	3.2	1.5	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Hexachlorobenzene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Hexachlorobutadiene	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Hexachlorocyclopentadiene	ND	0.79	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Hexachloroethane	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Indeno(1,2,3-cd)pyrene	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Isophorone	ND	1.2	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
1-Methylnaphthalene	28	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2-Methylnaphthalene	45	1.0	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2-Methylphenol	29	1.1	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270

Refer to the QC Summary report and 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 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 DUP04

Project: SWMU 10

Collection Date: 5/13/2015

Lab ID: 1505617-010

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	60	5.9	11		mg/Kg-dr	5	5/21/2015 7:41:29 PM	19270
N-Nitrosodi-n-propylamine	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
N-Nitrosodiphenylamine	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Naphthalene	8.8	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2-Nitroaniline	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
3-Nitroaniline	ND	1.1	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
4-Nitroaniline	ND	1.0	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Nitrobenzene	ND	1.2	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2-Nitrophenol	ND	1.0	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
4-Nitrophenol	ND	0.98	2.8		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Pentachlorophenol	ND	0.71	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Phenanthrene	6.0	1.2	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Phenol	26	1.0	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Pyrene	ND	1.5	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Pyridine	ND	0.95	4.6		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
1,2,4-Trichlorobenzene	ND	1.2	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2,4,5-Trichlorophenol	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
2,4,6-Trichlorophenol	ND	1.3	2.3		mg/Kg-dr	1	5/21/2015 7:13:45 PM	19270
Surr: 2-Fluorophenol	0		26.4-129	S	%REC	1	5/21/2015 7:13:45 PM	19270
Surr: Phenol-d5	0		34.8-118	S	%REC	1	5/21/2015 7:13:45 PM	19270
Surr: 2,4,6-Tribromophenol	0		26.8-128	S	%REC	1	5/21/2015 7:13:45 PM	19270
Surr: Nitrobenzene-d5	0		35.8-124	S	%REC	1	5/21/2015 7:13:45 PM	19270
Surr: 2-Fluorobiphenyl	0		24.5-139	S	%REC	1	5/21/2015 7:13:45 PM	19270
Surr: 4-Terphenyl-d14	0		29.4-129	S	%REC	1	5/21/2015 7:13:45 PM	19270
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	1.2	0.095	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Toluene	23	0.076	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Ethylbenzene	8.3	0.059	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Methyl tert-butyl ether (MTBE)	ND	0.091	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,2,4-Trimethylbenzene	17	0.032	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,3,5-Trimethylbenzene	6.2	0.042	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,2-Dichloroethane (EDC)	ND	0.26	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,2-Dibromoethane (EDB)	ND	0.051	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Naphthalene	13	0.15	1.3		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1-Methylnaphthalene	31	0.39	2.6		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
2-Methylnaphthalene	60	0.42	2.6		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Acetone	ND	0.48	9.6		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Bromobenzene	ND	0.048	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Bromodichloromethane	ND	0.053	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221

Refer to the QC Summary report and 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 DUP04

Project: SWMU 10

Collection Date: 5/13/2015

Lab ID: 1505617-010

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Bromoform	ND	0.052	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Bromomethane	ND	0.12	1.9		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
2-Butanone	ND	0.41	6.4		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Carbon disulfide	ND	0.46	6.4		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Carbon tetrachloride	ND	0.063	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Chlorobenzene	ND	0.049	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Chloroethane	ND	0.50	1.3		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Chloroform	ND	0.067	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Chloromethane	ND	0.074	1.9		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
2-Chlorotoluene	ND	0.073	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
4-Chlorotoluene	ND	0.049	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
cis-1,2-DCE	ND	0.081	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
cis-1,3-Dichloropropene	ND	0.045	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,2-Dibromo-3-chloropropane	ND	0.11	1.3		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Dibromochloromethane	ND	0.048	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Dibromomethane	ND	0.068	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,2-Dichlorobenzene	ND	0.039	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,3-Dichlorobenzene	ND	0.076	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,4-Dichlorobenzene	ND	0.080	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Dichlorodifluoromethane	ND	0.16	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,1-Dichloroethane	ND	0.26	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,1-Dichloroethene	ND	0.044	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,2-Dichloropropane	ND	0.036	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,3-Dichloropropane	ND	0.088	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
2,2-Dichloropropane	ND	0.093	1.3		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,1-Dichloropropene	ND	0.096	1.3		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Hexachlorobutadiene	ND	0.089	1.3		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
2-Hexanone	ND	0.16	6.4		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Isopropylbenzene	2.3	0.054	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
4-Isopropyltoluene	1.1	0.046	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
4-Methyl-2-pentanone	ND	0.11	6.4		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Methylene chloride	ND	0.26	1.9		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
n-Butylbenzene	1.9	0.055	1.9	J	mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
n-Propylbenzene	3.3	0.048	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
sec-Butylbenzene	1.0	0.091	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Styrene	ND	0.12	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
tert-Butylbenzene	ND	0.074	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,1,1,2-Tetrachloroethane	ND	0.053	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,1,2,2-Tetrachloroethane	ND	0.078	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221

Refer to the QC Summary report and 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 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 DUP04

Project: SWMU 10

Collection Date: 5/13/2015

Lab ID: 1505617-010

Matrix: SOIL

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Tetrachloroethene (PCE)	ND	0.056	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
trans-1,2-DCE	ND	0.042	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
trans-1,3-Dichloropropene	ND	0.12	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,2,3-Trichlorobenzene	ND	0.14	1.3		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,2,4-Trichlorobenzene	ND	0.12	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,1,1-Trichloroethane	ND	0.097	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,1,2-Trichloroethane	ND	0.077	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Trichloroethene (TCE)	ND	0.063	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Trichlorofluoromethane	ND	0.19	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
1,2,3-Trichloropropane	ND	0.11	1.3		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Vinyl chloride	ND	0.26	0.64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Xylenes, Total	65	0.18	1.3		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Surr: Dibromofluoromethane	98.2		70-130		%REC	20	5/15/2015 2:44:10 PM	R26221
Surr: 1,2-Dichloroethane-d4	101		70-130		%REC	20	5/15/2015 2:44:10 PM	R26221
Surr: Toluene-d8	103		70-130		%REC	20	5/15/2015 2:44:10 PM	R26221
Surr: 4-Bromofluorobenzene	78.3		70-130		%REC	20	5/15/2015 2:44:10 PM	R26221
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	1100	16	64		mg/Kg-dr	20	5/15/2015 2:44:10 PM	R26221
Surr: BFB	99.4	0	67.4-150		%REC	20	5/15/2015 2:44:10 PM	R26221

Refer to the QC Summary report and 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 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: MeOH Blank

Project: SWMU 10

Collection Date:

Lab ID: 1505617-011

Matrix: MEOH BLAN

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	ND	0.0074	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Toluene	ND	0.0060	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Ethylbenzene	ND	0.0046	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Methyl tert-butyl ether (MTBE)	ND	0.0071	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,2,4-Trimethylbenzene	0.0058	0.0025	0.050	J	mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,3,5-Trimethylbenzene	ND	0.0033	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,2-Dichloroethane (EDC)	ND	0.020	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,2-Dibromoethane (EDB)	ND	0.0040	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Naphthalene	ND	0.012	0.10		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1-Methylnaphthalene	ND	0.030	0.20		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
2-Methylnaphthalene	ND	0.033	0.20		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Acetone	ND	0.037	0.75		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Bromobenzene	ND	0.0037	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Bromodichloromethane	ND	0.0041	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Bromoform	ND	0.0040	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Bromomethane	0.031	0.0097	0.15	J	mg/Kg	1	5/14/2015 7:47:32 PM	R26209
2-Butanone	ND	0.032	0.50		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Carbon disulfide	ND	0.036	0.50		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Carbon tetrachloride	ND	0.0049	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Chlorobenzene	ND	0.0038	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Chloroethane	ND	0.039	0.10		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Chloroform	ND	0.0052	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Chloromethane	ND	0.0058	0.15		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
2-Chlorotoluene	ND	0.0057	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
4-Chlorotoluene	ND	0.0038	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
cis-1,2-DCE	ND	0.0063	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
cis-1,3-Dichloropropene	ND	0.0035	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,2-Dibromo-3-chloropropane	ND	0.0086	0.10		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Dibromochloromethane	ND	0.0037	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Dibromomethane	ND	0.0053	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,2-Dichlorobenzene	ND	0.0030	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,3-Dichlorobenzene	ND	0.0059	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,4-Dichlorobenzene	ND	0.0062	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Dichlorodifluoromethane	ND	0.013	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,1-Dichloroethane	ND	0.020	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,1-Dichloroethene	ND	0.0034	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,2-Dichloropropane	ND	0.0028	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,3-Dichloropropane	ND	0.0069	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
2,2-Dichloropropane	ND	0.0073	0.10		mg/Kg	1	5/14/2015 7:47:32 PM	R26209

Refer to the QC Summary report and 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 1505617

Date Reported: 10/27/2015

CLIENT: Western Refining Company

Client Sample ID: MeOH Blank

Project: SWMU 10

Collection Date:

Lab ID: 1505617-011

Matrix: MEOH BLAN

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
1,1-Dichloropropene	ND	0.0074	0.10		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Hexachlorobutadiene	ND	0.0069	0.10		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
2-Hexanone	ND	0.012	0.50		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Isopropylbenzene	ND	0.0042	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
4-Isopropyltoluene	ND	0.0036	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
4-Methyl-2-pentanone	ND	0.0087	0.50		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Methylene chloride	ND	0.020	0.15		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
n-Butylbenzene	ND	0.0043	0.15		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
n-Propylbenzene	ND	0.0037	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
sec-Butylbenzene	ND	0.0071	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Styrene	ND	0.0092	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
tert-Butylbenzene	ND	0.0057	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,1,1,2-Tetrachloroethane	ND	0.0041	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,1,2,2-Tetrachloroethane	ND	0.0061	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Tetrachloroethene (PCE)	ND	0.0043	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
trans-1,2-DCE	ND	0.0032	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
trans-1,3-Dichloropropene	ND	0.0090	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,2,3-Trichlorobenzene	ND	0.011	0.10		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,2,4-Trichlorobenzene	ND	0.0092	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,1,1-Trichloroethane	ND	0.0076	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,1,2-Trichloroethane	ND	0.0060	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Trichloroethene (TCE)	ND	0.0049	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Trichlorofluoromethane	ND	0.015	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
1,2,3-Trichloropropane	ND	0.0084	0.10		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Vinyl chloride	ND	0.020	0.050		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Xylenes, Total	ND	0.014	0.10		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Surr: Dibromofluoromethane	101		70-130		%REC	1	5/14/2015 7:47:32 PM	R26209
Surr: 1,2-Dichloroethane-d4	102		70-130		%REC	1	5/14/2015 7:47:32 PM	R26209
Surr: Toluene-d8	89.8		70-130		%REC	1	5/14/2015 7:47:32 PM	R26209
Surr: 4-Bromofluorobenzene	101		70-130		%REC	1	5/14/2015 7:47:32 PM	R26209
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	1.3	5.0		mg/Kg	1	5/14/2015 7:47:32 PM	R26209
Surr: BFB	114	0	67.4-150		%REC	1	5/14/2015 7:47:32 PM	R26209

Refer to the QC Summary report and 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
(615) 758-5858
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 15, 2015
Description :
Sample ID : 1505617-001C SWMU 10-12 6-8FT
Collected By :
Collection Date : 05/12/15 15:45

ESC Sample # : L765575-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	46.		mV	2580 B-2011	05/23/15	1
pH	7.4	0.10	su	9045D	05/16/15	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: 05/26/15 11:47 Printed: 05/26/15 11:47
L765575-01 (PH) - 7.4 at 22.2c



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Est. 1970

REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 15, 2015
Description :
Sample ID : 1505617-002C SWMU 10-12 20-22FT
Collected By :
Collection Date : 05/12/15 16:00

ESC Sample # : L765575-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	37.		mV	2580 B-2011	05/23/15	1
pH	8.4	0.10	su	9045D	05/16/15	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: 05/26/15 11:47 Printed: 05/26/15 11:47
L765575-02 (PH) - 8.4 at 22.3c



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Est. 1970

REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 15, 2015
Description :
Sample ID : 1505617-003C SWMU 10-13 2-4FT
Collected By :
Collection Date : 05/13/15 09:15

ESC Sample # : L765575-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	63.		mV	2580 B-2011	05/23/15	1
pH	7.4	0.10	su	9045D	05/16/15	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: 05/26/15 11:47 Printed: 05/26/15 11:47
L765575-03 (PH) - 7.4 at 22.3c



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Est. 1970

REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 15, 2015
Description :
Sample ID : 1505617-004C SWMU 10-13 6-8FT
Collected By :
Collection Date : 05/13/15 09:25

ESC Sample # : L765575-04

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	55.		mV	2580 B-2011	05/23/15	1
pH	8.0	0.10	su	9045D	05/16/15	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: 05/26/15 11:47 Printed: 05/26/15 11:47
L765575-04 (PH) - 8.0 at 21.8c



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1-800-767-5859
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REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 15, 2015
Description :
Sample ID : 1505617-005C SWMU 10-13 18-20FT
Collected By :
Collection Date : 05/13/15 09:35

ESC Sample # : L765575-05

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	30.		mV	2580 B-2011	05/23/15	1
pH	8.7	0.10	su	9045D	05/16/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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L765575-05 (PH) - 8.7 at 21.8c



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REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 15, 2015
Description :
Sample ID : 1505617-006C SWMU 10-15 2-4FT
Collected By :
Collection Date : 05/13/15 11:15

ESC Sample # : L765575-06

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/21/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	44.		mV	2580 B-2011	05/23/15	1
pH	7.6	0.10	su	9045D	05/16/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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L765575-06 (PH) - 7.6 at 21.7c



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REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 15, 2015
Description :
Sample ID : 1505617-007C SWMU 10-15 4-6FT
Collected By :
Collection Date : 05/13/15 11:25

ESC Sample # : L765575-07

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/26/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	35.		mV	2580 B-2011	05/23/15	1
pH	8.1	0.10	su	9045D	05/16/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

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L765575-07 (PH) - 8.1 at 21.7c



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REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 15, 2015
Description :
Sample ID : 1505617-008C SWMU 10-15 18-20FT
Collected By :
Collection Date : 05/13/15 11:40

ESC Sample # : L765575-08

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/26/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	23.		mV	2580 B-2011	05/23/15	1
pH	8.8	0.10	su	9045D	05/16/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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L765575-08 (PH) - 8.8 at 21.8c



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REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 15, 2015
Description :
Sample ID : 1505617-009C SWMU 10-17 6-8FT
Collected By :
Collection Date : 05/13/15 13:45

ESC Sample # : L765575-09

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/26/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	35.		mV	2580 B-2011	05/23/15	1
pH	8.1	0.10	su	9045D	05/16/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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L765575-09 (PH) - 8.1 at 22.2c

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REPORT OF ANALYSIS

May 26, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 15, 2015
Description :
Sample ID : 1505617-010C SWMU 10 DUP04
Collected By :
Collection Date : 05/13/15 00:00

ESC Sample # : L765575-10

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.25	mg/kg	9012B	05/26/15	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	05/19/15	1
ORP	35.		mV	2580 B-2011	05/23/15	1
pH	8.1	0.10	su	9045D	05/16/15	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: 05/26/15 11:47 Printed: 05/26/15 11:47
L765575-10 (PH) - 8.1 at 22.0c



YOUR LAB OF CHOICE

Hall Environmental Analysis Laboratory

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Quality Assurance Report
Level II

L765575

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Tax I.D. 62-0814289

Est. 1970

May 26, 2015

Analyte	Result	Laboratory Blank Units % Rec	Limit	Batch	Date Analyzed
Chromium, Hexavalent	< 2	mg/kg		WG789461	05/19/15 03:43
Cyanide	< .25	mg/kg		WG789989	05/21/15 08:51
Cyanide	< .25	mg/kg		WG790306	05/26/15 09:43

Analyte	Units	Result	Duplicate Duplicate	RPD	Limit	Ref Samp	Batch
Chromium, Hexavalent	mg/kg	0.0	0.0	0.0	20	L765575-05	WG789461
pH	su	7.40	7.40	0.406	1	L765575-01	WG789463
pH	su	8.50	8.50	0.118	1	L765657-06	WG789463
Cyanide	mg/kg	0.0	0.0	0.0	20	L765575-01	WG789989
Cyanide	mg/kg	0.0	0.0	0.0	20	L765575-03	WG789989
ORP	mV	54.0	56.0	3.64	20	L765419-02	WG790617
ORP	mV	46.0	45.0	2.20	20	L766227-03	WG790617
Cyanide	mg/kg	0.0	0.0	0.0	20	L765924-01	WG790306
Cyanide	mg/kg	0.0	0.0	0.0	20	L766617-01	WG790306

Analyte	Units	Laboratory Control Known Val	Sample Result	% Rec	Limit	Batch
Chromium, Hexavalent	mg/kg	59.8	64.6	108.	80-120	WG789461
pH	su	7.84	7.79	99.4	98.3-101.7	WG789463
Cyanide	mg/kg	101	117.	116.	50-150	WG789989
ORP	mV	100	101.	101.	90-110	WG790617
Cyanide	mg/kg	101	124.	123.	50-150	WG790306

Analyte	Units	Laboratory Control Result	Sample Ref	Duplicate %Rec	Limit	RPD	Limit	Batch
Chromium, Hexavalent	mg/kg	64.4	64.6	108.	80-120	0.310	20	WG789461
pH	su	7.79	7.79	99.0	98.3-101.7	0.0	20	WG789463
Cyanide	mg/kg	125.	117.	124.	50-150	6.61	20	WG789989
ORP	mV	100.	101.	100.	90-110	0.995	20	WG790617

* 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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Est. 1970

May 26, 2015

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Cyanide	mg/kg	122.	124.	121.	50-150	1.63	20	WG790306

Analyte	Units	MS Res	Matrix Spike			Limit	Ref Samp	Batch
			Ref Res	TV	% Rec			
Chromium, Hexavalent	mg/kg	19.7	0.0	20	98.0	75-125	L765575-05	WG789461
Cyanide	mg/kg	3.32	0.0	3.33	100.	80-120	L765575-02	WG789989
Cyanide	mg/kg	2.97	0.0	3.33	89.0	80-120	L765924-04	WG790306

Analyte	Units	MSD	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec						
Chromium, Hexavalent	mg/kg	19.9	19.7	99.5		75-125	1.01	20	L765575-05	WG789461
Cyanide	mg/kg	3.47	3.32	104.		80-120	4.42	20	L765575-02	WG789989
Cyanide	mg/kg	3.18	2.97	95.5		80-120	6.83	20	L765924-04	WG790306

Batch number /Run number / Sample number cross reference

WG789463: R3037588: L765575-01 02 03 04 05 06 07 08 09 10
WG789461: R3037738: L765575-01 02 03 04 05 06 07 08 09 10
WG789989: R3038429: L765575-01 02 03 04 05 06
WG790617: R3039123: L765575-01 02 03 04 05 06 07 08 09 10
WG790306: R3039168: L765575-07 08 09 10

* * 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#: 1505617

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19228		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 19228		RunNo: 26217					
Prep Date:	5/14/2015		Analysis Date: 5/15/2015		SeqNo: 777964		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		118	57.9	140			

Sample ID	LCS-19228		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 19228		RunNo: 26217					
Prep Date:	5/14/2015		Analysis Date: 5/15/2015		SeqNo: 777965		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	106	67.8	130			
Surr: DNOP	5.6		5.000		112	57.9	140			

Sample ID	1505617-001BMS		SampType: MS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	SWMU 10-12 (6-8')		Batch ID: 19228		RunNo: 26217					
Prep Date:	5/14/2015		Analysis Date: 5/15/2015		SeqNo: 778449		Units: mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	9.9	49.55	0	84.0	42.3	146			
Surr: DNOP	4.6		4.955		93.3	57.9	140			

Sample ID	1505617-001BMSD		SampType:	MSD		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	SWMU 10-12 (6-8')		Batch ID:	19228		RunNo:	26217				
Prep Date:	5/14/2015		Analysis Date:	5/15/2015		SeqNo:	778487		Units: mg/Kg-dry		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	43	10	49.80	0	86.5	42.3	146	3.41	28.9		
Surr: DNOP	4.7		4.980		94.7	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#: 1505617

27-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: R26209			RunNo: 26209					
Prep Date:		Analysis Date: 5/14/2015			SeqNo: 777608		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	0.0085	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	0.023	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								

Qualifiers:

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

B Analyte detected in the 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#: 1505617

27-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:	R26209	RunNo:	26209					
Prep Date:		Analysis Date:	5/14/2015	SeqNo:	777608	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	0.52		0.5000		103	70	130			
Surr: Toluene-d8	0.49		0.5000		97.4	70	130			
Surr: 4-Bromofluorobenzene	0.53		0.5000		105	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: Volatiles					
Client ID:	LCSS	Batch ID:	R26209	RunNo:	26209					
Prep Date:		Analysis Date:	5/14/2015	SeqNo:	777609	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	104	70	130			
Toluene	1.0	0.050	1.000	0	104	70	130			
Chlorobenzene	0.98	0.050	1.000	0	98.3	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#: 1505617

27-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: R26209			RunNo: 26209					
Prep Date:		Analysis Date: 5/14/2015			SeqNo: 777609		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	118	60.6	134			
Trichloroethene (TCE)	0.94	0.050	1.000	0	94.2	70	130			
Surr: Dibromofluoromethane	0.53		0.5000		106	70	130			
Surr: 1,2-Dichloroethane-d4	0.54		0.5000		109	70	130			
Surr: Toluene-d8	0.50		0.5000		101	70	130			
Surr: 4-Bromofluorobenzene	0.53		0.5000		106	70	130			

Sample ID	5mL rb	SampType: MBLK			TestCode: EPA Method 8260B: Volatiles					
Client ID:	PBS	Batch ID: R26221			RunNo: 26221					
Prep Date:		Analysis Date: 5/15/2015			SeqNo: 778722		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	0.0072	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	0.019	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								

Qualifiers:

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

B Analyte detected in the 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#: 1505617

27-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: R26221			RunNo: 26221					
Prep Date:		Analysis Date: 5/15/2015			SeqNo: 778722		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	0.54		0.5000		107	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#: 1505617

27-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:	R26221	RunNo:	26221					
Prep Date:		Analysis Date:	5/15/2015	SeqNo:	778722	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.53		0.5000		107	70	130			
Surr: Toluene-d8	0.51		0.5000		101	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		101	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: Volatiles					
Client ID:	LCSS	Batch ID:	R26221	RunNo:	26221					
Prep Date:		Analysis Date:	5/15/2015	SeqNo:	778723	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	1.000	0	106	70	130			
Toluene	1.0	0.050	1.000	0	101	70	130			
Chlorobenzene	1.0	0.050	1.000	0	101	70	130			
1,1-Dichloroethene	1.2	0.050	1.000	0	119	60.6	134			
Trichloroethene (TCE)	0.94	0.050	1.000	0	94.1	70	130			
Surr: Dibromofluoromethane	0.48		0.5000		95.6	70	130			
Surr: 1,2-Dichloroethane-d4	0.52		0.5000		103	70	130			
Surr: Toluene-d8	0.49		0.5000		98.8	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		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#: 1505617

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19270		SampType: MBLK		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	PBS		Batch ID: 19270		RunNo: 26300					
Prep Date:	5/18/2015		Analysis Date: 5/19/2015		SeqNo: 781322		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#: 1505617

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19270		SampType: MBLK		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	PBS		Batch ID: 19270		RunNo: 26300					
Prep Date:	5/18/2015		Analysis Date: 5/19/2015		SeqNo: 781322		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	3.0		3.330		89.3	26.4	129			
Surr: Phenol-d5	2.9		3.330		86.8	34.8	118			
Surr: 2,4,6-Tribromophenol	2.9		3.330		85.8	26.8	128			
Surr: Nitrobenzene-d5	1.5		1.670		88.3	35.8	124			
Surr: 2-Fluorobiphenyl	1.5		1.670		87.0	24.5	139			
Surr: 4-Terphenyl-d14	1.4		1.670		84.5	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#: 1505617

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	lcs-19270		SampType: LCS			TestCode: EPA Method 8270C: Semivolatiles				
Client ID:	LCSS		Batch ID: 19270			RunNo: 26300				
Prep Date:	5/18/2015		Analysis Date: 5/19/2015			SeqNo: 781323		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.4	0.20	1.670	0	86.6	45.8	114			
4-Chloro-3-methylphenol	2.9	0.50	3.330	0	88.6	52.3	122			
2-Chlorophenol	2.9	0.20	3.330	0	87.7	49.9	115			
1,4-Dichlorobenzene	1.5	0.20	1.670	0	91.5	43.7	107			
2,4-Dinitrotoluene	1.2	0.50	1.670	0	74.4	36	106			
N-Nitrosodi-n-propylamine	1.3	0.20	1.670	0	80.6	39.5	110			
4-Nitrophenol	2.8	0.25	3.330	0	83.9	45.1	121			
Pentachlorophenol	2.5	0.40	3.330	0	75.8	23.7	111			
Phenol	3.2	0.20	3.330	0	97.0	52.7	119			
Pyrene	1.5	0.20	1.670	0	90.1	50.4	116			
1,2,4-Trichlorobenzene	1.7	0.20	1.670	0	101	40.1	114			
Surr: 2-Fluorophenol	3.3		3.330		98.7	26.4	129			
Surr: Phenol-d5	3.4		3.330		103	34.8	118			
Surr: 2,4,6-Tribromophenol	3.4		3.330		101	26.8	128			
Surr: Nitrobenzene-d5	1.6		1.670		96.4	35.8	124			
Surr: 2-Fluorobiphenyl	1.7		1.670		100	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		87.2	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#: 1505617

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19475		SampType: MBLK		TestCode: EPA Method 7471: Mercury					
Client ID:	PBS		Batch ID: 19475		RunNo: 26535					
Prep Date:	5/30/2015		Analysis Date: 5/31/2015		SeqNo: 788620		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercurv	ND	0.033								

Sample ID	LCS-19475		SampType: LCS		TestCode: EPA Method 7471: Mercury					
Client ID:	LCSS		Batch ID: 19475		RunNo: 26535					
Prep Date:	5/30/2015		Analysis Date: 5/31/2015		SeqNo: 788621		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.16	0.033	0.1667	0	97.3	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#: 1505617

27-Oct-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19280		SampType: MBLK		TestCode: EPA Method 6010B: Soil Metals					
Client ID:	PBS		Batch ID: 19280		RunNo: 26309					
Prep Date:	5/18/2015		Analysis Date: 5/20/2015		SeqNo: 781615		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	ND	0.25								
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Sample ID	LCS-19280		SampType: LCS		TestCode: EPA Method 6010B: Soil Metals					
Client ID:	LCSS		Batch ID: 19280		RunNo: 26309					
Prep Date:	5/18/2015		Analysis Date: 5/20/2015		SeqNo: 781616		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	27	2.5	25.00	0	109	80	120			
Arsenic	25	2.5	25.00	0	101	80	120			
Barium	26	0.10	25.00	0	102	80	120			
Beryllium	27	0.15	25.00	0	106	80	120			
Cadmium	26	0.10	25.00	0	102	80	120			
Chromium	25	0.30	25.00	0	102	80	120			
Cobalt	25	0.30	25.00	0	101	80	120			
Iron	27	2.5	25.00	0	106	80	120			
Lead	25	0.25	25.00	0	100	80	120			
Manganese	26	0.10	25.00	0	102	80	120			
Nickel	25	0.50	25.00	0	101	80	120			
Selenium	26	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	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#: 1505617

27-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: R26209			RunNo: 26209						
Prep Date:	Analysis Date: 5/14/2015			SeqNo: 777629		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	490		500.0		98.3	67.4	150			

Sample ID 2.5ug gro lcs	SampType: LCS			TestCode: EPA Method 8015D Mod: Gasoline Range						
Client ID: LCSS	Batch ID: R26209			RunNo: 26209						
Prep Date:	Analysis Date: 5/14/2015			SeqNo: 777631		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	96.6	79.9	135			
Surr: BFB	510		500.0		103	67.4	150			

Sample ID 5mL rb	SampType: MBLK			TestCode: EPA Method 8015D Mod: Gasoline Range						
Client ID: PBS	Batch ID: R26221			RunNo: 26221						
Prep Date:	Analysis Date: 5/15/2015			SeqNo: 778746		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	490		500.0		97.2	67.4	150			

Sample ID 2.5ug gro lcs	SampType: LCS			TestCode: EPA Method 8015D Mod: Gasoline Range						
Client ID: LCSS	Batch ID: R26221			RunNo: 26221						
Prep Date:	Analysis Date: 5/15/2015			SeqNo: 778747		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	90.8	79.9	135			
Surr: BFB	480		500.0		96.4	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: **1505617**

RcptNo: **1**

Received by/date:

CS *05/13/15*

Logged By: **Lindsay Mangin**

5/13/2015 4:23:00 PM

Completed By: **Lindsay Mangin**

5/14/2015 7:35:30 AM

Reviewed By:

AS 05/14/15

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 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



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

November 04, 2015

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

RE: SWMU 10

OrderNo.: 1505618

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 5/13/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 22, 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'.

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#: 1505618
Date: 11/4/2015

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding EPA Method 8270:
Sample SWMU 10 EB06 was extracted 2 days past the 7 day holding time.

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505618

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB06

Project: SWMU 10

Collection Date: 5/12/2015 5:15:00 PM

Lab ID: 1505618-001

Matrix: AQUEOUS

Received Date: 5/13/2015 4:23:00 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	5/15/2015 1:01:24 PM	19246
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/15/2015 1:01:24 PM	19246
Surr: DNOP	141	0	76.5-150		%REC	1	5/15/2015 1:01:24 PM	19246
EPA METHOD 300.0: ANIONS							Analyst: LGT	
Fluoride	ND	0.029	0.10		mg/L	1	5/14/2015 2:23:33 PM	R26194
Chloride	ND	0.13	0.50		mg/L	1	5/14/2015 2:23:33 PM	R26194
Sulfate	ND	0.11	0.50		mg/L	1	5/14/2015 2:23:33 PM	R26194
EPA METHOD 200.7: DISSOLVED METALS							Analyst: JLF	
Barium	ND	0.00095	0.0020		mg/L	1	5/19/2015 4:55:35 PM	R26291
Beryllium	ND	0.00031	0.0020		mg/L	1	5/19/2015 4:55:35 PM	R26291
Cadmium	ND	0.00097	0.0020		mg/L	1	5/19/2015 4:55:35 PM	R26291
Chromium	ND	0.0018	0.0060		mg/L	1	5/19/2015 4:55:35 PM	R26291
Cobalt	ND	0.0013	0.0060		mg/L	1	5/19/2015 4:55:35 PM	R26291
Iron	ND	0.0073	0.020		mg/L	1	5/19/2015 4:55:35 PM	R26291
Manganese	0.00046	0.00027	0.0020	J	mg/L	1	5/19/2015 4:55:35 PM	R26291
Nickel	ND	0.0021	0.010		mg/L	1	5/19/2015 4:55:35 PM	R26291
Silver	ND	0.0012	0.0050		mg/L	1	5/19/2015 4:55:35 PM	R26291
Vanadium	ND	0.0015	0.050		mg/L	1	5/19/2015 4:55:35 PM	R26291
Zinc	0.062	0.0028	0.010		mg/L	1	5/19/2015 4:55:35 PM	R26291
EPA METHOD 200.7: METALS							Analyst: ELS	
Barium	ND	0.00095	0.0020		mg/L	1	5/21/2015 4:05:51 PM	R26358
Beryllium	ND	0.00031	0.0020		mg/L	1	5/21/2015 4:05:51 PM	R26358
Cadmium	ND	0.00097	0.0020		mg/L	1	5/21/2015 4:05:51 PM	R26358
Chromium	ND	0.0022	0.0060		mg/L	1	5/21/2015 4:05:51 PM	R26358
Cobalt	ND	0.0013	0.0060		mg/L	1	5/21/2015 4:05:51 PM	R26358
Iron	ND	0.0073	0.020		mg/L	1	5/21/2015 4:05:51 PM	R26358
Manganese	ND	0.0015	0.0020		mg/L	1	5/21/2015 4:05:51 PM	R26358
Nickel	ND	0.0023	0.010		mg/L	1	5/21/2015 4:05:51 PM	R26358
Silver	ND	0.0021	0.0050		mg/L	1	5/21/2015 4:05:51 PM	R26358
Vanadium	ND	0.0015	0.050		mg/L	1	5/21/2015 4:05:51 PM	R26358
Zinc	ND	0.0036	0.010		mg/L	1	5/21/2015 4:05:51 PM	R26358
EPA 200.8: DISSOLVED METALS							Analyst: DBD	
Antimony	0.00031	0.00014	0.0010	J	mg/L	1	5/19/2015 4:25:30 PM	R26294
Arsenic	ND	0.000065	0.0010		mg/L	1	5/19/2015 4:25:30 PM	R26294
Lead	ND	0.000026	0.0010		mg/L	1	5/19/2015 4:25:30 PM	R26294
Selenium	ND	0.00019	0.0010		mg/L	1	5/19/2015 4:25:30 PM	R26294

EPA 200.8: METALS

Analyst: **DBD**

Refer to the QC Summary report and 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 1505618

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB06

Project: SWMU 10

Collection Date: 5/12/2015 5:15:00 PM

Lab ID: 1505618-001

Matrix: AQUEOUS

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: DBD	
Antimony	ND	0.00043	0.0010		mg/L	1	5/20/2015 6:37:39 PM	R26325
Arsenic	ND	0.00029	0.0010		mg/L	1	5/20/2015 6:37:39 PM	R26325
Lead	ND	0.000047	0.00050		mg/L	1	5/20/2015 6:37:39 PM	R26325
Selenium	ND	0.00019	0.0010		mg/L	1	5/20/2015 6:37:39 PM	R26325
EPA METHOD 245.1: MERCURY							Analyst: MED	
Mercury	0.00015	0.000059	0.00020	J	mg/L	1	5/28/2015 9:51:59 AM	19401
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	1.9	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Acenaphthylene	ND	1.9	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Aniline	ND	1.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Anthracene	ND	1.6	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Azobenzene	ND	2.0	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Benz(a)anthracene	ND	2.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Benzo(a)pyrene	ND	2.7	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Benzo(b)fluoranthene	ND	2.4	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Benzo(g,h,i)perylene	ND	3.1	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Benzo(k)fluoranthene	ND	2.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Benzoic acid	ND	1.0	20	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Benzyl alcohol	ND	1.2	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Bis(2-chloroethoxy)methane	ND	1.8	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Bis(2-chloroethyl)ether	ND	1.8	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Bis(2-chloroisopropyl)ether	ND	2.1	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Bis(2-ethylhexyl)phthalate	ND	3.3	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
4-Bromophenyl phenyl ether	ND	1.4	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Butyl benzyl phthalate	ND	2.4	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Carbazole	ND	1.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
4-Chloro-3-methylphenol	ND	1.4	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
4-Chloroaniline	ND	1.9	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2-Chloronaphthalene	ND	1.7	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2-Chlorophenol	ND	1.2	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
4-Chlorophenyl phenyl ether	ND	2.0	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Chrysene	ND	2.2	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Di-n-butyl phthalate	ND	2.1	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Di-n-octyl phthalate	ND	1.9	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Dibenz(a,h)anthracene	ND	3.3	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Dibenzofuran	ND	1.9	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
1,2-Dichlorobenzene	ND	1.9	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
1,3-Dichlorobenzene	ND	1.7	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344

Refer to the QC Summary report and 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 1505618

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB06

Project: SWMU 10

Collection Date: 5/12/2015 5:15:00 PM

Lab ID: 1505618-001

Matrix: AQUEOUS

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
1,4-Dichlorobenzene	ND	1.2	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
3,3'-Dichlorobenzidine	ND	2.6	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Diethyl phthalate	ND	1.7	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Dimethyl phthalate	ND	2.0	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2,4-Dichlorophenol	ND	1.4	20	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2,4-Dimethylphenol	ND	1.9	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
4,6-Dinitro-2-methylphenol	ND	1.4	20	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2,4-Dinitrophenol	ND	1.1	20	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2,4-Dinitrotoluene	ND	1.4	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2,6-Dinitrotoluene	ND	1.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Fluoranthene	ND	1.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Fluorene	ND	1.7	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Hexachlorobenzene	ND	2.0	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Hexachlorobutadiene	ND	1.9	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Hexachlorocyclopentadiene	ND	1.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Hexachloroethane	ND	1.6	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Indeno(1,2,3-cd)pyrene	ND	2.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Isophorone	ND	2.0	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
1-Methylnaphthalene	ND	1.8	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2-Methylnaphthalene	ND	2.2	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2-Methylphenol	ND	1.2	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
3+4-Methylphenol	ND	1.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
N-Nitrosodi-n-propylamine	ND	2.0	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
N-Nitrosodimethylamine	ND	1.4	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
N-Nitrosodiphenylamine	ND	2.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Naphthalene	ND	1.8	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2-Nitroaniline	ND	1.8	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
3-Nitroaniline	ND	1.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
4-Nitroaniline	ND	1.2	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Nitrobenzene	ND	1.5	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2-Nitrophenol	ND	1.2	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
4-Nitrophenol	ND	1.4	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Pentachlorophenol	ND	1.1	20	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Phenanthrene	ND	2.0	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Phenol	ND	1.1	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Pyrene	ND	2.3	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Pyridine	ND	1.7	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
1,2,4-Trichlorobenzene	ND	2.0	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
2,4,5-Trichlorophenol	ND	1.6	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344

Refer to the QC Summary report and 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 1505618

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB06

Project: SWMU 10

Collection Date: 5/12/2015 5:15:00 PM

Lab ID: 1505618-001

Matrix: AQUEOUS

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
2,4,6-Trichlorophenol	ND	1.3	10	H	µg/L	1	5/26/2015 2:10:51 PM	19344
Surr: 2-Fluorophenol	52.1	0	14.9-111	H	%REC	1	5/26/2015 2:10:51 PM	19344
Surr: Phenol-d5	41.1	0	11.3-108	H	%REC	1	5/26/2015 2:10:51 PM	19344
Surr: 2,4,6-Tribromophenol	67.2	0	15.7-154	H	%REC	1	5/26/2015 2:10:51 PM	19344
Surr: Nitrobenzene-d5	73.7	0	47.8-106	H	%REC	1	5/26/2015 2:10:51 PM	19344
Surr: 2-Fluorobiphenyl	77.5	0	21.3-123	H	%REC	1	5/26/2015 2:10:51 PM	19344
Surr: 4-Terphenyl-d14	52.7	0	14.3-135	H	%REC	1	5/26/2015 2:10:51 PM	19344
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	ND	0.065	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Toluene	0.45	0.11	1.0	J	µg/L	1	5/15/2015 5:08:12 PM	R26221
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,2,4-Trimethylbenzene	0.18	0.16	1.0	J	µg/L	1	5/15/2015 5:08:12 PM	R26221
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Naphthalene	ND	0.22	2.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Acetone	1.4	0.94	10	J	µg/L	1	5/15/2015 5:08:12 PM	R26221
Bromobenzene	ND	0.11	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Bromoform	ND	0.16	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Bromomethane	ND	1.2	3.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
2-Butanone	ND	0.36	10		µg/L	1	5/15/2015 5:08:12 PM	R26221
Carbon disulfide	ND	0.67	10		µg/L	1	5/15/2015 5:08:12 PM	R26221
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Chloroethane	ND	0.10	2.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Chloroform	ND	0.21	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Chloromethane	ND	0.17	3.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Dibromomethane	ND	0.23	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221

Refer to the QC Summary report and 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 1505618

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB06

Project: SWMU 10

Collection Date: 5/12/2015 5:15:00 PM

Lab ID: 1505618-001

Matrix: AQUEOUS

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
2-Hexanone	ND	0.48	10		µg/L	1	5/15/2015 5:08:12 PM	R26221
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/15/2015 5:08:12 PM	R26221
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Styrene	ND	0.11	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/15/2015 5:08:12 PM	R26221
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/15/2015 5:08:12 PM	R26221
Surr: 1,2-Dichloroethane-d4	97.6	0	70-130		%REC	1	5/15/2015 5:08:12 PM	R26221
Surr: 4-Bromofluorobenzene	103	0	70-130		%REC	1	5/15/2015 5:08:12 PM	R26221
Surr: Dibromofluoromethane	97.1	0	70-130		%REC	1	5/15/2015 5:08:12 PM	R26221
Surr: Toluene-d8	96.2	0	70-130		%REC	1	5/15/2015 5:08:12 PM	R26221

EPA METHOD 8015D: GASOLINE RANGE

Analyst: **cadg**

Refer to the QC Summary report and 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 **1505618**

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 EB06

Project: SWMU 10

Collection Date: 5/12/2015 5:15:00 PM

Lab ID: 1505618-001

Matrix: AQUEOUS

Received Date: 5/13/2015 4:23:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.040	0.050		mg/L	1	5/15/2015 5:08:12 PM	R26221
Surr: BFB	94.3	0	70-130		%REC	1	5/15/2015 5:08:12 PM	R26221

Refer to the QC Summary report and 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 22, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 15, 2015
Description :
Sample ID : 1505618-001G SWMU 10 EB06
Collected By :
Collection Date : 05/12/15 17:15

ESC Sample # : L765573-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.0050	mg/l	4500CN E-2011	05/21/15	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: 05/22/15 10:43 Printed: 05/22/15 10:43



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Est. 1970

REPORT OF ANALYSIS

May 22, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 15, 2015
Description :
Sample ID : 1505618-001H SWMU 10 EB06
Collected By :
Collection Date : 05/12/15 17:15

ESC Sample # : L765573-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	3500Cr C-2011	05/18/15	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: 05/22/15 10:43 Printed: 05/22/15 10:43



YOUR LAB OF CHOICE

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765573

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 22, 2015

Analyte	Result	Laboratory Blank Units % Rec	Limit	Batch	Date Analyzed
Hexavalent Chromium	< .0005	mg/l		WG789295	05/18/15 10:11
Cyanide	< .005	mg/l		WG790550	05/21/15 23:29

Analyte	Units	Result	Duplicate Duplicate	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.000590	0.000590	0.0	20	L764570-01	WG789295
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L764999-01	WG789295
Cyanide	mg/l	0.0	0.0	0.0	20	L765316-01	WG790550
Cyanide	mg/l	0.0	0.0	0.0	20	L765488-02	WG790550

Analyte	Units	Laboratory Control Sample Known Val Result	% Rec	Limit	Batch
Hexavalent Chromium	mg/l	.002	0.00189	94.5	90-110 WG789295
Cyanide	mg/l	.1	0.105	105.	90-110 WG790550

Analyte	Units	Result	Ref	Duplicate %Rec	Limit	RPD	Limit	Batch
Hexavalent Chromium	mg/l	0.00192	0.00189	96.0	90-110	1.57	20	WG789295
Cyanide	mg/l	0.102	0.105	102.	90-110	2.90	20	WG790550

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0517	0.0	.05	100.	90-110	L764728-02	WG789295
Cyanide	mg/l	0.203	0.0	.2	100.	90-110	L765316-03	WG790550

Analyte	Units	MSD	Ref	Duplicate %Rec	Limit	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0502	0.0517	100.	90-110	2.94	20	L764728-02	WG789295
Cyanide	mg/l	0.188	0.203	94.0	90-110	7.67	20	L765316-03	WG790550

Batch number /Run number / Sample number cross reference

WG789295: R3037684: L765573-02
WG790550: R3038621: L765573-01

* * 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#: 1505618

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 200.7: Metals					
Client ID:	PBW	Batch ID:	R26358	RunNo:	26358					
Prep Date:		Analysis Date:	5/21/2015	SeqNo:	783228	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:	R26358	RunNo:	26358					
Prep Date:		Analysis Date:	5/21/2015	SeqNo:	783229	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.47	0.0020	0.5000	0	94.4	85	115			
Beryllium	0.50	0.0020	0.5000	0	100	85	115			
Cadmium	0.48	0.0020	0.5000	0	96.7	85	115			
Chromium	0.47	0.0060	0.5000	0	93.7	85	115			
Cobalt	0.46	0.0060	0.5000	0	91.9	85	115			
Iron	0.47	0.020	0.5000	0	94.8	85	115			
Manganese	0.46	0.0020	0.5000	0	92.3	85	115			
Nickel	0.45	0.010	0.5000	0	91.0	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Vanadium	0.49	0.050	0.5000	0	98.5	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#: 1505618

04-Nov-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:	R26291	RunNo:	26291					
Prep Date:		Analysis Date:	5/19/2015	SeqNo:	780950	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	0.0014	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:	R26291	RunNo:	26291					
Prep Date:		Analysis Date:	5/19/2015	SeqNo:	780951	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.46	0.0020	0.5000	0	92.3	85	115			
Beryllium	0.48	0.0020	0.5000	0	96.8	85	115			
Cadmium	0.49	0.0020	0.5000	0	97.7	85	115			
Chromium	0.46	0.0060	0.5000	0	92.1	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.7	85	115			
Iron	0.50	0.020	0.5000	0	100	85	115			
Manganese	0.47	0.0020	0.5000	0	93.4	85	115			
Nickel	0.46	0.010	0.5000	0	92.1	85	115			
Silver	0.097	0.0050	0.1000	0	96.8	85	115			
Vanadium	0.47	0.050	0.5000	0	94.9	85	115			
Zinc	0.46	0.010	0.5000	0	91.9	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#: 1505618

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

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
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: R26325				RunNo: 26325					
Prep Date:	Analysis Date: 5/20/2015				SeqNo: 782323		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#: 1505618

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID LCS	SampType: LCS				TestCode: EPA 200.8: Metals					
Client ID: LCSW	Batch ID: R26325				RunNo: 26325					
Prep Date:	Analysis Date: 5/20/2015				SeqNo: 782323		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	98.4	85	115			
Arsenic	0.024	0.0010	0.02500	0	97.8	85	115			
Lead	0.012	0.00050	0.01250	0	97.5	85	115			
Selenium	0.024	0.0010	0.02500	0	96.6	85	115			

Sample ID LCS	SampType: LCS				TestCode: EPA 200.8: Metals					
Client ID: LCSW	Batch ID: R26325				RunNo: 26325					
Prep Date:	Analysis Date: 5/20/2015				SeqNo: 782324		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.026	0.0010	0.02500	0	102	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.026	0.0010	0.02500	0	102	85	115			

Sample ID MB	SampType: MBLK				TestCode: EPA 200.8: Metals					
Client ID: PBW	Batch ID: R26325				RunNo: 26325					
Prep Date:	Analysis Date: 5/20/2015				SeqNo: 782326		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: R26325				RunNo: 26325					
Prep Date:	Analysis Date: 5/20/2015				SeqNo: 782327		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 150423-004AMS	SampType: MS				TestCode: EPA 200.8: Metals					
Client ID: BatchQC	Batch ID: R26325				RunNo: 26325					
Prep Date:	Analysis Date: 5/20/2015				SeqNo: 786691		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	102	70	130			
Arsenic	0.031	0.0010	0.02500	0	125	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#: 1505618

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	150423-004AMS			SampType:	MS			TestCode:	EPA 200.8: Metals		
Client ID:	BatchQC			Batch ID:	R26325			RunNo:	26325		
Prep Date:				Analysis Date:	5/20/2015			SeqNo:	786691		Units: mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Selenium	0.027	0.0010	0.02500	0	109	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#: 1505618

04-Nov-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								

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R26325		RunNo: 26325					
Prep Date:			Analysis Date: 5/20/2015		SeqNo: 782370		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#: 1505618

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS			SampType:	LCS			TestCode:	EPA 200.8: Dissolved Metals		
Client ID:	LCSW			Batch ID:	R26325			RunNo:	26325		
Prep Date:				Analysis Date:	5/20/2015			SeqNo:	782370		
								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	98.4	85	115				
Arsenic	0.024	0.0010	0.02500	0	97.8	85	115				
Lead	0.012	0.00050	0.01250	0	97.5	85	115				
Selenium	0.024	0.0010	0.02500	0	96.6	85	115				

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R26325		RunNo: 26325					
Prep Date:			Analysis Date: 5/20/2015		SeqNo: 782371		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.026	0.0010	0.02500	0	102	85	115			
Lead	0.013	0.00050	0.01250	0	100	85	115			
Selenium	0.026	0.0010	0.02500	0	102	85	115			

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: R26325			RunNo: 26325					
Prep Date:		Analysis Date: 5/20/2015			SeqNo: 782372		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: R26325			RunNo: 26325					
Prep Date:		Analysis Date: 5/20/2015			SeqNo: 782373		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#: 1505618

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19401		SampType: MBLK		TestCode: EPA Method 245.1: Mercury					
Client ID:	PBW		Batch ID: 19401		RunNo: 26454					
Prep Date:	5/27/2015		Analysis Date: 5/28/2015		SeqNo: 786366		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercurv	0.00012	0.00020								J

Sample ID	LCS-19401		SampType: LCS		TestCode: EPA Method 245.1: Mercury					
Client ID:	LCSW		Batch ID: 19401		RunNo: 26454					
Prep Date:	5/27/2015		Analysis Date: 5/28/2015		SeqNo: 786367		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0048	0.00020	0.005000	0	95.3	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#: 1505618

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R26194		RunNo: 26194							
Prep Date:	Analysis Date: 5/14/2015		SeqNo: 777996		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: R26194		RunNo: 26194							
Prep Date:	Analysis Date: 5/14/2015		SeqNo: 777997		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	99.1	90	110			
Chloride	4.9	0.50	5.000	0	97.3	90	110			
Sulfate	9.9	0.50	10.00	0	99.0	90	110			

Sample ID 1505618-001DMS	SampType: MS		TestCode: EPA Method 300.0: Anions							
Client ID: SWMU 10 EB06	Batch ID: R26194		RunNo: 26194							
Prep Date:	Analysis Date: 5/14/2015		SeqNo: 778011		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	105	75.3	111			
Chloride	4.8	0.50	5.000	0	95.3	81.2	116			
Sulfate	9.8	0.50	10.00	0	97.5	84.2	113			

Sample ID 1505618-001DMSD	SampType: MSD		TestCode: EPA Method 300.0: Anions							
Client ID: SWMU 10 EB06	Batch ID: R26194		RunNo: 26194							
Prep Date:	Analysis Date: 5/14/2015		SeqNo: 778012		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	75.3	111	0.803	20	
Chloride	4.8	0.50	5.000	0	95.9	81.2	116	0.597	20	
Sulfate	9.8	0.50	10.00	0	98.0	84.2	113	0.519	20	

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R26194		RunNo: 26194							
Prep Date:	Analysis Date: 5/14/2015		SeqNo: 778054		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#: 1505618

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW		Batch ID: R26194		RunNo: 26194					
Prep Date:			Analysis Date: 5/14/2015		SeqNo: 778055		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	105	90	110			
Chloride	4.8	0.50	5.000	0	96.5	90	110			
Sulfate	9.8	0.50	10.00	0	97.7	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#: 1505618

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19246		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW		Batch ID: 19246		RunNo: 26216					
Prep Date:	5/15/2015		Analysis Date: 5/15/2015		SeqNo: 778433		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	1.4		1.000		137	76.5	150			

Sample ID	LCS-19246		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 19246		RunNo: 26216					
Prep Date:	5/15/2015		Analysis Date: 5/15/2015		SeqNo: 778434		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	117	60.1	156			
Surr: DNOP	0.62		0.5000		124	76.5	150			

Sample ID	1505618-001CMS		SampType: MS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	SWMU 10 EB06		Batch ID: 19246		RunNo: 26216					
Prep Date:	5/15/2015		Analysis Date: 5/15/2015		SeqNo: 778436		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	6.2	1.0	5.000	0	123	75.9	164			
Surr: DNOP	0.64		0.5000		129	76.5	150			

Sample ID	1505618-001CMSD		SampType:	MSD		TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	SWMU 10 EB06		Batch ID:	19246		RunNo:	26216				
Prep Date:	5/15/2015		Analysis Date:	5/15/2015		SeqNo:	778437		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	6.1	1.0	5.000	0	121	75.9	164	1.82	22.1		
Surr: DNOP	0.66		0.5000		131	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#: 1505618

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R26221	RunNo:	26221					
Prep Date:		Analysis Date:	5/15/2015	SeqNo:	778328	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)	0.34	1.0								J
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	0.48	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								
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#: 1505618

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R26221	RunNo:	26221					
Prep Date:		Analysis Date:	5/15/2015	SeqNo:	778328	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	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	R26221	RunNo:	26221					
Prep Date:		Analysis Date:	5/15/2015	SeqNo:	778330	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	20	1.0	20.00	0	101	70	130			
Chlorobenzene	20	1.0	20.00	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505618

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID 100ng lcs	SampType: LCS		TestCode: EPA Method 8260B: VOLATILES							
Client ID: LCSW	Batch ID: R26221		RunNo: 26221							
Prep Date:	Analysis Date: 5/15/2015		SeqNo: 778330		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	119	75.6	144			
Trichloroethene (TCE)	19	1.0	20.00	0	94.1	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	9.6		10.00		95.6	70	130			
Surr: Toluene-d8	9.9		10.00		98.8	70	130			

Sample ID 1505618-001a ms	SampType: MS		TestCode: EPA Method 8260B: VOLATILES							
Client ID: SWMU 10 EB06	Batch ID: R26221		RunNo: 26221							
Prep Date:	Analysis Date: 5/15/2015		SeqNo: 778718		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.3	70	130			
Toluene	20	1.0	20.00	0.4492	100	70	130			
Chlorobenzene	20	1.0	20.00	0	97.8	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	111	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	87.3	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.3	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		99.9	70	130			
Surr: Dibromofluoromethane	9.5		10.00		94.8	70	130			
Surr: Toluene-d8	10		10.00		99.9	70	130			

Sample ID 1505618-001a msd	SampType: MSD		TestCode: EPA Method 8260B: VOLATILES							
Client ID: SWMU 10 EB06	Batch ID: R26221		RunNo: 26221							
Prep Date:	Analysis Date: 5/15/2015		SeqNo: 778719		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.5	70	130	0.269	20	
Toluene	20	1.0	20.00	0.4492	97.1	70	130	2.98	20	
Chlorobenzene	19	1.0	20.00	0	92.7	70	130	5.38	20	
1,1-Dichloroethene	21	1.0	20.00	0	103	70	130	6.67	20	
Trichloroethene (TCE)	16	1.0	20.00	0	81.1	70	130	7.33	20	
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.1	70	130	0	0	
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130	0	0	
Surr: Dibromofluoromethane	9.7		10.00		97.4	70	130	0	0	
Surr: Toluene-d8	10		10.00		101	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	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505618

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19344		SampType: MBLK		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	PBW		Batch ID: 19344		RunNo: 26418					
Prep Date:	5/21/2015		Analysis Date: 5/26/2015		SeqNo: 785101		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10.0								
Acenaphthylene	ND	10.0								
Aniline	ND	10.0								
Anthracene	ND	10.0								
Azobenzene	ND	10.0								
Benz(a)anthracene	ND	10.0								
Benzo(a)pyrene	ND	10.0								
Benzo(b)fluoranthene	ND	10.0								
Benzo(g,h,i)perylene	ND	10.0								
Benzo(k)fluoranthene	ND	10.0								
Benzoic acid	ND	20.0								
Benzyl alcohol	ND	10.0								
Bis(2-chloroethoxy)methane	ND	10.0								
Bis(2-chloroethyl)ether	ND	10.0								
Bis(2-chloroisopropyl)ether	ND	10.0								
Bis(2-ethylhexyl)phthalate	ND	10.0								
4-Bromophenyl phenyl ether	ND	10.0								
Butyl benzyl phthalate	ND	10.0								
Carbazole	ND	10.0								
4-Chloro-3-methylphenol	ND	10.0								
4-Chloroaniline	ND	10.0								
2-Chloronaphthalene	ND	10.0								
2-Chlorophenol	ND	10.0								
4-Chlorophenyl phenyl ether	ND	10.0								
Chrysene	ND	10.0								
Di-n-butyl phthalate	ND	10.0								
Di-n-octyl phthalate	ND	10.0								
Dibenz(a,h)anthracene	ND	10.0								
Dibenzofuran	ND	10.0								
1,2-Dichlorobenzene	ND	10.0								
1,3-Dichlorobenzene	ND	10.0								
1,4-Dichlorobenzene	ND	10.0								
3,3'-Dichlorobenzidine	ND	10.0								
Diethyl phthalate	ND	10.0								
Dimethyl phthalate	ND	10.0								
2,4-Dichlorophenol	ND	20.0								
2,4-Dimethylphenol	ND	10.0								
4,6-Dinitro-2-methylphenol	ND	20.0								
2,4-Dinitrophenol	ND	20.0								

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#: 1505618

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19344	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	19344	RunNo:	26418					
Prep Date:	5/21/2015	Analysis Date:	5/26/2015	SeqNo:	785101	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10.0								
2,6-Dinitrotoluene	ND	10.0								
Fluoranthene	ND	10.0								
Fluorene	ND	10.0								
Hexachlorobenzene	ND	10.0								
Hexachlorobutadiene	ND	10.0								
Hexachlorocyclopentadiene	ND	10.0								
Hexachloroethane	ND	10.0								
Indeno(1,2,3-cd)pyrene	ND	10.0								
Isophorone	ND	10.0								
1-Methylnaphthalene	ND	10.0								
2-Methylnaphthalene	ND	10.0								
2-Methylphenol	ND	10.0								
3+4-Methylphenol	ND	10.0								
N-Nitrosodi-n-propylamine	ND	10.0								
N-Nitrosodimethylamine	ND	10.0								
N-Nitrosodiphenylamine	ND	10.0								
Naphthalene	ND	10.0								
2-Nitroaniline	ND	10.0								
3-Nitroaniline	ND	10.0								
4-Nitroaniline	ND	10.0								
Nitrobenzene	ND	10.0								
2-Nitrophenol	ND	10.0								
4-Nitrophenol	ND	10.0								
Pentachlorophenol	ND	20.0								
Phenanthrene	ND	10.0								
Phenol	ND	10.0								
Pyrene	ND	10.0								
Pyridine	ND	10.0								
1,2,4-Trichlorobenzene	ND	10.0								
2,4,5-Trichlorophenol	ND	10.0								
2,4,6-Trichlorophenol	ND	10.0								
Surr: 2-Fluorophenol	112		200.0		56.1	14.9	111			
Surr: Phenol-d5	86.3		200.0		43.2	11.3	108			
Surr: 2,4,6-Tribromophenol	146		200.0		72.8	15.7	154			
Surr: Nitrobenzene-d5	77.2		100.0		77.2	47.8	106			
Surr: 2-Fluorobiphenyl	78.8		100.0		78.8	21.3	123			
Surr: 4-Terphenyl-d14	70.9		100.0		70.9	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#: 1505618

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-19344		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSW		Batch ID: 19344		RunNo: 26418					
Prep Date:	5/21/2015		Analysis Date: 5/26/2015		SeqNo: 785103		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	68.5	10.0	100.0	0	68.5	47.8	99.7			
4-Chloro-3-methylphenol	152	10.0	200.0	0	76.0	58.1	103			
2-Chlorophenol	157	10.0	200.0	0	78.5	49.5	96.8			
1,4-Dichlorobenzene	64.5	10.0	100.0	0	64.5	40.4	89.4			
2,4-Dinitrotoluene	62.9	10.0	100.0	0	62.9	38.6	91.3			
N-Nitrosodi-n-propylamine	85.7	10.0	100.0	0	85.7	53.9	95.6			
4-Nitrophenol	85.5	10.0	200.0	0	42.8	26.4	108			
Pentachlorophenol	116	20.0	200.0	0	58.1	36.5	86.6			
Phenol	99.9	10.0	200.0	0	50.0	29.3	108			
Pyrene	76.7	10.0	100.0	0	76.7	45.7	100			
1,2,4-Trichlorobenzene	67.7	10.0	100.0	0	67.7	39.3	94.5			
Surr: 2-Fluorophenol	127		200.0		63.6	14.9	111			
Surr: Phenol-d5	104		200.0		52.0	11.3	108			
Surr: 2,4,6-Tribromophenol	146		200.0		73.1	15.7	154			
Surr: Nitrobenzene-d5	83.7		100.0		83.7	47.8	106			
Surr: 2-Fluorobiphenyl	74.9		100.0		74.9	21.3	123			
Surr: 4-Terphenyl-d14	57.8		100.0		57.8	14.3	135			

Sample ID	Icsd-19344		SampType: LCSD		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS02		Batch ID: 19344		RunNo: 26418					
Prep Date:	5/21/2015		Analysis Date: 5/26/2015		SeqNo: 785105		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	69.6	10.0	100.0	0	69.6	47.8	99.7	1.65	28.2	
4-Chloro-3-methylphenol	152	10.0	200.0	0	76.0	58.1	103	0	24.4	
2-Chlorophenol	138	10.0	200.0	0	69.0	49.5	96.8	12.8	28.1	
1,4-Dichlorobenzene	56.8	10.0	100.0	0	56.8	40.4	89.4	12.8	31.2	
2,4-Dinitrotoluene	53.4	10.0	100.0	0	53.4	38.6	91.3	16.4	44.4	
N-Nitrosodi-n-propylamine	79.3	10.0	100.0	0	79.3	53.9	95.6	7.73	24.2	
4-Nitrophenol	74.3	10.0	200.0	0	37.2	26.4	108	14.0	36.6	
Pentachlorophenol	110	20.0	200.0	0	55.2	36.5	86.6	5.05	29.5	
Phenol	89.2	10.0	200.0	0	44.6	29.3	108	11.3	30	
Pyrene	73.4	10.0	100.0	0	73.4	45.7	100	4.45	31	
1,2,4-Trichlorobenzene	63.0	10.0	100.0	0	63.0	39.3	94.5	7.23	24	
Surr: 2-Fluorophenol	118		200.0		59.1	14.9	111	0	0	
Surr: Phenol-d5	97.2		200.0		48.6	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	149		200.0		74.4	15.7	154	0	0	
Surr: Nitrobenzene-d5	77.1		100.0		77.1	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	76.7		100.0		76.7	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#: 1505618

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Icsd-19344		SampType: LCSD		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS02		Batch ID: 19344		RunNo: 26418					
Prep Date:	5/21/2015		Analysis Date: 5/26/2015		SeqNo: 785105		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	57.3		100.0		57.3	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505618

04-Nov-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:	R26221	RunNo:	26221					
Prep Date:		Analysis Date:	5/15/2015	SeqNo:	778743	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	9.7		10.00		97.2	70	130			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R26221	RunNo:	26221					
Prep Date:		Analysis Date:	5/15/2015	SeqNo:	778745	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	90.8	80.6	122			
Surr: BFB	9.6		10.00		96.4	70	130			

Sample ID	1505618-001b ms	SampType:	MS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	SWMU 10 EB06	Batch ID:	R26221	RunNo:	26221					
Prep Date:		Analysis Date:	5/15/2015	SeqNo:	778820	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	89.2	56.9	133			
Surr: BFB	10		10.00		102	70	130			

Sample ID	1505618-001b msd	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	SWMU 10 EB06	Batch ID:	R26221	RunNo:	26221					
Prep Date:		Analysis Date:	5/15/2015	SeqNo:	778821	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.42	0.050	0.5000	0	83.2	56.9	133	7.01	20	
Surr: BFB	9.6		10.00		95.9	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

Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1505618

RcptNo: 1

Received by/date:

CS

05/13/15

Logged By:

Ashley Gallegos

5/13/2015 4:23:00 PM

[Signature]

Completed By:

Ashley Gallegos

5/14/2015 8:17:10 AM

[Signature]

Reviewed By:

[Signature]

05/14/15

Chain of Custody

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

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°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 into a 500ml unpreserved bottle from a 1L Amber

18. Cooler Information

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

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 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

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 04, 2015

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

RE: SWMU 10

OrderNo.: 1505698

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/15/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 22, 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'.

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#: 1505698
Date: 11/4/2015

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding EPA Method 8260:

The Matrix Spike (MS) recoveries were low and the Matrix Spike Duplicate (MSD) recoveries were acceptable. The MS was reanalyzed and confirmed to have low recoveries which is attributed to the sample matrix.

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-11-GW

Project: SWMU 10

Collection Date: 5/14/2015 11:20:00 AM

Lab ID: 1505698-001

Matrix: AQUEOUS

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH	
Diesel Range Organics (DRO)	5.5	0.91	1.0		mg/L	1	5/15/2015 6:51:00 PM	19246
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/15/2015 6:51:00 PM	19246
Surr: DNOP	118	0	76.5-150		%REC	1	5/15/2015 6:51:00 PM	19246
EPA METHOD 300.0: ANIONS							Analyst: LGT	
Fluoride	ND	0.15	0.50		mg/L	5	5/15/2015 6:38:40 PM	R26247
Chloride	2000	27	100		mg/L	200	5/19/2015 7:50:31 PM	R26305
Sulfate	380	2.3	10		mg/L	20	5/15/2015 6:51:04 PM	R26247
EPA METHOD 200.7: DISSOLVED METALS							Analyst: JLF	
Barium	0.24	0.00095	0.0020		mg/L	1	5/15/2015 5:28:13 PM	R26242
Beryllium	ND	0.00031	0.0020		mg/L	1	5/15/2015 5:28:13 PM	R26242
Cadmium	ND	0.00097	0.0020		mg/L	1	5/18/2015 7:07:26 PM	R26265
Chromium	0.0054	0.0018	0.0060	J	mg/L	1	5/15/2015 5:28:13 PM	R26242
Cobalt	0.010	0.0013	0.0060		mg/L	1	5/15/2015 5:28:13 PM	R26242
Iron	0.78	0.0073	0.020	*	mg/L	1	5/15/2015 5:28:13 PM	R26242
Manganese	3.9	0.0013	0.010	*	mg/L	5	5/18/2015 7:09:46 PM	R26265
Nickel	0.024	0.0021	0.010		mg/L	1	5/15/2015 5:28:13 PM	R26242
Silver	ND	0.0012	0.0050		mg/L	1	5/18/2015 7:07:26 PM	R26265
Vanadium	0.0052	0.0015	0.050	J	mg/L	1	5/15/2015 5:28:13 PM	R26242
Zinc	0.049	0.0028	0.010		mg/L	1	5/15/2015 5:28:13 PM	R26242
EPA METHOD 200.7: METALS							Analyst: ELS	
Barium	5.3	0.048	0.10	*	mg/L	50	5/21/2015 3:37:54 PM	19333
Beryllium	0.017	0.00031	0.0020	*	mg/L	1	5/21/2015 3:13:08 PM	19333
Cadmium	ND	0.00097	0.0020		mg/L	1	5/21/2015 3:13:08 PM	19333
Chromium	0.073	0.0022	0.0060		mg/L	1	5/21/2015 3:13:08 PM	19333
Cobalt	0.077	0.0013	0.0060		mg/L	1	5/21/2015 3:13:08 PM	19333
Iron	86	1.5	4.0	*	mg/L	200	5/21/2015 3:39:43 PM	19333
Manganese	13	0.076	0.10	*	mg/L	50	5/21/2015 3:37:54 PM	19333
Nickel	0.13	0.0023	0.010	*	mg/L	1	5/21/2015 3:13:08 PM	19333
Silver	ND	0.0021	0.0050		mg/L	1	5/21/2015 3:13:08 PM	19333
Vanadium	0.12	0.0015	0.050		mg/L	1	5/21/2015 3:13:08 PM	19333
Zinc	0.19	0.0036	0.010		mg/L	1	5/21/2015 3:13:08 PM	19333
EPA 200.8: DISSOLVED METALS							Analyst: DBD	
Antimony	ND	0.0014	0.010		mg/L	10	5/19/2015 3:36:05 PM	R26294
Arsenic	0.0039	0.00065	0.010	J	mg/L	10	5/19/2015 3:36:05 PM	R26294
Lead	0.00074	0.00026	0.010	J	mg/L	10	5/19/2015 3:36:05 PM	R26294
Selenium	0.0076	0.0019	0.010	J	mg/L	10	5/19/2015 3:36:05 PM	R26294

EPA 200.8: METALSAnalyst: **TES**

Refer to the QC Summary report and 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 1505698

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-11-GW

Project: SWMU 10

Collection Date: 5/14/2015 11:20:00 AM

Lab ID: 1505698-001

Matrix: AQUEOUS

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: TES	
Antimony	ND	0.0022	0.0050		mg/L	5	5/26/2015 2:11:15 PM	19333
Arsenic	0.016	0.0015	0.0050	*	mg/L	5	5/21/2015 2:47:37 PM	19333
Lead	0.18	0.00047	0.0050	*	mg/L	10	5/26/2015 5:11:20 PM	19333
Selenium	0.0099	0.0019	0.010	J	mg/L	10	5/21/2015 2:50:41 PM	19333
EPA METHOD 245.1: MERCURY							Analyst: MED	
Mercury	0.00075	0.000059	0.00020		mg/L	1	5/28/2015 10:05:07 AM	19401
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	3.8	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Acenaphthylene	ND	3.7	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Aniline	ND	3.1	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Anthracene	ND	3.2	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Azobenzene	ND	4.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Benz(a)anthracene	ND	5.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Benzo(a)pyrene	ND	5.4	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Benzo(b)fluoranthene	ND	4.8	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Benzo(g,h,i)perylene	ND	6.3	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Benzo(k)fluoranthene	ND	5.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Benzoic acid	ND	2.1	40		µg/L	1	5/26/2015 2:38:45 PM	19344
Benzyl alcohol	ND	2.3	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Bis(2-chloroethoxy)methane	ND	3.6	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Bis(2-chloroethyl)ether	ND	3.5	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Bis(2-chloroisopropyl)ether	ND	4.1	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Bis(2-ethylhexyl)phthalate	ND	6.7	20		µg/L	1	5/26/2015 2:38:45 PM	19344
4-Bromophenyl phenyl ether	ND	2.8	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Butyl benzyl phthalate	ND	4.7	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Carbazole	ND	3.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
4-Chloro-3-methylphenol	ND	2.7	20		µg/L	1	5/26/2015 2:38:45 PM	19344
4-Chloroaniline	ND	3.7	20		µg/L	1	5/26/2015 2:38:45 PM	19344
2-Chloronaphthalene	ND	3.4	20		µg/L	1	5/26/2015 2:38:45 PM	19344
2-Chlorophenol	ND	2.4	20		µg/L	1	5/26/2015 2:38:45 PM	19344
4-Chlorophenyl phenyl ether	ND	4.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Chrysene	ND	4.3	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Di-n-butyl phthalate	ND	4.2	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Di-n-octyl phthalate	ND	3.9	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Dibenz(a,h)anthracene	ND	6.5	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Dibenzofuran	ND	3.8	20		µg/L	1	5/26/2015 2:38:45 PM	19344
1,2-Dichlorobenzene	ND	3.8	20		µg/L	1	5/26/2015 2:38:45 PM	19344
1,3-Dichlorobenzene	ND	3.4	20		µg/L	1	5/26/2015 2:38:45 PM	19344

Refer to the QC Summary report and 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 1505698

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-11-GW

Project: SWMU 10

Collection Date: 5/14/2015 11:20:00 AM

Lab ID: 1505698-001

Matrix: AQUEOUS

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
1,4-Dichlorobenzene	ND	2.5	20		µg/L	1	5/26/2015 2:38:45 PM	19344
3,3'-Dichlorobenzidine	ND	5.2	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Diethyl phthalate	ND	3.3	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Dimethyl phthalate	ND	4.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
2,4-Dichlorophenol	ND	2.8	40		µg/L	1	5/26/2015 2:38:45 PM	19344
2,4-Dimethylphenol	ND	3.7	20		µg/L	1	5/26/2015 2:38:45 PM	19344
4,6-Dinitro-2-methylphenol	ND	2.7	40		µg/L	1	5/26/2015 2:38:45 PM	19344
2,4-Dinitrophenol	ND	2.1	40		µg/L	1	5/26/2015 2:38:45 PM	19344
2,4-Dinitrotoluene	ND	2.9	20		µg/L	1	5/26/2015 2:38:45 PM	19344
2,6-Dinitrotoluene	ND	3.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Fluoranthene	ND	3.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Fluorene	ND	3.3	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Hexachlorobenzene	ND	4.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Hexachlorobutadiene	ND	3.9	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Hexachlorocyclopentadiene	ND	2.9	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Hexachloroethane	ND	3.2	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Indeno(1,2,3-cd)pyrene	ND	4.9	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Isophorone	ND	3.9	20		µg/L	1	5/26/2015 2:38:45 PM	19344
1-Methylnaphthalene	20	3.6	20	J	µg/L	1	5/26/2015 2:38:45 PM	19344
2-Methylnaphthalene	16	4.5	20	J	µg/L	1	5/26/2015 2:38:45 PM	19344
2-Methylphenol	ND	2.5	20		µg/L	1	5/26/2015 2:38:45 PM	19344
3+4-Methylphenol	ND	3.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
N-Nitrosodi-n-propylamine	ND	4.1	20		µg/L	1	5/26/2015 2:38:45 PM	19344
N-Nitrosodimethylamine	ND	2.8	20		µg/L	1	5/26/2015 2:38:45 PM	19344
N-Nitrosodiphenylamine	ND	4.9	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Naphthalene	4.4	3.7	20	J	µg/L	1	5/26/2015 2:38:45 PM	19344
2-Nitroaniline	ND	3.6	20		µg/L	1	5/26/2015 2:38:45 PM	19344
3-Nitroaniline	ND	3.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
4-Nitroaniline	ND	2.5	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Nitrobenzene	ND	3.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
2-Nitrophenol	ND	2.5	20		µg/L	1	5/26/2015 2:38:45 PM	19344
4-Nitrophenol	ND	2.8	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Pentachlorophenol	ND	2.3	40		µg/L	1	5/26/2015 2:38:45 PM	19344
Phenanthrene	ND	4.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Phenol	ND	2.2	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Pyrene	ND	4.6	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Pyridine	ND	3.3	20		µg/L	1	5/26/2015 2:38:45 PM	19344
1,2,4-Trichlorobenzene	ND	4.0	20		µg/L	1	5/26/2015 2:38:45 PM	19344
2,4,5-Trichlorophenol	ND	3.2	20		µg/L	1	5/26/2015 2:38:45 PM	19344

Refer to the QC Summary report and 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 1505698

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-11-GW

Project: SWMU 10

Collection Date: 5/14/2015 11:20:00 AM

Lab ID: 1505698-001

Matrix: AQUEOUS

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
2,4,6-Trichlorophenol	ND	2.5	20		µg/L	1	5/26/2015 2:38:45 PM	19344
Surr: 2-Fluorophenol	50.9	0	14.9-111		%REC	1	5/26/2015 2:38:45 PM	19344
Surr: Phenol-d5	40.8	0	11.3-108		%REC	1	5/26/2015 2:38:45 PM	19344
Surr: 2,4,6-Tribromophenol	80.2	0	15.7-154		%REC	1	5/26/2015 2:38:45 PM	19344
Surr: Nitrobenzene-d5	76.4	0	47.8-106		%REC	1	5/26/2015 2:38:45 PM	19344
Surr: 2-Fluorobiphenyl	80.3	0	21.3-123		%REC	1	5/26/2015 2:38:45 PM	19344
Surr: 4-Terphenyl-d14	75.6	0	14.3-135		%REC	1	5/26/2015 2:38:45 PM	19344
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	2.5	0.13	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Toluene	6.0	0.22	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Ethylbenzene	40	0.20	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Methyl tert-butyl ether (MTBE)	14	0.35	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,2,4-Trimethylbenzene	64	0.32	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,3,5-Trimethylbenzene	22	0.25	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.35	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.27	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Naphthalene	45	0.44	4.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1-Methylnaphthalene	70	1.1	8.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
2-Methylnaphthalene	98	1.2	8.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Acetone	8.8	1.9	20	J	µg/L	2	5/20/2015 1:54:40 PM	R26322
Bromobenzene	ND	0.22	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Bromodichloromethane	ND	0.18	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Bromoform	ND	0.32	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Bromomethane	ND	2.3	6.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
2-Butanone	ND	0.73	20		µg/L	2	5/20/2015 1:54:40 PM	R26322
Carbon disulfide	ND	1.3	20		µg/L	2	5/20/2015 1:54:40 PM	R26322
Carbon Tetrachloride	ND	0.16	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Chlorobenzene	ND	0.19	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Chloroethane	ND	0.21	4.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Chloroform	ND	0.43	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Chloromethane	ND	0.35	6.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
2-Chlorotoluene	ND	0.16	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
4-Chlorotoluene	ND	0.30	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
cis-1,2-DCE	ND	0.16	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
cis-1,3-Dichloropropene	ND	0.27	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.27	4.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Dibromochloromethane	ND	0.19	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Dibromomethane	ND	0.47	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,2-Dichlorobenzene	ND	0.24	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322

Refer to the QC Summary report and 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 1505698

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-11-GW

Project: SWMU 10

Collection Date: 5/14/2015 11:20:00 AM

Lab ID: 1505698-001

Matrix: AQUEOUS

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
1,3-Dichlorobenzene	ND	0.19	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,4-Dichlorobenzene	ND	0.33	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Dichlorodifluoromethane	ND	1.4	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,1-Dichloroethane	0.93	0.80	2.0	J	µg/L	2	5/20/2015 1:54:40 PM	R26322
1,1-Dichloroethene	ND	0.20	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,2-Dichloropropane	ND	0.30	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,3-Dichloropropane	ND	0.34	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
2,2-Dichloropropane	ND	0.30	4.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,1-Dichloropropene	ND	0.23	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Hexachlorobutadiene	ND	0.50	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
2-Hexanone	ND	0.95	20		µg/L	2	5/20/2015 1:54:40 PM	R26322
Isopropylbenzene	8.5	0.30	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
4-Isopropyltoluene	2.7	0.38	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
4-Methyl-2-pentanone	ND	0.51	20		µg/L	2	5/20/2015 1:54:40 PM	R26322
Methylene Chloride	ND	0.72	6.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
n-Butylbenzene	3.4	0.49	6.0	J	µg/L	2	5/20/2015 1:54:40 PM	R26322
n-Propylbenzene	11	0.33	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
sec-Butylbenzene	2.2	0.46	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Styrene	ND	0.21	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
tert-Butylbenzene	ND	0.26	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.22	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.36	4.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Tetrachloroethene (PCE)	ND	0.32	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
trans-1,2-DCE	ND	0.19	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
trans-1,3-Dichloropropene	ND	0.23	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,2,3-Trichlorobenzene	ND	0.53	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,2,4-Trichlorobenzene	ND	0.57	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,1,1-Trichloroethane	ND	0.16	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,1,2-Trichloroethane	ND	0.16	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Trichloroethene (TCE)	ND	0.33	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Trichlorofluoromethane	ND	0.25	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
1,2,3-Trichloropropane	ND	0.32	4.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Vinyl chloride	ND	0.25	2.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Xylenes, Total	230	0.56	3.0		µg/L	2	5/20/2015 1:54:40 PM	R26322
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%REC	2	5/20/2015 1:54:40 PM	R26322
Surr: 4-Bromofluorobenzene	84.5	0	70-130		%REC	2	5/20/2015 1:54:40 PM	R26322
Surr: Dibromofluoromethane	102	0	70-130		%REC	2	5/20/2015 1:54:40 PM	R26322
Surr: Toluene-d8	93.4	0	70-130		%REC	2	5/20/2015 1:54:40 PM	R26322

EPA METHOD 8015D: GASOLINE RANGE

Analyst: cadg

Refer to the QC Summary report and 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 **1505698**

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-11-GW

Project: SWMU 10

Collection Date: 5/14/2015 11:20:00 AM

Lab ID: 1505698-001

Matrix: AQUEOUS

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	1.5	0.080	0.10		mg/L	2	5/20/2015 1:54:40 PM	R26322
Surr: BFB	95.4	0	70-130		%REC	2	5/20/2015 1:54:40 PM	R26322

Refer to the QC Summary report and 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 1505698

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: Trip Blank

Project: SWMU 10

Collection Date:

Lab ID: 1505698-002

Matrix: TRIP BLANK

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	ND	0.065	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Toluene	ND	0.11	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Ethylbenzene	0.11	0.10	1.0	J	µg/L	1	5/20/2015 3:21:13 PM	R26322
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,2,4-Trimethylbenzene	0.29	0.16	1.0	J	µg/L	1	5/20/2015 3:21:13 PM	R26322
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Naphthalene	0.31	0.22	2.0	J	µg/L	1	5/20/2015 3:21:13 PM	R26322
1-Methylnaphthalene	0.71	0.54	4.0	J	µg/L	1	5/20/2015 3:21:13 PM	R26322
2-Methylnaphthalene	1.1	0.59	4.0	J	µg/L	1	5/20/2015 3:21:13 PM	R26322
Acetone	ND	0.94	10		µg/L	1	5/20/2015 3:21:13 PM	R26322
Bromobenzene	ND	0.11	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Bromoform	ND	0.16	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Bromomethane	ND	1.2	3.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
2-Butanone	ND	0.36	10		µg/L	1	5/20/2015 3:21:13 PM	R26322
Carbon disulfide	ND	0.67	10		µg/L	1	5/20/2015 3:21:13 PM	R26322
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Chloroethane	ND	0.10	2.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Chloroform	ND	0.21	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Chloromethane	ND	0.17	3.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Dibromomethane	ND	0.23	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/20/2015 3:21:13 PM	R26322

Refer to the QC Summary report and 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 1505698

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: Trip Blank

Project: SWMU 10

Collection Date:

Lab ID: 1505698-002

Matrix: TRIP BLANK

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
2-Hexanone	ND	0.48	10		µg/L	1	5/20/2015 3:21:13 PM	R26322
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/20/2015 3:21:13 PM	R26322
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Styrene	ND	0.11	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/20/2015 3:21:13 PM	R26322
Xylenes, Total	0.41	0.28	1.5	J	µg/L	1	5/20/2015 3:21:13 PM	R26322
Surr: 1,2-Dichloroethane-d4	100	0	70-130		%REC	1	5/20/2015 3:21:13 PM	R26322
Surr: 4-Bromofluorobenzene	103	0	70-130		%REC	1	5/20/2015 3:21:13 PM	R26322
Surr: Dibromofluoromethane	101	0	70-130		%REC	1	5/20/2015 3:21:13 PM	R26322
Surr: Toluene-d8	98.1	0	70-130		%REC	1	5/20/2015 3:21:13 PM	R26322
EPA METHOD 8015D: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.040	0.050		mg/L	1	5/20/2015 3:21:13 PM	R26322
Surr: BFB	99.5	0	70-130		%REC	1	5/20/2015 3:21:13 PM	R26322

Refer to the QC Summary report and 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 22, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 15, 2015
Description :
Sample ID : 1505618-001G SWMU 10 EB06
Collected By :
Collection Date : 05/12/15 17:15

ESC Sample # : L765573-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.0050	mg/l	4500CN E-2011	05/21/15	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: 05/22/15 10:43 Printed: 05/22/15 10:43



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Mt. Juliet, TN 37122
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Fax (615) 758-5859

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Est. 1970

REPORT OF ANALYSIS

May 22, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 15, 2015
Description :
Sample ID : 1505618-001H SWMU 10 EB06
Collected By :
Collection Date : 05/12/15 17:15

ESC Sample # : L765573-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	3500Cr C-2011	05/18/15	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: 05/22/15 10:43 Printed: 05/22/15 10:43



YOUR LAB OF CHOICE

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765573

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 22, 2015

Analyte	Result	Laboratory Blank Units	% Rec	Limit	Batch	Date Analyzed
Hexavalent Chromium	< .0005	mg/l			WG789295	05/18/15 10:11
Cyanide	< .005	mg/l			WG790550	05/21/15 23:29

Analyte	Units	Result	Duplicate Duplicate	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.000590	0.000590	0.0	20	L764570-01	WG789295
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L764999-01	WG789295
Cyanide	mg/l	0.0	0.0	0.0	20	L765316-01	WG790550
Cyanide	mg/l	0.0	0.0	0.0	20	L765488-02	WG790550

Analyte	Units	Laboratory Control Known Val	Sample Result	% Rec	Limit	Batch
Hexavalent Chromium	mg/l	.002	0.00189	94.5	90-110	WG789295
Cyanide	mg/l	.1	0.105	105.	90-110	WG790550

Analyte	Units	Laboratory Control Result	Sample Ref	Duplicate %Rec	Limit	RPD	Limit	Batch
Hexavalent Chromium	mg/l	0.00192	0.00189	96.0	90-110	1.57	20	WG789295
Cyanide	mg/l	0.102	0.105	102.	90-110	2.90	20	WG790550

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0517	0.0	.05	100.	90-110	L764728-02	WG789295
Cyanide	mg/l	0.203	0.0	.2	100.	90-110	L765316-03	WG790550

Analyte	Units	Matrix Spike MSD	Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0502	0.0517	100.	90-110	2.94	20	L764728-02	WG789295
Cyanide	mg/l	0.188	0.203	94.0	90-110	7.67	20	L765316-03	WG790550

Batch number /Run number / Sample number cross reference

WG789295: R3037684: L765573-02
WG790550: R3038621: L765573-01

* * 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#: 1505698

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB		SampType:	MBLK		TestCode:	EPA Method 200.7: Metals			
Client ID:	PBW		Batch ID:	R26265		RunNo:	26265			
Prep Date:			Analysis Date:	5/18/2015		SeqNo:	780003		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Manganese	ND	0.0020								
Silver	ND	0.0050								

Sample ID	LCS		SampType:	LCS		TestCode:	EPA Method 200.7: Metals			
Client ID:	LCSW		Batch ID:	R26265		RunNo:	26265			
Prep Date:			Analysis Date:	5/18/2015		SeqNo:	780004		Units: mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.49	0.0020	0.5000	0	97.4	85	115			
Manganese	0.47	0.0020	0.5000	0	93.2	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			

Sample ID	MB-19333		SampType:	MBLK		TestCode:	EPA Method 200.7: Metals			
Client ID:	PBW		Batch ID:	19333		RunNo:	26358			
Prep Date:	5/20/2015		Analysis Date:	5/21/2015		SeqNo:	783226		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	0.0078	0.020								J
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS-19333		SampType:	LCS		TestCode:	EPA Method 200.7: Metals			
Client ID:	LCSW		Batch ID:	19333		RunNo:	26358			
Prep Date:	5/20/2015		Analysis Date:	5/21/2015		SeqNo:	783227		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	97.5	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.9	85	115			
Chromium	0.49	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.48	0.0060	0.5000	0	95.1	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#: 1505698

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS-19333		SampType: LCS		TestCode: EPA Method 200.7: Metals					
Client ID:	LCSW		Batch ID: 19333		RunNo: 26358					
Prep Date:	5/20/2015		Analysis Date: 5/21/2015		SeqNo: 783227		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.48	0.020	0.5000	0	96.5	85	115			
Manganese	0.48	0.0020	0.5000	0	95.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.3	85	115			
Silver	0.10	0.0050	0.1000	0	104	85	115			
Vanadium	0.51	0.050	0.5000	0	101	85	115			
Zinc	0.48	0.010	0.5000	0	96.2	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#: 1505698

04-Nov-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:	R26242		RunNo:	26242			
Prep Date:			Analysis Date:	5/15/2015		SeqNo:	779016	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0011	0.0020								J
Beryllium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
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:	R26242		RunNo:	26242			
Prep Date:			Analysis Date:	5/15/2015		SeqNo:	779017	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	95.6	85	115			
Beryllium	0.49	0.0020	0.5000	0	98.3	85	115			
Chromium	0.48	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.5	85	115			
Iron	0.51	0.020	0.5000	0	101	85	115			
Nickel	0.48	0.010	0.5000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.4	85	115			
Zinc	0.47	0.010	0.5000	0	94.4	85	115			

Sample ID	MB		SampType:	MBLK		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	PBW		Batch ID:	R26265		RunNo:	26265			
Prep Date:			Analysis Date:	5/18/2015		SeqNo:	780132	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Manganese	ND	0.0020								
Silver	ND	0.0050								

Sample ID	LCS		SampType:	LCS		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	LCSW		Batch ID:	R26265		RunNo:	26265			
Prep Date:			Analysis Date:	5/18/2015		SeqNo:	780133	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.49	0.0020	0.5000	0	98.2	85	115			
Manganese	0.46	0.0020	0.5000	0	91.7	85	115			
Silver	0.10	0.0050	0.1000	0	101	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#: 1505698

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

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
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID MB-19333	SampType: MBLK			TestCode: EPA 200.8: Metals						
Client ID: PBW	Batch ID: 19333			RunNo: 26348						
Prep Date: 5/20/2015	Analysis Date: 5/21/2015			SeqNo: 782930			Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

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#: 1505698

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19333		SampType:	MBLK		TestCode:	EPA 200.8: Metals			
Client ID:	PBW		Batch ID:	19333		RunNo:	26348			
Prep Date:	5/20/2015		Analysis Date:	5/21/2015		SeqNo:	782930		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	MB-19333		SampType:	MBLK		TestCode:	EPA 200.8: Metals			
Client ID:	PBW		Batch ID:	19333		RunNo:	26606			
Prep Date:	5/20/2015		Analysis Date:	6/3/2015		SeqNo:	792073		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.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the 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#: 1505698

04-Nov-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#: 1505698

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19401		SampType: MBLK		TestCode: EPA Method 245.1: Mercury					
Client ID:	PBW		Batch ID: 19401		RunNo: 26454					
Prep Date:	5/27/2015		Analysis Date: 5/28/2015		SeqNo: 786366		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercurv	0.00012	0.00020								J

Sample ID	LCS-19401		SampType: LCS		TestCode: EPA Method 245.1: Mercury					
Client ID:	LCSW		Batch ID: 19401		RunNo: 26454					
Prep Date:	5/27/2015		Analysis Date: 5/28/2015		SeqNo: 786367		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0048	0.00020	0.005000	0	95.3	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#: 1505698

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID: R26247			RunNo: 26247					
Prep Date:		Analysis Date: 5/15/2015			SeqNo: 779359		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.100								
Sulfate	ND	0.500								

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW		Batch ID: R26247		RunNo: 26247					
Prep Date:			Analysis Date: 5/15/2015		SeqNo: 779360		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.508	0.100	0.5000	0	102	90	110			
Sulfate	10.2	0.500	10.00	0	102	90	110			

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID: R26305			RunNo: 26305					
Prep Date:		Analysis Date: 5/19/2015			SeqNo: 781436		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:	R26305		RunNo:	26305				
Prep Date:			Analysis Date:	5/19/2015		SeqNo:	781437	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	93.9	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#: 1505698

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19246		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW		Batch ID: 19246		RunNo: 26216					
Prep Date:	5/15/2015		Analysis Date: 5/15/2015		SeqNo: 778433		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	1.4		1.000		137	76.5	150			

Sample ID	LCS-19246		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 19246		RunNo: 26216					
Prep Date:	5/15/2015		Analysis Date: 5/15/2015		SeqNo: 778434		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	117	60.1	156			
Surr: DNOP	0.62		0.5000		124	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#: 1505698

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5mL rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R26322			RunNo: 26322					
Prep Date:		Analysis Date: 5/20/2015			SeqNo: 782101		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	0.20	1.0								J
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	0.35	1.0								J
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#: 1505698

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782101	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	0.43	1.0								J
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	12		10.00		116	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.4		10.00		93.8	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782103	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.5	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	20	1.0	20.00	0	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#: 1505698

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID 100ng lcs	SampType: LCS		TestCode: EPA Method 8260B: VOLATILES							
Client ID: LCSW	Batch ID: R26322		RunNo: 26322							
Prep Date:	Analysis Date: 5/20/2015		SeqNo: 782103		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	21	1.0	20.00	0	107	75.6	144			
Trichloroethene (TCE)	17	1.0	20.00	0	86.6	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.7	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.1	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID 1505698-001a ms	SampType: MS		TestCode: EPA Method 8260B: VOLATILES							
Client ID: SWMU 10-11-GW	Batch ID: R26322		RunNo: 26322							
Prep Date:	Analysis Date: 5/20/2015		SeqNo: 782111		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	6.6	2.0	40.00	2.493	10.4	70	130			S
Toluene	11	2.0	40.00	5.999	13.4	70	130			S
Chlorobenzene	4.7	2.0	40.00	0	11.7	70	130			S
1,1-Dichloroethene	3.1	2.0	40.00	0.5016	6.58	70	130			S
Trichloroethene (TCE)	4.0	2.0	40.00	0	9.98	70	130			S
Surr: 1,2-Dichloroethane-d4	21		20.00		105	70	130			
Surr: 4-Bromofluorobenzene	19		20.00		94.1	70	130			
Surr: Dibromofluoromethane	19		20.00		93.8	70	130			
Surr: Toluene-d8	20		20.00		101	70	130			

Sample ID 1505698-001a msd	SampType: MSD		TestCode: EPA Method 8260B: VOLATILES							
Client ID: SWMU 10-11-GW	Batch ID: R26322		RunNo: 26322							
Prep Date:	Analysis Date: 5/20/2015		SeqNo: 782112		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	40	2.0	40.00	2.493	92.7	70	130	142	20	R
Toluene	43	2.0	40.00	5.999	92.8	70	130	117	20	R
Chlorobenzene	36	2.0	40.00	0	90.0	70	130	154	20	R
1,1-Dichloroethene	39	2.0	40.00	0.5016	95.0	70	130	170	20	R
Trichloroethene (TCE)	34	2.0	40.00	0	85.4	70	130	158	20	R
Surr: 1,2-Dichloroethane-d4	23		20.00		114	70	130	0	0	
Surr: 4-Bromofluorobenzene	16		20.00		79.0	70	130	0	0	
Surr: Dibromofluoromethane	21		20.00		105	70	130	0	0	
Surr: Toluene-d8	21		20.00		103	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	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505698

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19344		SampType: MBLK		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	PBW		Batch ID: 19344		RunNo: 26418					
Prep Date:	5/21/2015		Analysis Date: 5/26/2015		SeqNo: 785101		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10.0								
Acenaphthylene	ND	10.0								
Aniline	ND	10.0								
Anthracene	ND	10.0								
Azobenzene	ND	10.0								
Benz(a)anthracene	ND	10.0								
Benzo(a)pyrene	ND	10.0								
Benzo(b)fluoranthene	ND	10.0								
Benzo(g,h,i)perylene	ND	10.0								
Benzo(k)fluoranthene	ND	10.0								
Benzoic acid	ND	20.0								
Benzyl alcohol	ND	10.0								
Bis(2-chloroethoxy)methane	ND	10.0								
Bis(2-chloroethyl)ether	ND	10.0								
Bis(2-chloroisopropyl)ether	ND	10.0								
Bis(2-ethylhexyl)phthalate	ND	10.0								
4-Bromophenyl phenyl ether	ND	10.0								
Butyl benzyl phthalate	ND	10.0								
Carbazole	ND	10.0								
4-Chloro-3-methylphenol	ND	10.0								
4-Chloroaniline	ND	10.0								
2-Chloronaphthalene	ND	10.0								
2-Chlorophenol	ND	10.0								
4-Chlorophenyl phenyl ether	ND	10.0								
Chrysene	ND	10.0								
Di-n-butyl phthalate	ND	10.0								
Di-n-octyl phthalate	ND	10.0								
Dibenz(a,h)anthracene	ND	10.0								
Dibenzofuran	ND	10.0								
1,2-Dichlorobenzene	ND	10.0								
1,3-Dichlorobenzene	ND	10.0								
1,4-Dichlorobenzene	ND	10.0								
3,3'-Dichlorobenzidine	ND	10.0								
Diethyl phthalate	ND	10.0								
Dimethyl phthalate	ND	10.0								
2,4-Dichlorophenol	ND	20.0								
2,4-Dimethylphenol	ND	10.0								
4,6-Dinitro-2-methylphenol	ND	20.0								
2,4-Dinitrophenol	ND	20.0								

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#: 1505698

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19344	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	19344	RunNo:	26418					
Prep Date:	5/21/2015	Analysis Date:	5/26/2015	SeqNo:	785101	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10.0								
2,6-Dinitrotoluene	ND	10.0								
Fluoranthene	ND	10.0								
Fluorene	ND	10.0								
Hexachlorobenzene	ND	10.0								
Hexachlorobutadiene	ND	10.0								
Hexachlorocyclopentadiene	ND	10.0								
Hexachloroethane	ND	10.0								
Indeno(1,2,3-cd)pyrene	ND	10.0								
Isophorone	ND	10.0								
1-Methylnaphthalene	ND	10.0								
2-Methylnaphthalene	ND	10.0								
2-Methylphenol	ND	10.0								
3+4-Methylphenol	ND	10.0								
N-Nitrosodi-n-propylamine	ND	10.0								
N-Nitrosodimethylamine	ND	10.0								
N-Nitrosodiphenylamine	ND	10.0								
Naphthalene	ND	10.0								
2-Nitroaniline	ND	10.0								
3-Nitroaniline	ND	10.0								
4-Nitroaniline	ND	10.0								
Nitrobenzene	ND	10.0								
2-Nitrophenol	ND	10.0								
4-Nitrophenol	ND	10.0								
Pentachlorophenol	ND	20.0								
Phenanthrene	ND	10.0								
Phenol	ND	10.0								
Pyrene	ND	10.0								
Pyridine	ND	10.0								
1,2,4-Trichlorobenzene	ND	10.0								
2,4,5-Trichlorophenol	ND	10.0								
2,4,6-Trichlorophenol	ND	10.0								
Surr: 2-Fluorophenol	112		200.0		56.1	14.9	111			
Surr: Phenol-d5	86.3		200.0		43.2	11.3	108			
Surr: 2,4,6-Tribromophenol	146		200.0		72.8	15.7	154			
Surr: Nitrobenzene-d5	77.2		100.0		77.2	47.8	106			
Surr: 2-Fluorobiphenyl	78.8		100.0		78.8	21.3	123			
Surr: 4-Terphenyl-d14	70.9		100.0		70.9	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#: 1505698

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-19344		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSW		Batch ID: 19344		RunNo: 26418					
Prep Date:	5/21/2015		Analysis Date: 5/26/2015		SeqNo: 785103		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	68.5	10.0	100.0	0	68.5	47.8	99.7			
4-Chloro-3-methylphenol	152	10.0	200.0	0	76.0	58.1	103			
2-Chlorophenol	157	10.0	200.0	0	78.5	49.5	96.8			
1,4-Dichlorobenzene	64.5	10.0	100.0	0	64.5	40.4	89.4			
2,4-Dinitrotoluene	62.9	10.0	100.0	0	62.9	38.6	91.3			
N-Nitrosodi-n-propylamine	85.7	10.0	100.0	0	85.7	53.9	95.6			
4-Nitrophenol	85.5	10.0	200.0	0	42.8	26.4	108			
Pentachlorophenol	116	20.0	200.0	0	58.1	36.5	86.6			
Phenol	99.9	10.0	200.0	0	50.0	29.3	108			
Pyrene	76.7	10.0	100.0	0	76.7	45.7	100			
1,2,4-Trichlorobenzene	67.7	10.0	100.0	0	67.7	39.3	94.5			
Surr: 2-Fluorophenol	127		200.0		63.6	14.9	111			
Surr: Phenol-d5	104		200.0		52.0	11.3	108			
Surr: 2,4,6-Tribromophenol	146		200.0		73.1	15.7	154			
Surr: Nitrobenzene-d5	83.7		100.0		83.7	47.8	106			
Surr: 2-Fluorobiphenyl	74.9		100.0		74.9	21.3	123			
Surr: 4-Terphenyl-d14	57.8		100.0		57.8	14.3	135			

Sample ID	Icsd-19344		SampType: LCSD		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS02		Batch ID: 19344		RunNo: 26418					
Prep Date:	5/21/2015		Analysis Date: 5/26/2015		SeqNo: 785105		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	69.6	10.0	100.0	0	69.6	47.8	99.7	1.65	28.2	
4-Chloro-3-methylphenol	152	10.0	200.0	0	76.0	58.1	103	0	24.4	
2-Chlorophenol	138	10.0	200.0	0	69.0	49.5	96.8	12.8	28.1	
1,4-Dichlorobenzene	56.8	10.0	100.0	0	56.8	40.4	89.4	12.8	31.2	
2,4-Dinitrotoluene	53.4	10.0	100.0	0	53.4	38.6	91.3	16.4	44.4	
N-Nitrosodi-n-propylamine	79.3	10.0	100.0	0	79.3	53.9	95.6	7.73	24.2	
4-Nitrophenol	74.3	10.0	200.0	0	37.2	26.4	108	14.0	36.6	
Pentachlorophenol	110	20.0	200.0	0	55.2	36.5	86.6	5.05	29.5	
Phenol	89.2	10.0	200.0	0	44.6	29.3	108	11.3	30	
Pyrene	73.4	10.0	100.0	0	73.4	45.7	100	4.45	31	
1,2,4-Trichlorobenzene	63.0	10.0	100.0	0	63.0	39.3	94.5	7.23	24	
Surr: 2-Fluorophenol	118		200.0		59.1	14.9	111	0	0	
Surr: Phenol-d5	97.2		200.0		48.6	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	149		200.0		74.4	15.7	154	0	0	
Surr: Nitrobenzene-d5	77.1		100.0		77.1	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	76.7		100.0		76.7	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#: 1505698

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Icsd-19344		SampType: LCSD		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS02		Batch ID: 19344		RunNo: 26418					
Prep Date:	5/21/2015		Analysis Date: 5/26/2015		SeqNo: 785105		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	57.3		100.0		57.3	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505698

04-Nov-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:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782177	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	10		10.00		102	70	130			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782181	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	91.6	80.6	122			
Surr: BFB	9.8		10.00		97.7	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

Sample Log-In Check List

Client Name: **Western Refining Gallup**

Work Order Number: **1505698**

RcptNo: 1

Received by/date:

[Signature]

05/15/15

Logged By: **Lindsay Mangin**

5/15/2015 8:55:00 AM

[Signature]

Completed By: **Lindsay Mangin**

5/15/2015 9:28:29 AM

[Signature]

Reviewed By:

[Signature]

05/19/15

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 ☒
10. VOA vials have zero headspace? Yes ☒ No ☒
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 05/15/15

CS 05/15/15 Samples -001A & -001B (all vials) have bubbles.

No VOA Vials ☐

of preserved bottles checked for pH: *2, 1*

Adjusted? *yes*

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 metals analysis, added 1 ml HNO_3 for acceptable pH. Held in Logi for 24 hours. For 300 analysis, poured off from a 1L Amber in a 500ml plastic. CS 05/15*
18. Cooler Information
- | Cooler No | Temp $^{\circ}\text{C}$ | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|-------------------------|-----------|-------------|---------|-----------|-----------|
| 1 | 2.1 | Good | Yes | | | |

Approximately 250ml from plastic bottle used for 8270 analysis due to low sample volume. JMS 5/21/15

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

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 04, 2015

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

RE: SWMU 10

OrderNo.: 1505700

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/15/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 25, 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'.

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#: 1505700
Date: 11/4/2015

CLIENT: Western Refining Company
Project: SWMU 10

Analytical Notes Regarding hexavalent Chromium:

The Cr6 sample was received at a pH of 7.5. The sample pH should be in the range of 8 - 10.

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505700

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-12-GW

Project: SWMU 10

Collection Date: 5/14/2015 12:55:00 PM

Lab ID: 1505700-001

Matrix: AQUEOUS

Received Date: 5/15/2015 8:55:00 AM

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	5/15/2015 7:44:34 PM	19246
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/15/2015 7:44:34 PM	19246
Surr: DNOP	123	0	76.5-150		%REC	1	5/15/2015 7:44:34 PM	19246
EPA METHOD 300.0: ANIONS							Analyst: LGT	
Fluoride	1.2	0.15	0.50		mg/L	5	5/15/2015 7:28:18 PM	R26247
Chloride	330	2.7	10		mg/L	20	5/15/2015 7:40:43 PM	R26247
Sulfate	370	2.3	10		mg/L	20	5/15/2015 7:40:43 PM	R26247
EPA METHOD 200.7: DISSOLVED METALS							Analyst: JLF	
Barium	0.085	0.00095	0.0020		mg/L	1	5/15/2015 5:30:13 PM	R26242
Beryllium	ND	0.00031	0.0020		mg/L	1	5/15/2015 5:30:13 PM	R26242
Cadmium	ND	0.00097	0.0020		mg/L	1	5/18/2015 7:11:48 PM	R26265
Chromium	0.0080	0.0018	0.0060		mg/L	1	5/15/2015 5:30:13 PM	R26242
Cobalt	0.0044	0.0013	0.0060	J	mg/L	1	5/15/2015 5:30:13 PM	R26242
Iron	2.6	0.036	0.10	*	mg/L	5	5/18/2015 7:14:00 PM	R26265
Manganese	0.91	0.00027	0.0020	*	mg/L	1	5/15/2015 5:30:13 PM	R26242
Nickel	0.012	0.0021	0.010		mg/L	1	5/15/2015 5:30:13 PM	R26242
Silver	ND	0.0012	0.0050		mg/L	1	5/18/2015 7:11:48 PM	R26265
Vanadium	0.011	0.0015	0.050	J	mg/L	1	5/15/2015 5:30:13 PM	R26242
Zinc	0.062	0.0028	0.010		mg/L	1	5/15/2015 5:30:13 PM	R26242
EPA METHOD 200.7: METALS							Analyst: ELS	
Barium	7.3	0.048	0.10	*	mg/L	50	5/21/2015 3:41:30 PM	19333
Beryllium	0.037	0.0016	0.010	*	mg/L	5	5/21/2015 3:18:50 PM	19333
Cadmium	ND	0.0048	0.010		mg/L	5	5/21/2015 3:18:50 PM	19333
Chromium	0.17	0.011	0.030	*	mg/L	5	5/21/2015 3:18:50 PM	19333
Cobalt	0.14	0.0063	0.030		mg/L	5	5/21/2015 3:18:50 PM	19333
Iron	140	3.6	10	*	mg/L	500	5/21/2015 3:43:19 PM	19333
Manganese	18	0.076	0.10	*	mg/L	50	5/21/2015 3:41:30 PM	19333
Nickel	0.26	0.011	0.050	*	mg/L	5	5/21/2015 3:18:50 PM	19333
Silver	ND	0.011	0.025		mg/L	5	5/21/2015 3:18:50 PM	19333
Vanadium	0.17	0.0075	0.25	J	mg/L	5	5/21/2015 3:18:50 PM	19333
Zinc	0.45	0.018	0.050		mg/L	5	5/21/2015 3:18:50 PM	19333
EPA 200.8: DISSOLVED METALS							Analyst: DBD	
Antimony	0.00023	0.00014	0.0010	J	mg/L	1	5/19/2015 2:56:36 PM	R26294
Arsenic	0.0025	0.000065	0.0010		mg/L	1	5/19/2015 2:56:36 PM	R26294
Lead	0.0014	0.000026	0.0010		mg/L	1	5/19/2015 2:56:36 PM	R26294
Selenium	0.0030	0.00019	0.0010		mg/L	1	5/19/2015 2:56:36 PM	R26294

EPA 200.8: METALS

Analyst: **TES**

Refer to the QC Summary report and 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 1505700

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-12-GW

Project: SWMU 10

Collection Date: 5/14/2015 12:55:00 PM

Lab ID: 1505700-001

Matrix: AQUEOUS

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: TES	
Antimony	ND	0.0022	0.0050		mg/L	5	5/26/2015 2:15:48 PM	19333
Arsenic	0.023	0.0029	0.010	*	mg/L	10	5/21/2015 2:53:44 PM	19333
Lead	0.28	0.0024	0.025	*	mg/L	50	5/21/2015 2:56:47 PM	19333
Selenium	0.0080	0.0019	0.010	J	mg/L	10	5/21/2015 2:53:44 PM	19333
EPA METHOD 245.1: MERCURY							Analyst: MED	
Mercury	0.00039	0.000059	0.00020		mg/L	1	5/29/2015 2:57:39 PM	19430
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	3.8	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Acenaphthylene	ND	3.7	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Aniline	ND	3.1	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Anthracene	ND	3.2	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Azobenzene	ND	4.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Benz(a)anthracene	ND	5.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Benzo(a)pyrene	ND	5.4	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Benzo(b)fluoranthene	ND	4.8	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Benzo(g,h,i)perylene	ND	6.3	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Benzo(k)fluoranthene	ND	5.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Benzoic acid	ND	2.1	40		µg/L	1	5/26/2015 3:06:29 PM	19344
Benzyl alcohol	ND	2.3	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Bis(2-chloroethoxy)methane	ND	3.6	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Bis(2-chloroethyl)ether	ND	3.5	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Bis(2-chloroisopropyl)ether	ND	4.1	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Bis(2-ethylhexyl)phthalate	ND	6.7	20		µg/L	1	5/26/2015 3:06:29 PM	19344
4-Bromophenyl phenyl ether	ND	2.8	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Butyl benzyl phthalate	ND	4.7	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Carbazole	ND	3.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
4-Chloro-3-methylphenol	ND	2.7	20		µg/L	1	5/26/2015 3:06:29 PM	19344
4-Chloroaniline	ND	3.7	20		µg/L	1	5/26/2015 3:06:29 PM	19344
2-Chloronaphthalene	ND	3.4	20		µg/L	1	5/26/2015 3:06:29 PM	19344
2-Chlorophenol	ND	2.4	20		µg/L	1	5/26/2015 3:06:29 PM	19344
4-Chlorophenyl phenyl ether	ND	4.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Chrysene	ND	4.3	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Di-n-butyl phthalate	ND	4.2	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Di-n-octyl phthalate	ND	3.9	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Dibenz(a,h)anthracene	ND	6.5	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Dibenzofuran	ND	3.8	20		µg/L	1	5/26/2015 3:06:29 PM	19344
1,2-Dichlorobenzene	ND	3.8	20		µg/L	1	5/26/2015 3:06:29 PM	19344
1,3-Dichlorobenzene	ND	3.4	20		µg/L	1	5/26/2015 3:06:29 PM	19344

Refer to the QC Summary report and 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 1505700

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-12-GW

Project: SWMU 10

Collection Date: 5/14/2015 12:55:00 PM

Lab ID: 1505700-001

Matrix: AQUEOUS

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
1,4-Dichlorobenzene	ND	2.5	20		µg/L	1	5/26/2015 3:06:29 PM	19344
3,3'-Dichlorobenzidine	ND	5.2	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Diethyl phthalate	ND	3.3	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Dimethyl phthalate	ND	4.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
2,4-Dichlorophenol	ND	2.8	40		µg/L	1	5/26/2015 3:06:29 PM	19344
2,4-Dimethylphenol	ND	3.7	20		µg/L	1	5/26/2015 3:06:29 PM	19344
4,6-Dinitro-2-methylphenol	ND	2.7	40		µg/L	1	5/26/2015 3:06:29 PM	19344
2,4-Dinitrophenol	ND	2.1	40		µg/L	1	5/26/2015 3:06:29 PM	19344
2,4-Dinitrotoluene	ND	2.9	20		µg/L	1	5/26/2015 3:06:29 PM	19344
2,6-Dinitrotoluene	ND	3.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Fluoranthene	ND	3.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Fluorene	ND	3.3	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Hexachlorobenzene	ND	4.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Hexachlorobutadiene	ND	3.9	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Hexachlorocyclopentadiene	ND	2.9	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Hexachloroethane	ND	3.2	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Indeno(1,2,3-cd)pyrene	ND	4.9	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Isophorone	ND	3.9	20		µg/L	1	5/26/2015 3:06:29 PM	19344
1-Methylnaphthalene	ND	3.6	20		µg/L	1	5/26/2015 3:06:29 PM	19344
2-Methylnaphthalene	ND	4.5	20		µg/L	1	5/26/2015 3:06:29 PM	19344
2-Methylphenol	ND	2.5	20		µg/L	1	5/26/2015 3:06:29 PM	19344
3+4-Methylphenol	ND	3.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
N-Nitrosodi-n-propylamine	ND	4.1	20		µg/L	1	5/26/2015 3:06:29 PM	19344
N-Nitrosodimethylamine	ND	2.8	20		µg/L	1	5/26/2015 3:06:29 PM	19344
N-Nitrosodiphenylamine	ND	4.9	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Naphthalene	ND	3.7	20		µg/L	1	5/26/2015 3:06:29 PM	19344
2-Nitroaniline	ND	3.6	20		µg/L	1	5/26/2015 3:06:29 PM	19344
3-Nitroaniline	ND	3.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
4-Nitroaniline	ND	2.5	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Nitrobenzene	ND	3.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
2-Nitrophenol	ND	2.5	20		µg/L	1	5/26/2015 3:06:29 PM	19344
4-Nitrophenol	ND	2.8	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Pentachlorophenol	ND	2.3	40		µg/L	1	5/26/2015 3:06:29 PM	19344
Phenanthrene	ND	4.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Phenol	ND	2.2	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Pyrene	ND	4.6	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Pyridine	ND	3.3	20		µg/L	1	5/26/2015 3:06:29 PM	19344
1,2,4-Trichlorobenzene	ND	4.0	20		µg/L	1	5/26/2015 3:06:29 PM	19344
2,4,5-Trichlorophenol	ND	3.2	20		µg/L	1	5/26/2015 3:06:29 PM	19344

Refer to the QC Summary report and 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 1505700

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-12-GW

Project: SWMU 10

Collection Date: 5/14/2015 12:55:00 PM

Lab ID: 1505700-001

Matrix: AQUEOUS

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
2,4,6-Trichlorophenol	ND	2.5	20		µg/L	1	5/26/2015 3:06:29 PM	19344
Surr: 2-Fluorophenol	40.3	0	14.9-111		%REC	1	5/26/2015 3:06:29 PM	19344
Surr: Phenol-d5	30.2	0	11.3-108		%REC	1	5/26/2015 3:06:29 PM	19344
Surr: 2,4,6-Tribromophenol	62.2	0	15.7-154		%REC	1	5/26/2015 3:06:29 PM	19344
Surr: Nitrobenzene-d5	65.4	0	47.8-106		%REC	1	5/26/2015 3:06:29 PM	19344
Surr: 2-Fluorobiphenyl	63.2	0	21.3-123		%REC	1	5/26/2015 3:06:29 PM	19344
Surr: 4-Terphenyl-d14	45.3	0	14.3-135		%REC	1	5/26/2015 3:06:29 PM	19344
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	0.47	0.13	2.0	J	µg/L	2	5/20/2015 3:49:54 PM	R26322
Toluene	ND	0.22	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Ethylbenzene	ND	0.20	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Methyl tert-butyl ether (MTBE)	13	0.35	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,2,4-Trimethylbenzene	0.66	0.32	2.0	J	µg/L	2	5/20/2015 3:49:54 PM	R26322
1,3,5-Trimethylbenzene	ND	0.25	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.35	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.27	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Naphthalene	0.52	0.44	4.0	J	µg/L	2	5/20/2015 3:49:54 PM	R26322
1-Methylnaphthalene	ND	1.1	8.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
2-Methylnaphthalene	1.5	1.2	8.0	J	µg/L	2	5/20/2015 3:49:54 PM	R26322
Acetone	3.4	1.9	20	J	µg/L	2	5/20/2015 3:49:54 PM	R26322
Bromobenzene	ND	0.22	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Bromodichloromethane	ND	0.18	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Bromoform	ND	0.32	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Bromomethane	ND	2.3	6.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
2-Butanone	ND	0.73	20		µg/L	2	5/20/2015 3:49:54 PM	R26322
Carbon disulfide	ND	1.3	20		µg/L	2	5/20/2015 3:49:54 PM	R26322
Carbon Tetrachloride	ND	0.16	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Chlorobenzene	ND	0.19	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Chloroethane	ND	0.21	4.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Chloroform	ND	0.43	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Chloromethane	ND	0.35	6.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
2-Chlorotoluene	ND	0.16	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
4-Chlorotoluene	ND	0.30	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
cis-1,2-DCE	ND	0.16	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
cis-1,3-Dichloropropene	ND	0.27	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.27	4.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Dibromochloromethane	ND	0.19	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Dibromomethane	ND	0.47	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,2-Dichlorobenzene	ND	0.24	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322

Refer to the QC Summary report and 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 1505700

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-12-GW

Project: SWMU 10

Collection Date: 5/14/2015 12:55:00 PM

Lab ID: 1505700-001

Matrix: AQUEOUS

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
1,3-Dichlorobenzene	ND	0.19	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,4-Dichlorobenzene	ND	0.33	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Dichlorodifluoromethane	ND	1.4	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,1-Dichloroethane	ND	0.80	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,1-Dichloroethene	ND	0.20	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,2-Dichloropropane	ND	0.30	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,3-Dichloropropane	ND	0.34	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
2,2-Dichloropropane	ND	0.30	4.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,1-Dichloropropene	ND	0.23	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Hexachlorobutadiene	ND	0.50	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
2-Hexanone	ND	0.95	20		µg/L	2	5/20/2015 3:49:54 PM	R26322
Isopropylbenzene	ND	0.30	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
4-Isopropyltoluene	ND	0.38	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
4-Methyl-2-pentanone	ND	0.51	20		µg/L	2	5/20/2015 3:49:54 PM	R26322
Methylene Chloride	ND	0.72	6.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
n-Butylbenzene	ND	0.49	6.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
n-Propylbenzene	ND	0.33	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
sec-Butylbenzene	ND	0.46	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Styrene	ND	0.21	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
tert-Butylbenzene	ND	0.26	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.22	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.36	4.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Tetrachloroethene (PCE)	ND	0.32	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
trans-1,2-DCE	ND	0.19	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
trans-1,3-Dichloropropene	ND	0.23	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,2,3-Trichlorobenzene	ND	0.53	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,2,4-Trichlorobenzene	ND	0.57	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,1,1-Trichloroethane	ND	0.16	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,1,2-Trichloroethane	ND	0.16	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Trichloroethene (TCE)	ND	0.33	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Trichlorofluoromethane	ND	0.25	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
1,2,3-Trichloropropane	ND	0.32	4.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Vinyl chloride	ND	0.25	2.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Xylenes, Total	ND	0.56	3.0		µg/L	2	5/20/2015 3:49:54 PM	R26322
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%REC	2	5/20/2015 3:49:54 PM	R26322
Surr: 4-Bromofluorobenzene	105	0	70-130		%REC	2	5/20/2015 3:49:54 PM	R26322
Surr: Dibromofluoromethane	97.5	0	70-130		%REC	2	5/20/2015 3:49:54 PM	R26322
Surr: Toluene-d8	99.1	0	70-130		%REC	2	5/20/2015 3:49:54 PM	R26322

EPA METHOD 8015D: GASOLINE RANGE

Analyst: cadg

Refer to the QC Summary report and 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 **1505700**

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-12-GW

Project: SWMU 10

Collection Date: 5/14/2015 12:55:00 PM

Lab ID: 1505700-001

Matrix: AQUEOUS

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.080	0.10		mg/L	2	5/20/2015 3:49:54 PM	R26322
Surr: BFB	103	0	70-130		%REC	2	5/20/2015 3:49:54 PM	R26322

Refer to the QC Summary report and 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 1505700

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: Trip Blank

Project: SWMU 10

Collection Date:

Lab ID: 1505700-002

Matrix: TRIP BLANK

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	ND	0.065	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Toluene	0.14	0.11	1.0	J	µg/L	1	5/20/2015 5:16:05 PM	R26322
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,2,4-Trimethylbenzene	0.18	0.16	1.0	J	µg/L	1	5/20/2015 5:16:05 PM	R26322
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Naphthalene	ND	0.22	2.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Acetone	ND	0.94	10		µg/L	1	5/20/2015 5:16:05 PM	R26322
Bromobenzene	ND	0.11	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Bromoform	ND	0.16	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Bromomethane	ND	1.2	3.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
2-Butanone	ND	0.36	10		µg/L	1	5/20/2015 5:16:05 PM	R26322
Carbon disulfide	ND	0.67	10		µg/L	1	5/20/2015 5:16:05 PM	R26322
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Chloroethane	ND	0.10	2.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Chloroform	ND	0.21	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Chloromethane	ND	0.17	3.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Dibromomethane	ND	0.23	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/20/2015 5:16:05 PM	R26322

Refer to the QC Summary report and 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 1505700

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: Trip Blank

Project: SWMU 10

Collection Date:

Lab ID: 1505700-002

Matrix: TRIP BLANK

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
2-Hexanone	ND	0.48	10		µg/L	1	5/20/2015 5:16:05 PM	R26322
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/20/2015 5:16:05 PM	R26322
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Styrene	ND	0.11	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/20/2015 5:16:05 PM	R26322
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/20/2015 5:16:05 PM	R26322
Surr: 1,2-Dichloroethane-d4	98.4	0	70-130		%REC	1	5/20/2015 5:16:05 PM	R26322
Surr: 4-Bromofluorobenzene	101	0	70-130		%REC	1	5/20/2015 5:16:05 PM	R26322
Surr: Dibromofluoromethane	97.5	0	70-130		%REC	1	5/20/2015 5:16:05 PM	R26322
Surr: Toluene-d8	101	0	70-130		%REC	1	5/20/2015 5:16:05 PM	R26322
EPA METHOD 8015D: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.040	0.050		mg/L	1	5/20/2015 5:16:05 PM	R26322
Surr: BFB	98.1	0	70-130		%REC	1	5/20/2015 5:16:05 PM	R26322

Refer to the QC Summary report and 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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Fax (615) 758-5859
Tax I.D. 62-0814289
Est. 1970

REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 19, 2015
Description :
Sample ID : 1505700-001G SWMU 10-12-GW
Collected By :
Collection Date : 05/14/15 12:55

ESC Sample # : L765935-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.0050	mg/l	9012B	05/28/15	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: Printed: 06/02/15 11:33



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Tax I.D. 62-0814289
Est. 1970

REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 19, 2015
Description :
Sample ID : 1505700-001H SWMU 10-12-GW
Collected By :
Collection Date : 05/14/15 12:55

ESC Sample # : L765935-02
Site ID :
Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	7199	05/26/15	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: Printed: 06/02/15 11:33
L765935-02 (CR6ICFFP) - pH=7.50



YOUR LAB OF CHOICE

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765935

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

June 02, 2015

Analyte	Result	Units	Laboratory Blank % Rec	Limit	Batch	Date Analyzed
Hexavalent Chromium	< .0005	mg/l			WG791515	05/26/15 20:02
Cyanide	< .005	mg/l			WG791484	05/28/15 00:29

Analyte	Units	Result	Duplicate Duplicate	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L766104-01	WG791515
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L766399-01	WG791515
Cyanide	mg/l	0.0	0.0	0.0	20	L766164-02	WG791484
Cyanide	mg/l	0.0	0.0	0.0	20	L766258-01	WG791484

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Hexavalent Chromium	mg/l	.002	0.00218	109.	90-110	WG791515
Cyanide	mg/l	.1	0.105	105.	90-110	WG791484

Analyte	Units	Result	Laboratory Control Sample Duplicate Ref	%Rec	Limit	RPD	Limit	Batch
Hexavalent Chromium	mg/l	0.00216	0.00218	108.	90-110	0.922	20	WG791515
Cyanide	mg/l	0.103	0.105	103.	90-110	1.92	20	WG791484

Analyte	Units	MS Res	Matrix Spike Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0528	0.0	.05	100.	90-110	L766097-01	WG791515
Cyanide	mg/l	0.199	0.0	.2	100.	90-110	L766168-02	WG791484

Analyte	Units	MSD	Matrix Spike Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0524	0.0528	105.	90-110	0.760	20	L766097-01	WG791515
Cyanide	mg/l	0.172	0.199	86.0*	90-110	14.6	20	L766168-02	WG791484

Batch number /Run number / Sample number cross reference

WG791515: R3039614: L765935-02
WG791484: R3039673: L765935-01

* * 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#: 1505700

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID MB	SampType: MBLK		TestCode: EPA Method 200.7: Metals							
Client ID: PBW	Batch ID: R26265		RunNo: 26265							
Prep Date:	Analysis Date: 5/18/2015		SeqNo: 780003		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Iron	ND	0.020								
Silver	ND	0.0050								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 200.7: Metals							
Client ID: LCSW	Batch ID: R26265		RunNo: 26265							
Prep Date:	Analysis Date: 5/18/2015		SeqNo: 780004		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.49	0.0020	0.5000	0	97.4	85	115			
Iron	0.46	0.020	0.5000	0	92.3	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			

Sample ID MB-19333	SampType: MBLK		TestCode: EPA Method 200.7: Metals							
Client ID: PBW	Batch ID: 19333		RunNo: 26358							
Prep Date: 5/20/2015	Analysis Date: 5/21/2015		SeqNo: 783226		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	0.0078	0.020								J
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID LCS-19333	SampType: LCS		TestCode: EPA Method 200.7: Metals							
Client ID: LCSW	Batch ID: 19333		RunNo: 26358							
Prep Date: 5/20/2015	Analysis Date: 5/21/2015		SeqNo: 783227		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	97.5	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.9	85	115			
Chromium	0.49	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.48	0.0060	0.5000	0	95.1	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#: 1505700

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS-19333		SampType: LCS		TestCode: EPA Method 200.7: Metals					
Client ID:	LCSW		Batch ID: 19333		RunNo: 26358					
Prep Date:	5/20/2015		Analysis Date: 5/21/2015		SeqNo: 783227		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.48	0.020	0.5000	0	96.5	85	115			
Manganese	0.48	0.0020	0.5000	0	95.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.3	85	115			
Silver	0.10	0.0050	0.1000	0	104	85	115			
Vanadium	0.51	0.050	0.5000	0	101	85	115			
Zinc	0.48	0.010	0.5000	0	96.2	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#: 1505700

04-Nov-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:	R26242		RunNo:	26242			
Prep Date:			Analysis Date:	5/15/2015		SeqNo:	779016	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0011	0.0020								J
Beryllium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
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:	R26242		RunNo:	26242			
Prep Date:			Analysis Date:	5/15/2015		SeqNo:	779017	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	95.6	85	115			
Beryllium	0.49	0.0020	0.5000	0	98.3	85	115			
Chromium	0.48	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.5	85	115			
Manganese	0.48	0.0020	0.5000	0	95.2	85	115			
Nickel	0.48	0.010	0.5000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.4	85	115			
Zinc	0.47	0.010	0.5000	0	94.4	85	115			

Sample ID	MB		SampType:	MBLK		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	PBW		Batch ID:	R26265		RunNo:	26265			
Prep Date:			Analysis Date:	5/18/2015		SeqNo:	780132	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Iron	ND	0.020								
Silver	ND	0.0050								

Sample ID	LCS		SampType:	LCS		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	LCSW		Batch ID:	R26265		RunNo:	26265			
Prep Date:			Analysis Date:	5/18/2015		SeqNo:	780133	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.49	0.0020	0.5000	0	98.2	85	115			
Iron	0.45	0.020	0.5000	0	90.7	85	115			
Silver	0.10	0.0050	0.1000	0	101	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#: 1505700

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

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
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	MB-19333		SampType:	MBLK		TestCode:	EPA 200.8: Metals				
Client ID:	PBW		Batch ID:	19333		RunNo:	26348				
Prep Date:	5/20/2015		Analysis Date:	5/21/2015		SeqNo:	782930		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#: 1505700

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19333		SampType:	MBLK		TestCode:	EPA 200.8: Metals			
Client ID:	PBW		Batch ID:	19333		RunNo:	26348			
Prep Date:	5/20/2015		Analysis Date:	5/21/2015		SeqNo:	782930		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	MB-19333		SampType:	MBLK		TestCode:	EPA 200.8: Metals			
Client ID:	PBW		Batch ID:	19333		RunNo:	26606			
Prep Date:	5/20/2015		Analysis Date:	6/3/2015		SeqNo:	792073		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.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the 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#: 1505700

04-Nov-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#: 1505700

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19430		SampType:	MBLK		TestCode:	EPA Method 245.1: Mercury				
Client ID:	PBW		Batch ID:	19430		RunNo:	26501				
Prep Date:	5/28/2015		Analysis Date:	5/29/2015		SeqNo:	787526		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.00020									

Sample ID	LCS-19430		SampType: LCS		TestCode: EPA Method 245.1: Mercury					
Client ID:	LCSW		Batch ID: 19430		RunNo: 26501					
Prep Date:	5/28/2015		Analysis Date: 5/29/2015		SeqNo: 787527		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	98.8	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#: 1505700

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID: R26247			RunNo: 26247					
Prep Date:		Analysis Date: 5/15/2015			SeqNo: 779359		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: R26247			RunNo: 26247					
Prep Date:		Analysis Date: 5/15/2015			SeqNo: 779360		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.508	0.100	0.5000	0	102	90	110			
Chloride	4.98	0.500	5.000	0	99.7	90	110			
Sulfate	10.2	0.500	10.00	0	102	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#: 1505700

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19246		SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	PBW		Batch ID:	19246		RunNo:	26216				
Prep Date:	5/15/2015		Analysis Date:	5/15/2015		SeqNo:	778433		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	1.4		1.000		137	76.5	150				

Sample ID	LCS-19246		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 19246		RunNo: 26216					
Prep Date:	5/15/2015		Analysis Date: 5/15/2015		SeqNo: 778434		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	117	60.1	156			
Surr: DNOP	0.62		0.5000		124	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#: 1505700

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782101	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	0.20	1.0								J
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	0.35	1.0								J
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#: 1505700

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782101	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	0.43	1.0								J
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	12		10.00		116	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.4		10.00		93.8	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782103	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.5	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	20	1.0	20.00	0	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#: 1505700

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES						
Client ID:	LCSW	Batch ID:	R26322	RunNo:	26322						
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782103	Units:	µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,1-Dichloroethene	21	1.0	20.00	0	107	75.6	144				
Trichloroethene (TCE)	17	1.0	20.00	0	86.6	70	130				
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130				
Surr: 4-Bromofluorobenzene	9.9		10.00		98.7	70	130				
Surr: Dibromofluoromethane	9.8		10.00		98.1	70	130				
Surr: Toluene-d8	10		10.00		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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505700

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19344		SampType: MBLK		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	PBW		Batch ID: 19344		RunNo: 26418					
Prep Date:	5/21/2015		Analysis Date: 5/26/2015		SeqNo: 785101		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10.0								
Acenaphthylene	ND	10.0								
Aniline	ND	10.0								
Anthracene	ND	10.0								
Azobenzene	ND	10.0								
Benz(a)anthracene	ND	10.0								
Benzo(a)pyrene	ND	10.0								
Benzo(b)fluoranthene	ND	10.0								
Benzo(g,h,i)perylene	ND	10.0								
Benzo(k)fluoranthene	ND	10.0								
Benzoic acid	ND	20.0								
Benzyl alcohol	ND	10.0								
Bis(2-chloroethoxy)methane	ND	10.0								
Bis(2-chloroethyl)ether	ND	10.0								
Bis(2-chloroisopropyl)ether	ND	10.0								
Bis(2-ethylhexyl)phthalate	ND	10.0								
4-Bromophenyl phenyl ether	ND	10.0								
Butyl benzyl phthalate	ND	10.0								
Carbazole	ND	10.0								
4-Chloro-3-methylphenol	ND	10.0								
4-Chloroaniline	ND	10.0								
2-Chloronaphthalene	ND	10.0								
2-Chlorophenol	ND	10.0								
4-Chlorophenyl phenyl ether	ND	10.0								
Chrysene	ND	10.0								
Di-n-butyl phthalate	ND	10.0								
Di-n-octyl phthalate	ND	10.0								
Dibenz(a,h)anthracene	ND	10.0								
Dibenzofuran	ND	10.0								
1,2-Dichlorobenzene	ND	10.0								
1,3-Dichlorobenzene	ND	10.0								
1,4-Dichlorobenzene	ND	10.0								
3,3'-Dichlorobenzidine	ND	10.0								
Diethyl phthalate	ND	10.0								
Dimethyl phthalate	ND	10.0								
2,4-Dichlorophenol	ND	20.0								
2,4-Dimethylphenol	ND	10.0								
4,6-Dinitro-2-methylphenol	ND	20.0								
2,4-Dinitrophenol	ND	20.0								

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#: 1505700

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19344	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	19344	RunNo:	26418					
Prep Date:	5/21/2015	Analysis Date:	5/26/2015	SeqNo:	785101	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10.0								
2,6-Dinitrotoluene	ND	10.0								
Fluoranthene	ND	10.0								
Fluorene	ND	10.0								
Hexachlorobenzene	ND	10.0								
Hexachlorobutadiene	ND	10.0								
Hexachlorocyclopentadiene	ND	10.0								
Hexachloroethane	ND	10.0								
Indeno(1,2,3-cd)pyrene	ND	10.0								
Isophorone	ND	10.0								
1-Methylnaphthalene	ND	10.0								
2-Methylnaphthalene	ND	10.0								
2-Methylphenol	ND	10.0								
3+4-Methylphenol	ND	10.0								
N-Nitrosodi-n-propylamine	ND	10.0								
N-Nitrosodimethylamine	ND	10.0								
N-Nitrosodiphenylamine	ND	10.0								
Naphthalene	ND	10.0								
2-Nitroaniline	ND	10.0								
3-Nitroaniline	ND	10.0								
4-Nitroaniline	ND	10.0								
Nitrobenzene	ND	10.0								
2-Nitrophenol	ND	10.0								
4-Nitrophenol	ND	10.0								
Pentachlorophenol	ND	20.0								
Phenanthrene	ND	10.0								
Phenol	ND	10.0								
Pyrene	ND	10.0								
Pyridine	ND	10.0								
1,2,4-Trichlorobenzene	ND	10.0								
2,4,5-Trichlorophenol	ND	10.0								
2,4,6-Trichlorophenol	ND	10.0								
Surr: 2-Fluorophenol	112		200.0		56.1	14.9	111			
Surr: Phenol-d5	86.3		200.0		43.2	11.3	108			
Surr: 2,4,6-Tribromophenol	146		200.0		72.8	15.7	154			
Surr: Nitrobenzene-d5	77.2		100.0		77.2	47.8	106			
Surr: 2-Fluorobiphenyl	78.8		100.0		78.8	21.3	123			
Surr: 4-Terphenyl-d14	70.9		100.0		70.9	14.3	135			

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#: 1505700

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-19344		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSW		Batch ID: 19344		RunNo: 26418					
Prep Date:	5/21/2015		Analysis Date: 5/26/2015		SeqNo: 785103		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	68.5	10.0	100.0	0	68.5	47.8	99.7			
4-Chloro-3-methylphenol	152	10.0	200.0	0	76.0	58.1	103			
2-Chlorophenol	157	10.0	200.0	0	78.5	49.5	96.8			
1,4-Dichlorobenzene	64.5	10.0	100.0	0	64.5	40.4	89.4			
2,4-Dinitrotoluene	62.9	10.0	100.0	0	62.9	38.6	91.3			
N-Nitrosodi-n-propylamine	85.7	10.0	100.0	0	85.7	53.9	95.6			
4-Nitrophenol	85.5	10.0	200.0	0	42.8	26.4	108			
Pentachlorophenol	116	20.0	200.0	0	58.1	36.5	86.6			
Phenol	99.9	10.0	200.0	0	50.0	29.3	108			
Pyrene	76.7	10.0	100.0	0	76.7	45.7	100			
1,2,4-Trichlorobenzene	67.7	10.0	100.0	0	67.7	39.3	94.5			
Surr: 2-Fluorophenol	127		200.0		63.6	14.9	111			
Surr: Phenol-d5	104		200.0		52.0	11.3	108			
Surr: 2,4,6-Tribromophenol	146		200.0		73.1	15.7	154			
Surr: Nitrobenzene-d5	83.7		100.0		83.7	47.8	106			
Surr: 2-Fluorobiphenyl	74.9		100.0		74.9	21.3	123			
Surr: 4-Terphenyl-d14	57.8		100.0		57.8	14.3	135			

Sample ID	Icsd-19344		SampType: LCSD		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS02		Batch ID: 19344		RunNo: 26418					
Prep Date:	5/21/2015		Analysis Date: 5/26/2015		SeqNo: 785105		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	69.6	10.0	100.0	0	69.6	47.8	99.7	1.65	28.2	
4-Chloro-3-methylphenol	152	10.0	200.0	0	76.0	58.1	103	0	24.4	
2-Chlorophenol	138	10.0	200.0	0	69.0	49.5	96.8	12.8	28.1	
1,4-Dichlorobenzene	56.8	10.0	100.0	0	56.8	40.4	89.4	12.8	31.2	
2,4-Dinitrotoluene	53.4	10.0	100.0	0	53.4	38.6	91.3	16.4	44.4	
N-Nitrosodi-n-propylamine	79.3	10.0	100.0	0	79.3	53.9	95.6	7.73	24.2	
4-Nitrophenol	74.3	10.0	200.0	0	37.2	26.4	108	14.0	36.6	
Pentachlorophenol	110	20.0	200.0	0	55.2	36.5	86.6	5.05	29.5	
Phenol	89.2	10.0	200.0	0	44.6	29.3	108	11.3	30	
Pyrene	73.4	10.0	100.0	0	73.4	45.7	100	4.45	31	
1,2,4-Trichlorobenzene	63.0	10.0	100.0	0	63.0	39.3	94.5	7.23	24	
Surr: 2-Fluorophenol	118		200.0		59.1	14.9	111	0	0	
Surr: Phenol-d5	97.2		200.0		48.6	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	149		200.0		74.4	15.7	154	0	0	
Surr: Nitrobenzene-d5	77.1		100.0		77.1	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	76.7		100.0		76.7	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#: 1505700

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	Icsd-19344		SampType: LCSD		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS02		Batch ID: 19344		RunNo: 26418					
Prep Date:	5/21/2015		Analysis Date: 5/26/2015		SeqNo: 785105		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	57.3		100.0		57.3	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505700

04-Nov-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:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782177	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	10		10.00		102	70	130			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782181	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	91.6	80.6	122			
Surr: BFB	9.8		10.00		97.7	70	130			

Sample ID	1505700-001B MS	SampType:	MS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	SWMU 10-12-GW	Batch ID:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782185	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.93	0.10	1.000	0	93.0	56.9	133			
Surr: BFB	19		20.00		94.5	70	130			

Sample ID	1505700-001B MSD	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	SWMU 10-12-GW	Batch ID:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782186	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.95	0.10	1.000	0	95.5	56.9	133	2.63	20	
Surr: BFB	21		20.00		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

Sample Log-In Check List

Client Name: **Western Refining Gallup**

Work Order Number: **1505700**

RcptNo: **1**

Received by/date:

[Signature]

05/15/15

Logged By: **Lindsay Mangin**

5/15/2015 8:55:00 AM

[Signature]

Completed By: **Lindsay Mangin**

5/15/2015 9:39:26 AM

[Signature]

Reviewed By:

[Signature]

05/19/15

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 ☒

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, 1**
(<2 or >12 unless noted)
Adjusted? **YES**
Checked by: **CS**

CS 05/15/15
Samples - 001A (3 of 3)
002A - 001B (all have bubbles)

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 metals analysis, added 2ml HNO₃ for acceptable pH. Held in Logix for 24 hours. For 300 analysis, poured off from a 1L Amber in a 500ml plastic. CS 05/15/15

18. Cooler Information

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

Approximately 250 ml from plastic bottle used for 8270 Analysis due to low sample volume. KML 5/21/15

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

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

June 25, 2015

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

RE: SWMU 10

OrderNo.: 1505701

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/15/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 25, 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".

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505701

Date Reported: 6/25/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-14-GW

Project: SWMU 10

Collection Date: 5/14/2015 10:00:00 AM

Lab ID: 1505701-001

Matrix: AQUEOUS

Received Date: 5/15/2015 8:55:00 AM

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	5/15/2015 8:11:26 PM	19246
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/15/2015 8:11:26 PM	19246
Surr: DNOP	127	0	76.5-150		%REC	1	5/15/2015 8:11:26 PM	19246
EPA METHOD 300.0: ANIONS							Analyst: LGT	
Fluoride	1.3	0.15	0.50		mg/L	5	5/15/2015 7:03:29 PM	R26247
Chloride	370	2.7	10		mg/L	20	5/15/2015 7:15:53 PM	R26247
Sulfate	370	2.3	10		mg/L	20	5/15/2015 7:15:53 PM	R26247
EPA METHOD 200.7: DISSOLVED METALS							Analyst: JLF	
Barium	0.18	0.00095	0.0020		mg/L	1	5/15/2015 5:31:58 PM	R26242
Beryllium	0.00090	0.00031	0.0020	J	mg/L	1	5/15/2015 5:31:58 PM	R26242
Cadmium	ND	0.00097	0.0020		mg/L	1	5/18/2015 7:23:18 PM	R26265
Chromium	0.0075	0.0018	0.0060		mg/L	1	5/15/2015 5:31:58 PM	R26242
Cobalt	0.0051	0.0013	0.0060	J	mg/L	1	5/15/2015 5:31:58 PM	R26242
Iron	3.9	0.036	0.10	*	mg/L	5	5/18/2015 7:25:35 PM	R26265
Manganese	1.1	0.0013	0.010	*	mg/L	5	5/18/2015 7:25:35 PM	R26265
Nickel	0.011	0.0021	0.010		mg/L	1	5/15/2015 5:31:58 PM	R26242
Silver	ND	0.0012	0.0050		mg/L	1	5/18/2015 7:23:18 PM	R26265
Vanadium	0.016	0.0015	0.050	J	mg/L	1	5/15/2015 5:31:58 PM	R26242
Zinc	0.014	0.0028	0.010		mg/L	1	5/15/2015 5:31:58 PM	R26242
EPA METHOD 200.7: METALS							Analyst: ELS	
Barium	7.0	0.048	0.10	*	mg/L	50	5/21/2015 3:45:07 PM	19333
Beryllium	0.035	0.0016	0.010	*	mg/L	5	5/21/2015 3:22:30 PM	19333
Cadmium	ND	0.0048	0.010		mg/L	5	5/21/2015 3:22:30 PM	19333
Chromium	0.15	0.011	0.030	*	mg/L	5	5/21/2015 3:22:30 PM	19333
Cobalt	0.13	0.0063	0.030		mg/L	5	5/21/2015 3:22:30 PM	19333
Iron	130	3.6	10	*	mg/L	500	5/21/2015 3:46:56 PM	19333
Manganese	22	0.076	0.10	*	mg/L	50	5/21/2015 3:45:07 PM	19333
Nickel	0.25	0.011	0.050	*	mg/L	5	5/21/2015 3:22:30 PM	19333
Silver	ND	0.011	0.025		mg/L	5	5/21/2015 3:22:30 PM	19333
Vanadium	0.16	0.0075	0.25	J	mg/L	5	5/21/2015 3:22:30 PM	19333
Zinc	0.36	0.018	0.050		mg/L	5	5/21/2015 3:22:30 PM	19333
EPA 200.8: DISSOLVED METALS							Analyst: DBD	
Antimony	ND	0.00014	0.0010		mg/L	1	5/19/2015 3:01:32 PM	R26294
Arsenic	0.0030	0.000065	0.0010		mg/L	1	5/19/2015 3:01:32 PM	R26294
Lead	0.0068	0.000026	0.0010		mg/L	1	5/19/2015 3:01:32 PM	R26294
Selenium	0.0031	0.00019	0.0010		mg/L	1	5/19/2015 3:01:32 PM	R26294
EPA 200.8: METALS							Analyst: TES	

Refer to the QC Summary report and 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 1505701

Date Reported: 6/25/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-14-GW

Project: SWMU 10

Collection Date: 5/14/2015 10:00:00 AM

Lab ID: 1505701-001

Matrix: AQUEOUS

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: TES	
Antimony	ND	0.0022	0.0050		mg/L	5	5/26/2015 2:24:54 PM	19333
Arsenic	0.029	0.0029	0.010	*	mg/L	10	5/21/2015 2:59:50 PM	19333
Lead	0.24	0.00047	0.0050	*	mg/L	10	5/21/2015 2:59:50 PM	19333
Selenium	0.010	0.0039	0.020	J	mg/L	20	5/21/2015 3:02:54 PM	19333
EPA METHOD 245.1: MERCURY							Analyst: MED	
Mercury	0.00021	0.000059	0.00020		mg/L	1	5/29/2015 2:59:44 PM	19430
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	3.8	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Acenaphthylene	ND	3.7	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Aniline	ND	3.1	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Anthracene	ND	3.2	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Azobenzene	ND	4.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Benz(a)anthracene	ND	5.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Benzo(a)pyrene	ND	5.4	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Benzo(b)fluoranthene	ND	4.8	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Benzo(g,h,i)perylene	ND	6.3	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Benzo(k)fluoranthene	ND	5.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Benzoic acid	ND	2.1	40		µg/L	1	5/26/2015 3:34:14 PM	19344
Benzyl alcohol	ND	2.3	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Bis(2-chloroethoxy)methane	ND	3.6	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Bis(2-chloroethyl)ether	ND	3.5	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Bis(2-chloroisopropyl)ether	ND	4.1	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Bis(2-ethylhexyl)phthalate	ND	6.7	20		µg/L	1	5/26/2015 3:34:14 PM	19344
4-Bromophenyl phenyl ether	ND	2.8	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Butyl benzyl phthalate	ND	4.7	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Carbazole	ND	3.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
4-Chloro-3-methylphenol	ND	2.7	20		µg/L	1	5/26/2015 3:34:14 PM	19344
4-Chloroaniline	ND	3.7	20		µg/L	1	5/26/2015 3:34:14 PM	19344
2-Chloronaphthalene	ND	3.4	20		µg/L	1	5/26/2015 3:34:14 PM	19344
2-Chlorophenol	ND	2.4	20		µg/L	1	5/26/2015 3:34:14 PM	19344
4-Chlorophenyl phenyl ether	ND	4.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Chrysene	ND	4.3	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Di-n-butyl phthalate	ND	4.2	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Di-n-octyl phthalate	ND	3.9	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Dibenz(a,h)anthracene	ND	6.5	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Dibenzofuran	ND	3.8	20		µg/L	1	5/26/2015 3:34:14 PM	19344
1,2-Dichlorobenzene	ND	3.8	20		µg/L	1	5/26/2015 3:34:14 PM	19344
1,3-Dichlorobenzene	ND	3.4	20		µg/L	1	5/26/2015 3:34:14 PM	19344

Refer to the QC Summary report and 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 1505701

Date Reported: 6/25/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-14-GW

Project: SWMU 10

Collection Date: 5/14/2015 10:00:00 AM

Lab ID: 1505701-001

Matrix: AQUEOUS

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
1,4-Dichlorobenzene	ND	2.5	20		µg/L	1	5/26/2015 3:34:14 PM	19344
3,3'-Dichlorobenzidine	ND	5.2	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Diethyl phthalate	ND	3.3	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Dimethyl phthalate	ND	4.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
2,4-Dichlorophenol	ND	2.8	40		µg/L	1	5/26/2015 3:34:14 PM	19344
2,4-Dimethylphenol	ND	3.7	20		µg/L	1	5/26/2015 3:34:14 PM	19344
4,6-Dinitro-2-methylphenol	ND	2.7	40		µg/L	1	5/26/2015 3:34:14 PM	19344
2,4-Dinitrophenol	ND	2.1	40		µg/L	1	5/26/2015 3:34:14 PM	19344
2,4-Dinitrotoluene	ND	2.9	20		µg/L	1	5/26/2015 3:34:14 PM	19344
2,6-Dinitrotoluene	ND	3.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Fluoranthene	ND	3.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Fluorene	ND	3.3	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Hexachlorobenzene	ND	4.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Hexachlorobutadiene	ND	3.9	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Hexachlorocyclopentadiene	ND	2.9	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Hexachloroethane	ND	3.2	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Indeno(1,2,3-cd)pyrene	ND	4.9	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Isophorone	ND	3.9	20		µg/L	1	5/26/2015 3:34:14 PM	19344
1-Methylnaphthalene	ND	3.6	20		µg/L	1	5/26/2015 3:34:14 PM	19344
2-Methylnaphthalene	ND	4.5	20		µg/L	1	5/26/2015 3:34:14 PM	19344
2-Methylphenol	ND	2.5	20		µg/L	1	5/26/2015 3:34:14 PM	19344
3+4-Methylphenol	ND	3.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
N-Nitrosodi-n-propylamine	ND	4.1	20		µg/L	1	5/26/2015 3:34:14 PM	19344
N-Nitrosodimethylamine	ND	2.8	20		µg/L	1	5/26/2015 3:34:14 PM	19344
N-Nitrosodiphenylamine	ND	4.9	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Naphthalene	ND	3.7	20		µg/L	1	5/26/2015 3:34:14 PM	19344
2-Nitroaniline	ND	3.6	20		µg/L	1	5/26/2015 3:34:14 PM	19344
3-Nitroaniline	ND	3.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
4-Nitroaniline	ND	2.5	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Nitrobenzene	ND	3.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
2-Nitrophenol	ND	2.5	20		µg/L	1	5/26/2015 3:34:14 PM	19344
4-Nitrophenol	ND	2.8	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Pentachlorophenol	ND	2.3	40		µg/L	1	5/26/2015 3:34:14 PM	19344
Phenanthrene	ND	4.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Phenol	ND	2.2	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Pyrene	ND	4.6	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Pyridine	ND	3.3	20		µg/L	1	5/26/2015 3:34:14 PM	19344
1,2,4-Trichlorobenzene	ND	4.0	20		µg/L	1	5/26/2015 3:34:14 PM	19344
2,4,5-Trichlorophenol	ND	3.2	20		µg/L	1	5/26/2015 3:34:14 PM	19344

Refer to the QC Summary report and 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 1505701

Date Reported: 6/25/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-14-GW

Project: SWMU 10

Collection Date: 5/14/2015 10:00:00 AM

Lab ID: 1505701-001

Matrix: AQUEOUS

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
2,4,6-Trichlorophenol	ND	2.5	20		µg/L	1	5/26/2015 3:34:14 PM	19344
Surr: 2-Fluorophenol	63.6	0	14.9-111		%REC	1	5/26/2015 3:34:14 PM	19344
Surr: Phenol-d5	46.6	0	11.3-108		%REC	1	5/26/2015 3:34:14 PM	19344
Surr: 2,4,6-Tribromophenol	87.7	0	15.7-154		%REC	1	5/26/2015 3:34:14 PM	19344
Surr: Nitrobenzene-d5	88.7	0	47.8-106		%REC	1	5/26/2015 3:34:14 PM	19344
Surr: 2-Fluorobiphenyl	86.8	0	21.3-123		%REC	1	5/26/2015 3:34:14 PM	19344
Surr: 4-Terphenyl-d14	59.6	0	14.3-135		%REC	1	5/26/2015 3:34:14 PM	19344
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	0.47	0.13	2.0	J	µg/L	2	5/20/2015 5:44:48 PM	R26322
Toluene	0.30	0.22	2.0	J	µg/L	2	5/20/2015 5:44:48 PM	R26322
Ethylbenzene	ND	0.20	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Methyl tert-butyl ether (MTBE)	16	0.35	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,2,4-Trimethylbenzene	0.44	0.32	2.0	J	µg/L	2	5/20/2015 5:44:48 PM	R26322
1,3,5-Trimethylbenzene	ND	0.25	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.35	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.27	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Naphthalene	ND	0.44	4.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1-Methylnaphthalene	ND	1.1	8.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
2-Methylnaphthalene	ND	1.2	8.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Acetone	2.7	1.9	20	J	µg/L	2	5/20/2015 5:44:48 PM	R26322
Bromobenzene	ND	0.22	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Bromodichloromethane	ND	0.18	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Bromoform	ND	0.32	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Bromomethane	ND	2.3	6.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
2-Butanone	ND	0.73	20		µg/L	2	5/20/2015 5:44:48 PM	R26322
Carbon disulfide	ND	1.3	20		µg/L	2	5/20/2015 5:44:48 PM	R26322
Carbon Tetrachloride	ND	0.16	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Chlorobenzene	ND	0.19	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Chloroethane	ND	0.21	4.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Chloroform	ND	0.43	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Chloromethane	ND	0.35	6.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
2-Chlorotoluene	ND	0.16	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
4-Chlorotoluene	ND	0.30	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
cis-1,2-DCE	ND	0.16	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
cis-1,3-Dichloropropene	ND	0.27	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.27	4.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Dibromochloromethane	ND	0.19	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Dibromomethane	ND	0.47	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,2-Dichlorobenzene	ND	0.24	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322

Refer to the QC Summary report and 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 1505701

Date Reported: 6/25/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-14-GW

Project: SWMU 10

Collection Date: 5/14/2015 10:00:00 AM

Lab ID: 1505701-001

Matrix: AQUEOUS

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
1,3-Dichlorobenzene	ND	0.19	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,4-Dichlorobenzene	ND	0.33	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Dichlorodifluoromethane	ND	1.4	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,1-Dichloroethane	ND	0.80	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,1-Dichloroethene	ND	0.20	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,2-Dichloropropane	ND	0.30	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,3-Dichloropropane	ND	0.34	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
2,2-Dichloropropane	ND	0.30	4.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,1-Dichloropropene	ND	0.23	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Hexachlorobutadiene	ND	0.50	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
2-Hexanone	ND	0.95	20		µg/L	2	5/20/2015 5:44:48 PM	R26322
Isopropylbenzene	ND	0.30	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
4-Isopropyltoluene	ND	0.38	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
4-Methyl-2-pentanone	ND	0.51	20		µg/L	2	5/20/2015 5:44:48 PM	R26322
Methylene Chloride	ND	0.72	6.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
n-Butylbenzene	ND	0.49	6.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
n-Propylbenzene	ND	0.33	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
sec-Butylbenzene	ND	0.46	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Styrene	ND	0.21	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
tert-Butylbenzene	ND	0.26	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.22	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.36	4.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Tetrachloroethene (PCE)	ND	0.32	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
trans-1,2-DCE	ND	0.19	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
trans-1,3-Dichloropropene	ND	0.23	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,2,3-Trichlorobenzene	ND	0.53	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,2,4-Trichlorobenzene	ND	0.57	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,1,1-Trichloroethane	ND	0.16	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,1,2-Trichloroethane	ND	0.16	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Trichloroethene (TCE)	ND	0.33	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Trichlorofluoromethane	ND	0.25	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
1,2,3-Trichloropropane	ND	0.32	4.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Vinyl chloride	ND	0.25	2.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Xylenes, Total	ND	0.56	3.0		µg/L	2	5/20/2015 5:44:48 PM	R26322
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%REC	2	5/20/2015 5:44:48 PM	R26322
Surr: 4-Bromofluorobenzene	104	0	70-130		%REC	2	5/20/2015 5:44:48 PM	R26322
Surr: Dibromofluoromethane	96.1	0	70-130		%REC	2	5/20/2015 5:44:48 PM	R26322
Surr: Toluene-d8	96.7	0	70-130		%REC	2	5/20/2015 5:44:48 PM	R26322

EPA METHOD 8015D: GASOLINE RANGE

Analyst: **cadg**

Refer to the QC Summary report and 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 **1505701**

Date Reported: 6/25/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-14-GW

Project: SWMU 10

Collection Date: 5/14/2015 10:00:00 AM

Lab ID: 1505701-001

Matrix: AQUEOUS

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.080	0.10		mg/L	2	5/20/2015 5:44:48 PM	R26322
Surr: BFB	96.9	0	70-130		%REC	2	5/20/2015 5:44:48 PM	R26322

Refer to the QC Summary report and 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 1505701

Date Reported: 6/25/2015

CLIENT: Western Refining Company

Client Sample ID: Trip Blank

Project: SWMU 10

Collection Date:

Lab ID: 1505701-002

Matrix: TRIP BLANK

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	ND	0.065	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Toluene	ND	0.11	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Naphthalene	ND	0.22	2.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Acetone	ND	0.94	10		µg/L	1	5/20/2015 6:13:33 PM	R26322
Bromobenzene	ND	0.11	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Bromoform	ND	0.16	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Bromomethane	ND	1.2	3.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
2-Butanone	ND	0.36	10		µg/L	1	5/20/2015 6:13:33 PM	R26322
Carbon disulfide	ND	0.67	10		µg/L	1	5/20/2015 6:13:33 PM	R26322
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Chloroethane	ND	0.10	2.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Chloroform	ND	0.21	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Chloromethane	ND	0.17	3.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Dibromomethane	ND	0.23	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/20/2015 6:13:33 PM	R26322

Refer to the QC Summary report and 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 1505701

Date Reported: 6/25/2015

CLIENT: Western Refining Company

Client Sample ID: Trip Blank

Project: SWMU 10

Collection Date:

Lab ID: 1505701-002

Matrix: TRIP BLANK

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
2-Hexanone	ND	0.48	10		µg/L	1	5/20/2015 6:13:33 PM	R26322
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/20/2015 6:13:33 PM	R26322
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Styrene	ND	0.11	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/20/2015 6:13:33 PM	R26322
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/20/2015 6:13:33 PM	R26322
Surr: 1,2-Dichloroethane-d4	105	0	70-130		%REC	1	5/20/2015 6:13:33 PM	R26322
Surr: 4-Bromofluorobenzene	103	0	70-130		%REC	1	5/20/2015 6:13:33 PM	R26322
Surr: Dibromofluoromethane	107	0	70-130		%REC	1	5/20/2015 6:13:33 PM	R26322
Surr: Toluene-d8	92.7	0	70-130		%REC	1	5/20/2015 6:13:33 PM	R26322
EPA METHOD 8015D: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.040	0.050		mg/L	1	5/20/2015 6:13:33 PM	R26322
Surr: BFB	97.1	0	70-130		%REC	1	5/20/2015 6:13:33 PM	R26322

Refer to the QC Summary report and 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

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 19, 2015
Description :
Sample ID : 1505701-001G SWMU 10-14-GW
Collected By :
Collection Date : 05/14/15 10:00

ESC Sample # : L765939-01
Site ID :
Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	BDL	0.0050	mg/l	9012B	05/28/15	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: 06/02/15 11:32 Printed: 06/02/15 11:35



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

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 19, 2015
Description :
Sample ID : 1505701-001H SWMU 10-14-GW
Collected By :
Collection Date : 05/14/15 10:00

ESC Sample # : L765939-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	7199	05/26/15	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: 06/02/15 11:32 Printed: 06/02/15 11:35



YOUR LAB OF CHOICE

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765939

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

June 02, 2015

Analyte	Result	Laboratory Blank Units % Rec	Limit	Batch	Date Analyzed
Hexavalent Chromium	< .0005	mg/l		WG791515	05/26/15 20:02
Cyanide	< .005	mg/l		WG791484	05/28/15 00:29

Analyte	Units	Result	Duplicate Duplicate	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L766104-01	WG791515
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L766399-01	WG791515
Cyanide	mg/l	0.0	0.0	0.0	20	L766164-02	WG791484
Cyanide	mg/l	0.0	0.0	0.0	20	L766258-01	WG791484

Analyte	Units	Laboratory Control Known Val	Sample Result	% Rec	Limit	Batch
Hexavalent Chromium	mg/l	.002	0.00218	109.	90-110	WG791515
Cyanide	mg/l	.1	0.105	105.	90-110	WG791484

Analyte	Units	Result	Laboratory Control Ref	Sample Duplicate %Rec	Limit	RPD	Limit	Batch
Hexavalent Chromium	mg/l	0.00216	0.00218	108.	90-110	0.922	20	WG791515
Cyanide	mg/l	0.103	0.105	103.	90-110	1.92	20	WG791484

Analyte	Units	MS Res	Matrix Spike Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0528	0.0	.05	100.	90-110	L766097-01	WG791515
Cyanide	mg/l	0.199	0.0	.2	100.	90-110	L766168-02	WG791484

Analyte	Units	MSD	Matrix Spike Ref	Duplicate %Rec	Limit	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0524	0.0528	105.	90-110	0.760	20	L766097-01	WG791515
Cyanide	mg/l	0.172	0.199	86.0*	90-110	14.6	20	L766168-02	WG791484

Batch number /Run number / Sample number cross reference

WG791515: R3039614: L765939-02
WG791484: R3039673: L765939-01

* * 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#: 1505701

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB		SampType:	MBLK		TestCode:	EPA Method 200.7: Metals			
Client ID:	PBW		Batch ID:	R26265		RunNo:	26265			
Prep Date:			Analysis Date:	5/18/2015		SeqNo:	780003		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Iron	ND	0.020								
Manganese	ND	0.0020								
Silver	ND	0.0050								

Sample ID	LCS		SampType:	LCS		TestCode:	EPA Method 200.7: Metals			
Client ID:	LCSW		Batch ID:	R26265		RunNo:	26265			
Prep Date:			Analysis Date:	5/18/2015		SeqNo:	780004		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.49	0.0020	0.5000	0	97.4	85	115			
Iron	0.46	0.020	0.5000	0	92.3	85	115			
Manganese	0.47	0.0020	0.5000	0	93.2	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			

Sample ID	MB-19333		SampType:	MBLK		TestCode:	EPA Method 200.7: Metals			
Client ID:	PBW		Batch ID:	19333		RunNo:	26358			
Prep Date:	5/20/2015		Analysis Date:	5/21/2015		SeqNo:	783226		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	0.0078	0.020								J
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS-19333		SampType:	LCS		TestCode:	EPA Method 200.7: Metals			
Client ID:	LCSW		Batch ID:	19333		RunNo:	26358			
Prep Date:	5/20/2015		Analysis Date:	5/21/2015		SeqNo:	783227		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	97.5	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.9	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#: 1505701

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS-19333			SampType:	LCS			TestCode:	EPA Method 200.7: Metals		
Client ID:	LCSW			Batch ID:	19333			RunNo:	26358		
Prep Date:	5/20/2015			Analysis Date:	5/21/2015			SeqNo:	783227		
								Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chromium	0.49	0.0060	0.5000	0	97.0	85	115				
Cobalt	0.48	0.0060	0.5000	0	95.1	85	115				
Iron	0.48	0.020	0.5000	0	96.5	85	115				
Manganese	0.48	0.0020	0.5000	0	95.3	85	115				
Nickel	0.47	0.010	0.5000	0	94.3	85	115				
Silver	0.10	0.0050	0.1000	0	104	85	115				
Vanadium	0.51	0.050	0.5000	0	101	85	115				
Zinc	0.48	0.010	0.5000	0	96.2	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#: 1505701

04-Nov-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:	R26242		RunNo:	26242			
Prep Date:			Analysis Date:	5/15/2015		SeqNo:	779016		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0011	0.0020								J
Beryllium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
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:	R26242		RunNo:	26242			
Prep Date:			Analysis Date:	5/15/2015		SeqNo:	779017		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	95.6	85	115			
Beryllium	0.49	0.0020	0.5000	0	98.3	85	115			
Chromium	0.48	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.5	85	115			
Nickel	0.48	0.010	0.5000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.4	85	115			
Zinc	0.47	0.010	0.5000	0	94.4	85	115			

Sample ID	MB		SampType:	MBLK		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	PBW		Batch ID:	R26265		RunNo:	26265			
Prep Date:			Analysis Date:	5/18/2015		SeqNo:	780132		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Iron	ND	0.020								
Manganese	ND	0.0020								
Silver	ND	0.0050								

Sample ID	LCS		SampType:	LCS		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	LCSW		Batch ID:	R26265		RunNo:	26265			
Prep Date:			Analysis Date:	5/18/2015		SeqNo:	780133		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.49	0.0020	0.5000	0	98.2	85	115			
Iron	0.45	0.020	0.5000	0	90.7	85	115			
Manganese	0.46	0.0020	0.5000	0	91.7	85	115			
Silver	0.10	0.0050	0.1000	0	101	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#: 1505701

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

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
Antimony	ND	0.0010								
Arsenic	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	MB-19333		SampType: MBLK		TestCode: EPA 200.8: Metals					
Client ID:	PBW		Batch ID: 19333		RunNo: 26348					
Prep Date:	5/20/2015		Analysis Date: 5/21/2015		SeqNo: 782930		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#: 1505701

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19333		SampType:	MBLK		TestCode:	EPA 200.8: Metals			
Client ID:	PBW		Batch ID:	19333		RunNo:	26348			
Prep Date:	5/20/2015		Analysis Date:	5/21/2015		SeqNo:	782930		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	MB-19333		SampType:	MBLK		TestCode:	EPA 200.8: Metals			
Client ID:	PBW		Batch ID:	19333		RunNo:	26606			
Prep Date:	5/20/2015		Analysis Date:	6/3/2015		SeqNo:	792073		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.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the 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#: 1505701

04-Nov-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#: 1505701

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19430		SampType:	MBLK		TestCode:	EPA Method 245.1: Mercury				
Client ID:	PBW		Batch ID:	19430		RunNo:	26501				
Prep Date:	5/28/2015		Analysis Date:	5/29/2015		SeqNo:	787526		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.00020									

Sample ID	LCS-19430		SampType: LCS		TestCode: EPA Method 245.1: Mercury					
Client ID:	LCSW		Batch ID: 19430		RunNo: 26501					
Prep Date:	5/28/2015		Analysis Date: 5/29/2015		SeqNo: 787527		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0049	0.00020	0.005000	0	98.8	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#: 1505701

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID: R26247			RunNo: 26247					
Prep Date:		Analysis Date: 5/15/2015			SeqNo: 779359		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: R26247			RunNo: 26247					
Prep Date:		Analysis Date: 5/15/2015			SeqNo: 779360		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.508	0.100	0.5000	0	102	90	110			
Chloride	4.98	0.500	5.000	0	99.7	90	110			
Sulfate	10.2	0.500	10.00	0	102	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#: 1505701

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19246		SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	PBW		Batch ID:	19246		RunNo:	26216				
Prep Date:	5/15/2015		Analysis Date:	5/15/2015		SeqNo:	778433		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	1.4		1.000		137	76.5	150				

Sample ID	LCS-19246		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 19246		RunNo: 26216					
Prep Date:	5/15/2015		Analysis Date: 5/15/2015		SeqNo: 778434		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	117	60.1	156			
Surr: DNOP	0.62		0.5000		124	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#: 1505701

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782101	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	0.20	1.0								J
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	0.35	1.0								J
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#: 1505701

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782101	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	0.43	1.0								J
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	12		10.00		116	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.4		10.00		93.8	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782103	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.5	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	20	1.0	20.00	0	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#: 1505701

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R26322			RunNo: 26322					
Prep Date:		Analysis Date: 5/20/2015			SeqNo: 782103		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	21	1.0	20.00	0	107	75.6	144			
Trichloroethene (TCE)	17	1.0	20.00	0	86.6	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.7	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.1	70	130			
Surr: Toluene-d8	10		10.00		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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505701

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19344	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	19344	RunNo:	26418					
Prep Date:	5/21/2015	Analysis Date:	5/26/2015	SeqNo:	785101	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10.0								
Acenaphthylene	ND	10.0								
Aniline	ND	10.0								
Anthracene	ND	10.0								
Azobenzene	ND	10.0								
Benz(a)anthracene	ND	10.0								
Benzo(a)pyrene	ND	10.0								
Benzo(b)fluoranthene	ND	10.0								
Benzo(g,h,i)perylene	ND	10.0								
Benzo(k)fluoranthene	ND	10.0								
Benzoic acid	ND	20.0								
Benzyl alcohol	ND	10.0								
Bis(2-chloroethoxy)methane	ND	10.0								
Bis(2-chloroethyl)ether	ND	10.0								
Bis(2-chloroisopropyl)ether	ND	10.0								
Bis(2-ethylhexyl)phthalate	ND	10.0								
4-Bromophenyl phenyl ether	ND	10.0								
Butyl benzyl phthalate	ND	10.0								
Carbazole	ND	10.0								
4-Chloro-3-methylphenol	ND	10.0								
4-Chloroaniline	ND	10.0								
2-Chloronaphthalene	ND	10.0								
2-Chlorophenol	ND	10.0								
4-Chlorophenyl phenyl ether	ND	10.0								
Chrysene	ND	10.0								
Di-n-butyl phthalate	ND	10.0								
Di-n-octyl phthalate	ND	10.0								
Dibenz(a,h)anthracene	ND	10.0								
Dibenzofuran	ND	10.0								
1,2-Dichlorobenzene	ND	10.0								
1,3-Dichlorobenzene	ND	10.0								
1,4-Dichlorobenzene	ND	10.0								
3,3'-Dichlorobenzidine	ND	10.0								
Diethyl phthalate	ND	10.0								
Dimethyl phthalate	ND	10.0								
2,4-Dichlorophenol	ND	20.0								
2,4-Dimethylphenol	ND	10.0								
4,6-Dinitro-2-methylphenol	ND	20.0								
2,4-Dinitrophenol	ND	20.0								

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#: 1505701

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19344		SampType: MBLK		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	PBW		Batch ID: 19344		RunNo: 26418					
Prep Date:	5/21/2015		Analysis Date: 5/26/2015		SeqNo: 785101		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10.0								
2,6-Dinitrotoluene	ND	10.0								
Fluoranthene	ND	10.0								
Fluorene	ND	10.0								
Hexachlorobenzene	ND	10.0								
Hexachlorobutadiene	ND	10.0								
Hexachlorocyclopentadiene	ND	10.0								
Hexachloroethane	ND	10.0								
Indeno(1,2,3-cd)pyrene	ND	10.0								
Isophorone	ND	10.0								
1-Methylnaphthalene	ND	10.0								
2-Methylnaphthalene	ND	10.0								
2-Methylphenol	ND	10.0								
3+4-Methylphenol	ND	10.0								
N-Nitrosodi-n-propylamine	ND	10.0								
N-Nitrosodimethylamine	ND	10.0								
N-Nitrosodiphenylamine	ND	10.0								
Naphthalene	ND	10.0								
2-Nitroaniline	ND	10.0								
3-Nitroaniline	ND	10.0								
4-Nitroaniline	ND	10.0								
Nitrobenzene	ND	10.0								
2-Nitrophenol	ND	10.0								
4-Nitrophenol	ND	10.0								
Pentachlorophenol	ND	20.0								
Phenanthrene	ND	10.0								
Phenol	ND	10.0								
Pyrene	ND	10.0								
Pyridine	ND	10.0								
1,2,4-Trichlorobenzene	ND	10.0								
2,4,5-Trichlorophenol	ND	10.0								
2,4,6-Trichlorophenol	ND	10.0								
Surr: 2-Fluorophenol	112		200.0		56.1	14.9	111			
Surr: Phenol-d5	86.3		200.0		43.2	11.3	108			
Surr: 2,4,6-Tribromophenol	146		200.0		72.8	15.7	154			
Surr: Nitrobenzene-d5	77.2		100.0		77.2	47.8	106			
Surr: 2-Fluorobiphenyl	78.8		100.0		78.8	21.3	123			
Surr: 4-Terphenyl-d14	70.9		100.0		70.9	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#: 1505701

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	lcs-19344		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSW		Batch ID: 19344		RunNo: 26418					
Prep Date:	5/21/2015		Analysis Date: 5/26/2015		SeqNo: 785103		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	68.5	10.0	100.0	0	68.5	47.8	99.7			
4-Chloro-3-methylphenol	152	10.0	200.0	0	76.0	58.1	103			
2-Chlorophenol	157	10.0	200.0	0	78.5	49.5	96.8			
1,4-Dichlorobenzene	64.5	10.0	100.0	0	64.5	40.4	89.4			
2,4-Dinitrotoluene	62.9	10.0	100.0	0	62.9	38.6	91.3			
N-Nitrosodi-n-propylamine	85.7	10.0	100.0	0	85.7	53.9	95.6			
4-Nitrophenol	85.5	10.0	200.0	0	42.8	26.4	108			
Pentachlorophenol	116	20.0	200.0	0	58.1	36.5	86.6			
Phenol	99.9	10.0	200.0	0	50.0	29.3	108			
Pyrene	76.7	10.0	100.0	0	76.7	45.7	100			
1,2,4-Trichlorobenzene	67.7	10.0	100.0	0	67.7	39.3	94.5			
Surr: 2-Fluorophenol	127		200.0		63.6	14.9	111			
Surr: Phenol-d5	104		200.0		52.0	11.3	108			
Surr: 2,4,6-Tribromophenol	146		200.0		73.1	15.7	154			
Surr: Nitrobenzene-d5	83.7		100.0		83.7	47.8	106			
Surr: 2-Fluorobiphenyl	74.9		100.0		74.9	21.3	123			
Surr: 4-Terphenyl-d14	57.8		100.0		57.8	14.3	135			

Sample ID	lcsd-19344		SampType: LCSD		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS02		Batch ID: 19344		RunNo: 26418					
Prep Date:	5/21/2015		Analysis Date: 5/26/2015		SeqNo: 785105		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	69.6	10.0	100.0	0	69.6	47.8	99.7	1.65	28.2	
4-Chloro-3-methylphenol	152	10.0	200.0	0	76.0	58.1	103	0	24.4	
2-Chlorophenol	138	10.0	200.0	0	69.0	49.5	96.8	12.8	28.1	
1,4-Dichlorobenzene	56.8	10.0	100.0	0	56.8	40.4	89.4	12.8	31.2	
2,4-Dinitrotoluene	53.4	10.0	100.0	0	53.4	38.6	91.3	16.4	44.4	
N-Nitrosodi-n-propylamine	79.3	10.0	100.0	0	79.3	53.9	95.6	7.73	24.2	
4-Nitrophenol	74.3	10.0	200.0	0	37.2	26.4	108	14.0	36.6	
Pentachlorophenol	110	20.0	200.0	0	55.2	36.5	86.6	5.05	29.5	
Phenol	89.2	10.0	200.0	0	44.6	29.3	108	11.3	30	
Pyrene	73.4	10.0	100.0	0	73.4	45.7	100	4.45	31	
1,2,4-Trichlorobenzene	63.0	10.0	100.0	0	63.0	39.3	94.5	7.23	24	
Surr: 2-Fluorophenol	118		200.0		59.1	14.9	111	0	0	
Surr: Phenol-d5	97.2		200.0		48.6	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	149		200.0		74.4	15.7	154	0	0	
Surr: Nitrobenzene-d5	77.1		100.0		77.1	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	76.7		100.0		76.7	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#: 1505701

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	lcsd-19344		SampType: LCSD		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS02		Batch ID: 19344		RunNo: 26418					
Prep Date:	5/21/2015		Analysis Date: 5/26/2015		SeqNo: 785105		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	57.3		100.0		57.3	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505701

04-Nov-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:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782177	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	10		10.00		102	70	130			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782181	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	91.6	80.6	122			
Surr: BFB	9.8		10.00		97.7	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

Sample Log-In Check List

Client Name: **Western Refining Gallup**

Work Order Number: **1505701**

RcptNo: 1

Received by/date:

[Signature] 05/15/15

Logged By: **Lindsay Mangin**

5/15/2015 8:55:00 AM

[Signature]

Completed By: **Lindsay Mangin**

5/15/2015 9:42:52 AM

[Signature]

Reviewed By:

[Signature] 05/19/15

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 ☒

CS 05/15/15

9. Was preservative added to bottles?

Yes ☒

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☒

No ☒

CS 05/15/15 Sample -001B (3 of 3) h
No VOA Vials ☐ a bubble.

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, 1
(<2 or >12 unless noted)

Adjusted? yes

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 metals analysis, added 2ml HNO_3 for acceptable pH. Held in Login for 24 hours. For 300 analysis, poured off from a 1L Amber into a 500.

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Yes			plastic. CS 05/15/15

Approximately 250mc from plastic bottle used for 8270 analysis due to low sample volume. KMS. 5/21/15

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.

GALLUP REFINERY

Vailing Address: 97 GIANT CROSSING RD

GALLUP, NM 87301

Phone #: 505-722-0231

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

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other

EDD (Type) EXCEL

Date Time Matrix Sample Request ID

5-14-15 1000 WATER SWMU 10-14-GW

1 L AMBER-2

250 ML AMBER-1

100 ML PLASTIC-1

500 ML PLASTIC-1

500 ML PLASTIC-1

50 ML PLASTIC-1

40 ML VOA-4

5-14-15 - WATER TRIP BLANK

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

SWMU 10

Project #:

Project Manager:

CHERYL JOHNSON

Sampler: TRACY PAYNE

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.1

Container Type and #

Preservative Type

HEAL No.

40 ML VOA-6

1 L AMBER-2

250 ML AMBER-1

100 ML PLASTIC-1

500 ML PLASTIC-1

500 ML PLASTIC-1

50 ML PLASTIC-1

40 ML VOA-4

5-14-15 1000

WATER SWMU 10-14-GW

1 L AMBER-2

250 ML AMBER-1

100 ML PLASTIC-1

500 ML PLASTIC-1

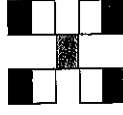
500 ML PLASTIC-1

50 ML PLASTIC-1

40 ML VOA-4

5-14-15 1000

WATER SWMU 10-14-GW



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

BTEX + MTBE + TMBs (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)	PCRA 8 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 & DISSOLV)	GEN CHEM	CR6	Air Bubbles (Y or N)

Remarks:

Date:	Time:	Relinquished by:	Received by:	Date:	Time:
5/14/15	1315	<u>TRACY PAYNE</u>	<u>CHERYL JOHNSON</u>	5/14/15	1315
Date:	Time:	Relinquished by:	Received by:	Date:	Time:
5/14/15	855	<u>TRACY PAYNE</u>	<u>CHERYL JOHNSON</u>	5/15/15	0855

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

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

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 04, 2015

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

RE: SWMU 10

OrderNo.: 1505705

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 3 sample(s) on 5/15/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 25, 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'.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505705

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-16 (2-4')

Project: SWMU 10

Collection Date: 5/13/2015 3:55:00 PM

Lab ID: 1505705-001

Matrix: SOIL

Received Date: 5/15/2015 8:55:00 AM

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	5/20/2015 9:51:39 AM	19293
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg-dr	1	5/20/2015 9:51:39 AM	19293
Surr: DNOP	97.0	0	57.9-140		%REC	1	5/20/2015 9:51:39 AM	19293
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	11	1.0	1.0		wt%	1	5/15/2015 11:35:00 AM	R26235
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.0048	0.0032	0.036	J	mg/Kg-dr	1	6/2/2015 10:06:43 AM	19476
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.5	2.8		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Arsenic	1.8	0.66	5.6	J	mg/Kg-dr	2	5/20/2015 12:09:32 PM	19279
Barium	500	0.067	0.22		mg/Kg-dr	2	5/20/2015 12:09:32 PM	19279
Beryllium	0.79	0.0083	0.17		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Chromium	9.3	0.068	0.34		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Cobalt	4.4	0.043	0.34		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Iron	15000	68	280		mg/Kg-dr	100	5/20/2015 10:32:29 AM	19279
Lead	2.9	0.12	0.28		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Manganese	460	0.13	0.22		mg/Kg-dr	2	5/20/2015 12:09:32 PM	19279
Nickel	7.7	0.14	0.56		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Silver	ND	0.034	0.28		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Vanadium	21	0.038	2.8		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
Zinc	15	0.72	2.8		mg/Kg-dr	1	5/20/2015 12:08:11 PM	19279
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Aniline	ND	0.097	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Anthracene	ND	0.095	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Azobenzene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Benz(a)anthracene	ND	0.088	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Benzo(a)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Benzo(b)fluoranthene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Benzo(g,h,i)perylene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Benzo(k)fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Benzoic acid	ND	0.064	0.56		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Benzyl alcohol	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270

Refer to the QC Summary report and 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 10-16 (2-4')

Project: SWMU 10

Collection Date: 5/13/2015 3:55:00 PM

Lab ID: 1505705-001

Matrix: SOIL

Received Date: 5/15/2015 8:55:00 AM

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	5/21/2015 1:41:40 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.085	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.13	0.56		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Butyl benzyl phthalate	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
4-Chloro-3-methylphenol	ND	0.11	0.56		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
4-Chloroaniline	ND	0.10	0.56		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
4-Chlorophenyl phenyl ether	ND	0.17	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Di-n-butyl phthalate	ND	0.13	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Di-n-octyl phthalate	ND	0.12	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
1,3-Dichlorobenzene	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
1,4-Dichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
3,3'-Dichlorobenzidine	ND	0.086	0.28		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Diethyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2,4-Dichlorophenol	ND	0.11	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2,4-Dimethylphenol	ND	0.088	0.34		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.061	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2,4-Dinitrophenol	ND	0.046	0.56		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2,4-Dinitrotoluene	ND	0.10	0.56		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2,6-Dinitrotoluene	ND	0.12	0.56		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Fluoranthene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Hexachlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Hexachlorocyclopentadiene	ND	0.078	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Hexachloroethane	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Isophorone	ND	0.12	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2-Methylphenol	ND	0.11	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270

Refer to the QC Summary report and 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 1505705

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-16 (2-4')

Project: SWMU 10

Collection Date: 5/13/2015 3:55:00 PM

Lab ID: 1505705-001

Matrix: SOIL

Received Date: 5/15/2015 8:55:00 AM

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	5/21/2015 1:41:40 PM	19270
N-Nitrosodi-n-propylamine	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
N-Nitrosodiphenylamine	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Naphthalene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2-Nitroaniline	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
4-Nitroaniline	ND	0.10	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Nitrobenzene	ND	0.12	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2-Nitrophenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
4-Nitrophenol	ND	0.096	0.28		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Pentachlorophenol	ND	0.070	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Phenanthrene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Phenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Pyridine	ND	0.094	0.45		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
2,4,6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 1:41:40 PM	19270
Surr: 2-Fluorophenol	49.8		26.4-129		%REC	1	5/21/2015 1:41:40 PM	19270
Surr: Phenol-d5	55.4		34.8-118		%REC	1	5/21/2015 1:41:40 PM	19270
Surr: 2,4,6-Tribromophenol	52.3		26.8-128		%REC	1	5/21/2015 1:41:40 PM	19270
Surr: Nitrobenzene-d5	55.7		35.8-124		%REC	1	5/21/2015 1:41:40 PM	19270
Surr: 2-Fluorobiphenyl	56.7		24.5-139		%REC	1	5/21/2015 1:41:40 PM	19270
Surr: 4-Terphenyl-d14	54.9		29.4-129		%REC	1	5/21/2015 1:41:40 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.00112	0.000466	0.00207	J	mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Toluene	0.00104	0.000215	0.00207	J	mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Ethylbenzene	ND	0.000348	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Xylenes, Total	ND	0.00123	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Methyl tert-butyl ether (MTBE)	ND	0.000868	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,2,4-Trimethylbenzene	ND	0.000541	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,3,5-Trimethylbenzene	ND	0.000363	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,2-Dichloroethane (EDC)	ND	0.000555	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,2-Dibromoethane (EDB)	ND	0.000248	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Naphthalene	ND	0.000677	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1-Methylnaphthalene	ND	0.000813	0.00414		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
2-Methylnaphthalene	ND	0.000809	0.00414		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Acetone	0.0254	0.00129	0.0104		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Bromobenzene	ND	0.000576	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243

Refer to the QC Summary report and 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 10-16 (2-4')

Project: SWMU 10

Collection Date: 5/13/2015 3:55:00 PM

Lab ID: 1505705-001

Matrix: SOIL

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Bromodichloromethane	ND	0.000280	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Bromoform	ND	0.000536	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Bromomethane	ND	0.00122	0.00311		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
2-Butanone	0.00304	0.000663	0.0104	J	mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Carbon tetrachloride	ND	0.000375	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Chlorobenzene	ND	0.000210	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Chloroethane	ND	0.00207	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Chloroform	ND	0.000426	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Chloromethane	ND	0.000244	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
2-Chlorotoluene	ND	0.000404	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Carbon disulfide	ND	0.000937	0.0104		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
4-Chlorotoluene	ND	0.000399	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
cis-1,2-DCE	ND	0.000548	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
cis-1,3-Dichloropropene	ND	0.00207	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,2-Dibromo-3-chloropropane	ND	0.000608	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Dibromochloromethane	ND	0.000232	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Dibromomethane	ND	0.00118	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,2-Dichlorobenzene	ND	0.000459	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,3-Dichlorobenzene	ND	0.000351	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,4-Dichlorobenzene	ND	0.000325	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Dichlorodifluoromethane	ND	0.000845	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,1-Dichloroethane	ND	0.000484	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,1-Dichloroethene	ND	0.000346	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,2-Dichloropropane	ND	0.000442	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,3-Dichloropropane	ND	0.000322	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
2,2-Dichloropropane	ND	0.000360	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,1-Dichloropropene	ND	0.000379	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Hexachlorobutadiene	ND	0.000418	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Isopropylbenzene	ND	0.000480	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
4-Isopropyltoluene	ND	0.000803	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Methylene chloride	ND	0.000512	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
n-Butylbenzene	ND	0.000850	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
2-Hexanone	0.000787	0.000431	0.0104	J	mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
n-Propylbenzene	ND	0.000388	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
sec-Butylbenzene	ND	0.000523	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Styrene	ND	0.000343	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
4-Methyl-2-pentanone	ND	0.000874	0.0104		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
tert-Butylbenzene	ND	0.000317	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,1,1,2-Tetrachloroethane	ND	0.000337	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243

Refer to the QC Summary report and 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 1505705

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-16 (2-4')

Project: SWMU 10

Collection Date: 5/13/2015 3:55:00 PM

Lab ID: 1505705-001

Matrix: SOIL

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
1,1,2,2-Tetrachloroethane	ND	0.000455	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Tetrachloroethene (PCE)	ND	0.000410	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
trans-1,2-DCE	ND	0.000335	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
trans-1,3-Dichloropropene	ND	0.000271	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,2,3-Trichlorobenzene	ND	0.000757	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,2,4-Trichlorobenzene	ND	0.000776	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,1,1-Trichloroethane	ND	0.000295	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,1,2-Trichloroethane	ND	0.00207	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Trichloroethene (TCE)	ND	0.000411	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Trichlorofluoromethane	ND	0.000418	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
1,2,3-Trichloropropane	ND	0.000727	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Vinyl chloride	ND	0.000236	0.00207		mg/Kg-dr	1	5/15/2015 2:29:07 PM	19243
Surr: 1,2-Dichloroethane-d4	91.7	0	70-130		%REC	1	5/15/2015 2:29:07 PM	19243
Surr: 4-Bromofluorobenzene	104	0	70-130		%REC	1	5/15/2015 2:29:07 PM	19243
Surr: Dibromofluoromethane	90.0	0	70-130		%REC	1	5/15/2015 2:29:07 PM	19243
Surr: Toluene-d8	86.9	0	70-130		%REC	1	5/15/2015 2:29:07 PM	19243
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.75	3.0		mg/Kg-dr	1	5/15/2015 6:34:28 PM	R26221
Surr: BFB	107	0	67.4-150		%REC	1	5/15/2015 6:34:28 PM	R26221

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	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 1505705

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-16 (4-5.5')

Project: SWMU 10

Collection Date: 5/13/2015 4:10:00 PM

Lab ID: 1505705-002

Matrix: SOIL

Received Date: 5/15/2015 8:55:00 AM

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	1	5/20/2015 10:13:02 AM	19293
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg	1	5/20/2015 10:13:02 AM	19293
Surr: DNOP	95.0	0	57.9-140		%REC	1	5/20/2015 10:13:02 AM	19293
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	9.9	1.0	1.0		wt%	1	5/15/2015 11:35:00 AM	R26235
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.0037	0.0030	0.034	J	mg/Kg-dr	1	6/2/2015 10:08:29 AM	19476
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.4	2.7		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Arsenic	1.4	0.32	2.7	J	mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Barium	430	0.065	0.22		mg/Kg-dr	2	5/20/2015 12:16:52 PM	19279
Beryllium	0.73	0.0081	0.16		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Cadmium	ND	0.030	0.11		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Chromium	8.8	0.066	0.33		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Cobalt	4.2	0.041	0.33		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Iron	15000	66	270		mg/Kg-dr	100	5/20/2015 10:33:51 AM	19279
Lead	3.0	0.12	0.27		mg/Kg-dr	1	5/20/2015 1:25:39 PM	19279
Manganese	240	0.064	0.11		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Nickel	7.2	0.14	0.55		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Selenium	ND	1.7	2.7		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Silver	ND	0.033	0.27		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Vanadium	22	0.037	2.7		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
Zinc	14	0.70	2.7		mg/Kg-dr	1	5/20/2015 12:15:38 PM	19279
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Aniline	ND	0.096	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Anthracene	ND	0.094	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Azobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Benz(a)anthracene	ND	0.087	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Benzo(a)pyrene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Benzo(b)fluoranthene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Benzo(g,h,i)perylene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Benzo(k)fluoranthene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Benzoic acid	ND	0.063	0.55		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Benzyl alcohol	ND	0.098	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270

Refer to the QC Summary report and 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 10-16 (4-5.5')

Project: SWMU 10

Collection Date: 5/13/2015 4:10:00 PM

Lab ID: 1505705-002

Matrix: SOIL

Received Date: 5/15/2015 8:55:00 AM

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	5/21/2015 2:09:19 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.084	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.12	0.55		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Butyl benzyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
4-Chloro-3-methylphenol	ND	0.11	0.55		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
4-Chloroaniline	ND	0.10	0.55		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
4-Chlorophenyl phenyl ether	ND	0.16	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Di-n-butyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Di-n-octyl phthalate	ND	0.12	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
1,3-Dichlorobenzene	ND	0.098	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
1,4-Dichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
3,3'-Dichlorobenzidine	ND	0.085	0.28		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Diethyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2,4-Dichlorophenol	ND	0.11	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2,4-Dimethylphenol	ND	0.087	0.33		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.060	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2,4-Dinitrophenol	ND	0.046	0.55		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2,4-Dinitrotoluene	ND	0.099	0.55		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2,6-Dinitrotoluene	ND	0.12	0.55		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Hexachlorobenzene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Hexachlorocyclopentadiene	ND	0.077	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Hexachloroethane	ND	0.098	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Isophorone	ND	0.12	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2-Methylphenol	ND	0.11	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270

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Hall Environmental Analysis Laboratory, Inc.

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Client Sample ID: SWMU 10-16 (4-5.5')

Project: SWMU 10

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Lab ID: 1505705-002

Matrix: SOIL

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
3+4-Methylphenol	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
N-Nitrosodiphenylamine	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Naphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2-Nitroaniline	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
4-Nitroaniline	ND	0.099	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Nitrobenzene	ND	0.11	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2-Nitrophenol	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
4-Nitrophenol	ND	0.095	0.28		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Pentachlorophenol	ND	0.069	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Phenanthrene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Phenol	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Pyridine	ND	0.093	0.44		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
2,4,6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:09:19 PM	19270
Surr: 2-Fluorophenol	57.0		26.4-129		%REC	1	5/21/2015 2:09:19 PM	19270
Surr: Phenol-d5	66.3		34.8-118		%REC	1	5/21/2015 2:09:19 PM	19270
Surr: 2,4,6-Tribromophenol	69.1		26.8-128		%REC	1	5/21/2015 2:09:19 PM	19270
Surr: Nitrobenzene-d5	61.2		35.8-124		%REC	1	5/21/2015 2:09:19 PM	19270
Surr: 2-Fluorobiphenyl	62.1		24.5-139		%REC	1	5/21/2015 2:09:19 PM	19270
Surr: 4-Terphenyl-d14	65.3		29.4-129		%REC	1	5/21/2015 2:09:19 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.00221	0.000430	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Toluene	0.00151	0.000199	0.00191	J	mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Ethylbenzene	0.000401	0.000321	0.00191	J	mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Xylenes, Total	ND	0.00114	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Methyl tert-butyl ether (MTBE)	ND	0.000801	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,2,4-Trimethylbenzene	ND	0.000499	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,3,5-Trimethylbenzene	ND	0.000335	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,2-Dichloroethane (EDC)	ND	0.000512	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,2-Dibromoethane (EDB)	ND	0.000228	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Naphthalene	ND	0.000624	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1-Methylnaphthalene	ND	0.000750	0.00382		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
2-Methylnaphthalene	ND	0.000746	0.00382		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Acetone	0.00651	0.00119	0.00955	J	mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Bromobenzene	ND	0.000531	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243

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	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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CLIENT: Western Refining Company

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Project: SWMU 10

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Lab ID: 1505705-002

Matrix: SOIL

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Bromodichloromethane	ND	0.000258	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Bromoform	ND	0.000495	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Bromomethane	ND	0.00113	0.00287		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
2-Butanone	0.00146	0.000612	0.00955	J	mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Carbon tetrachloride	ND	0.000346	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Chlorobenzene	ND	0.000194	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Chloroethane	ND	0.00191	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Chloroform	ND	0.000393	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Chloromethane	ND	0.000225	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
2-Chlorotoluene	ND	0.000373	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Carbon disulfide	ND	0.000864	0.00955		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
4-Chlorotoluene	ND	0.000368	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
cis-1,2-DCE	ND	0.000505	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
cis-1,3-Dichloropropene	ND	0.00191	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,2-Dibromo-3-chloropropane	ND	0.000561	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Dibromochloromethane	ND	0.000214	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Dibromomethane	ND	0.00108	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,2-Dichlorobenzene	ND	0.000424	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,3-Dichlorobenzene	ND	0.000324	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,4-Dichlorobenzene	ND	0.000300	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Dichlorodifluoromethane	ND	0.000780	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,1-Dichloroethane	ND	0.000446	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,1-Dichloroethene	ND	0.000319	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,2-Dichloropropane	ND	0.000408	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,3-Dichloropropane	ND	0.000297	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
2,2-Dichloropropane	ND	0.000332	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,1-Dichloropropene	ND	0.000350	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Hexachlorobutadiene	ND	0.000385	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Isopropylbenzene	ND	0.000443	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
4-Isopropyltoluene	ND	0.000741	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Methylene chloride	0.000506	0.000472	0.00191	J	mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
n-Butylbenzene	ND	0.000784	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
2-Hexanone	0.000669	0.000397	0.00955	J	mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
n-Propylbenzene	ND	0.000358	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
sec-Butylbenzene	ND	0.000482	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Styrene	ND	0.000317	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
4-Methyl-2-pentanone	ND	0.000807	0.00955		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
tert-Butylbenzene	ND	0.000293	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,1,1,2-Tetrachloroethane	ND	0.000311	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243

Refer to the QC Summary report and 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 1505705

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-16 (4-5.5')

Project: SWMU 10

Collection Date: 5/13/2015 4:10:00 PM

Lab ID: 1505705-002

Matrix: SOIL

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
1,1,2,2-Tetrachloroethane	ND	0.000420	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Tetrachloroethene (PCE)	ND	0.000379	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
trans-1,2-DCE	ND	0.000309	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
trans-1,3-Dichloropropene	ND	0.000250	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,2,3-Trichlorobenzene	ND	0.000699	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,2,4-Trichlorobenzene	ND	0.000716	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,1,1-Trichloroethane	ND	0.000272	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,1,2-Trichloroethane	ND	0.00191	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Trichloroethene (TCE)	ND	0.000380	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Trichlorofluoromethane	ND	0.000386	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
1,2,3-Trichloropropane	ND	0.000671	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Vinyl chloride	ND	0.000218	0.00191		mg/Kg-dr	1	5/15/2015 3:58:03 PM	19243
Surr: 1,2-Dichloroethane-d4	95.6	0	70-130		%REC	1	5/15/2015 3:58:03 PM	19243
Surr: 4-Bromofluorobenzene	91.4	0	70-130		%REC	1	5/15/2015 3:58:03 PM	19243
Surr: Dibromofluoromethane	95.3	0	70-130		%REC	1	5/15/2015 3:58:03 PM	19243
Surr: Toluene-d8	84.1	0	70-130		%REC	1	5/15/2015 3:58:03 PM	19243
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.67	2.7		mg/Kg-dr	1	5/15/2015 8:01:09 PM	R26221
Surr: BFB	110	0	67.4-150		%REC	1	5/15/2015 8:01:09 PM	R26221

Refer to the QC Summary report and 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 1505705

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-16 (8-9')

Project: SWMU 10

Collection Date: 5/13/2015 4:20:00 PM

Lab ID: 1505705-003

Matrix: SOIL

Received Date: 5/15/2015 8:55:00 AM

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	5.6	10		mg/Kg	1	5/20/2015 10:34:15 AM	19293
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg	1	5/20/2015 10:34:15 AM	19293
Surr: DNOP	101	0	57.9-140		%REC	1	5/20/2015 10:34:15 AM	19293
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	10	1.0	1.0		wt%	1	5/15/2015 11:35:00 AM	R26235
EPA METHOD 7471: MERCURY							Analyst: MED	
Mercury	0.0054	0.0032	0.037	J	mg/Kg-dr	1	6/2/2015 10:10:15 AM	19476
EPA METHOD 6010B: SOIL METALS							Analyst: ELS	
Antimony	ND	1.5	2.8		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Arsenic	1.3	0.33	2.8	J	mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Barium	55	0.034	0.11		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Beryllium	0.78	0.0084	0.17		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Cadmium	ND	0.031	0.11		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Chromium	10	0.068	0.34		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Cobalt	5.7	0.043	0.34		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Iron	17000	68	280		mg/Kg-dr	100	5/20/2015 10:35:13 AM	19279
Lead	3.3	0.12	0.28		mg/Kg-dr	1	5/20/2015 1:26:55 PM	19279
Manganese	810	0.33	0.56		mg/Kg-dr	5	5/20/2015 1:28:18 PM	19279
Nickel	10	0.15	0.56		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Selenium	ND	1.7	2.8		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Silver	ND	0.034	0.28		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Vanadium	20	0.038	2.8		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
Zinc	18	0.73	2.8		mg/Kg-dr	1	5/20/2015 12:18:07 PM	19279
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Acenaphthylene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Aniline	ND	0.097	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Anthracene	ND	0.095	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Azobenzene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Benz(a)anthracene	ND	0.088	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Benzo(a)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Benzo(b)fluoranthene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Benzo(g,h,i)perylene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Benzo(k)fluoranthene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Benzoic acid	ND	0.064	0.56		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Benzyl alcohol	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Bis(2-chloroethoxy)methane	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270

Refer to the QC Summary report and 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 10-16 (8-9')

Project: SWMU 10

Collection Date: 5/13/2015 4:20:00 PM

Lab ID: 1505705-003

Matrix: SOIL

Received Date: 5/15/2015 8:55:00 AM

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	5/21/2015 2:37:02 PM	19270
Bis(2-chloroisopropyl)ether	ND	0.085	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Bis(2-ethylhexyl)phthalate	ND	0.13	0.56		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
4-Bromophenyl phenyl ether	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Butyl benzyl phthalate	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Carbazole	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
4-Chloro-3-methylphenol	ND	0.11	0.56		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
4-Chloroaniline	ND	0.10	0.56		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2-Chloronaphthalene	ND	0.12	0.28		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2-Chlorophenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
4-Chlorophenyl phenyl ether	ND	0.17	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Chrysene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Di-n-butyl phthalate	ND	0.13	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Di-n-octyl phthalate	ND	0.12	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Dibenz(a,h)anthracene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Dibenzofuran	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
1,2-Dichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
1,3-Dichlorobenzene	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
1,4-Dichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
3,3'-Dichlorobenzidine	ND	0.086	0.28		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Diethyl phthalate	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Dimethyl phthalate	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2,4-Dichlorophenol	ND	0.11	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2,4-Dimethylphenol	ND	0.088	0.34		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
4,6-Dinitro-2-methylphenol	ND	0.061	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2,4-Dinitrophenol	ND	0.046	0.56		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2,4-Dinitrotoluene	ND	0.10	0.56		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2,6-Dinitrotoluene	ND	0.12	0.56		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Fluoranthene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Fluorene	ND	0.15	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Hexachlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Hexachlorobutadiene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Hexachlorocyclopentadiene	ND	0.077	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Hexachloroethane	ND	0.099	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Indeno(1,2,3-cd)pyrene	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Isophorone	ND	0.12	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
1-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2-Methylnaphthalene	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2-Methylphenol	ND	0.11	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270

Refer to the QC Summary report and 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 1505705

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-16 (8-9')

Project: SWMU 10

Collection Date: 5/13/2015 4:20:00 PM

Lab ID: 1505705-003

Matrix: SOIL

Received Date: 5/15/2015 8:55:00 AM

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	5/21/2015 2:37:02 PM	19270
N-Nitrosodi-n-propylamine	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
N-Nitrosodiphenylamine	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Naphthalene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2-Nitroaniline	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
3-Nitroaniline	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
4-Nitroaniline	ND	0.10	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Nitrobenzene	ND	0.12	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2-Nitrophenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
4-Nitrophenol	ND	0.096	0.28		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Pentachlorophenol	ND	0.070	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Phenanthrene	ND	0.12	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Phenol	ND	0.10	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Pyrene	ND	0.14	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Pyridine	ND	0.094	0.45		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
1,2,4-Trichlorobenzene	ND	0.11	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2,4,5-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
2,4,6-Trichlorophenol	ND	0.13	0.22		mg/Kg-dr	1	5/21/2015 2:37:02 PM	19270
Surr: 2-Fluorophenol	66.3		26.4-129		%REC	1	5/21/2015 2:37:02 PM	19270
Surr: Phenol-d5	69.0		34.8-118		%REC	1	5/21/2015 2:37:02 PM	19270
Surr: 2,4,6-Tribromophenol	61.5		26.8-128		%REC	1	5/21/2015 2:37:02 PM	19270
Surr: Nitrobenzene-d5	67.9		35.8-124		%REC	1	5/21/2015 2:37:02 PM	19270
Surr: 2-Fluorobiphenyl	65.8		24.5-139		%REC	1	5/21/2015 2:37:02 PM	19270
Surr: 4-Terphenyl-d14	57.8		29.4-129		%REC	1	5/21/2015 2:37:02 PM	19270
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Benzene	0.0176	0.000405	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Toluene	0.0135	0.000187	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Ethylbenzene	0.00347	0.000302	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Xylenes, Total	0.00946	0.00107	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Methyl tert-butyl ether (MTBE)	ND	0.000754	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,2,4-Trimethylbenzene	0.00269	0.000470	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,3,5-Trimethylbenzene	0.00170	0.000315	0.00180	J	mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,2-Dichloroethane (EDC)	ND	0.000482	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,2-Dibromoethane (EDB)	ND	0.000215	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Naphthalene	0.000845	0.000587	0.00180	J	mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1-Methylnaphthalene	ND	0.000706	0.00360		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
2-Methylnaphthalene	ND	0.000702	0.00360		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Acetone	0.00313	0.00112	0.00899	J	mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Bromobenzene	ND	0.000500	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243

Refer to the QC Summary report and 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 10-16 (8-9')

Project: SWMU 10

Collection Date: 5/13/2015 4:20:00 PM

Lab ID: 1505705-003

Matrix: SOIL

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
Bromodichloromethane	ND	0.000243	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Bromoform	ND	0.000466	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Bromomethane	ND	0.00106	0.00270		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
2-Butanone	0.00173	0.000576	0.00899	J	mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Carbon tetrachloride	ND	0.000325	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Chlorobenzene	ND	0.000182	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Chloroethane	ND	0.00180	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Chloroform	ND	0.000370	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Chloromethane	ND	0.000212	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
2-Chlorotoluene	ND	0.000351	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Carbon disulfide	ND	0.000814	0.00899		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
4-Chlorotoluene	ND	0.000346	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
cis-1,2-DCE	ND	0.000475	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
cis-1,3-Dichloropropene	ND	0.00180	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,2-Dibromo-3-chloropropane	ND	0.000528	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Dibromochloromethane	ND	0.000202	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Dibromomethane	ND	0.00102	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,2-Dichlorobenzene	ND	0.000399	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,3-Dichlorobenzene	ND	0.000305	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,4-Dichlorobenzene	ND	0.000282	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Dichlorodifluoromethane	ND	0.000734	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,1-Dichloroethane	ND	0.000420	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,1-Dichloroethene	ND	0.000300	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,2-Dichloropropane	ND	0.000384	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,3-Dichloropropane	ND	0.000280	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
2,2-Dichloropropane	ND	0.000312	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,1-Dichloropropene	ND	0.000329	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Hexachlorobutadiene	ND	0.000363	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Isopropylbenzene	0.000539	0.000417	0.00180	J	mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
4-Isopropyltoluene	ND	0.000698	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Methylene chloride	0.000611	0.000444	0.00180	J	mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
n-Butylbenzene	ND	0.000738	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
2-Hexanone	ND	0.000374	0.00899		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
n-Propylbenzene	0.000494	0.000337	0.00180	J	mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
sec-Butylbenzene	0.000683	0.000454	0.00180	J	mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Styrene	ND	0.000298	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
4-Methyl-2-pentanone	ND	0.000759	0.00899		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
tert-Butylbenzene	ND	0.000276	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,1,1,2-Tetrachloroethane	ND	0.000293	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243

Refer to the QC Summary report and 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 1505705

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-16 (8-9')

Project: SWMU 10

Collection Date: 5/13/2015 4:20:00 PM

Lab ID: 1505705-003

Matrix: SOIL

Received Date: 5/15/2015 8:55:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: RAA	
1,1,2,2-Tetrachloroethane	ND	0.000395	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Tetrachloroethene (PCE)	ND	0.000356	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
trans-1,2-DCE	ND	0.000291	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
trans-1,3-Dichloropropene	ND	0.000235	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,2,3-Trichlorobenzene	ND	0.000658	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,2,4-Trichlorobenzene	ND	0.000674	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,1,1-Trichloroethane	ND	0.000256	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,1,2-Trichloroethane	ND	0.00180	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Trichloroethene (TCE)	ND	0.000357	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Trichlorofluoromethane	ND	0.000363	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
1,2,3-Trichloropropane	ND	0.000631	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Vinyl chloride	ND	0.000205	0.00180		mg/Kg-dr	1	5/15/2015 4:27:26 PM	19243
Surr: 1,2-Dichloroethane-d4	87.5	0	70-130		%REC	1	5/15/2015 4:27:26 PM	19243
Surr: 4-Bromofluorobenzene	98.5	0	70-130		%REC	1	5/15/2015 4:27:26 PM	19243
Surr: Dibromofluoromethane	97.6	0	70-130		%REC	1	5/15/2015 4:27:26 PM	19243
Surr: Toluene-d8	89.7	0	70-130		%REC	1	5/15/2015 4:27:26 PM	19243
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.73	2.9		mg/Kg-dr	1	5/15/2015 8:30:07 PM	R26221
Surr: BFB	115	0	67.4-150		%REC	1	5/15/2015 8:30:07 PM	R26221

Refer to the QC Summary report and 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
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REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 19, 2015
Description :
Sample ID : 1505705-001C SWMU 10-16 2-4FT
Collected By :
Collection Date : 05/13/15 15:55

ESC Sample # : L765944-01

Site ID :

Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Cyanide	U	0.039	0.25	mg/kg		9012B	05/26/15	1
Chromium, Hexavalent	U	0.64	2.0	mg/kg		3060A/7	05/22/15	1
ORP	76.			mV		2580 B-	05/23/15	1
pH	7.9	0.010	0.10	su		9045D	05/21/15	1

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = TRRP SDL

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

Note:

The reported analytical results relate only to the sample submitted.

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L765944-01 (PH) - 7.9 at 21.5c



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REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 19, 2015
Description :
Sample ID : 1505705-002C SWMU 10-16 4-5.5FT
Collected By :
Collection Date : 05/13/15 16:10

ESC Sample # : L765944-02

Site ID :

Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Cyanide	U	0.039	0.25	mg/kg		9012B	05/26/15	1
Chromium, Hexavalent	U	0.64	2.0	mg/kg		3060A/7	05/22/15	1
ORP	38.			mV		2580 B-	05/23/15	1
pH	9.0	0.010	0.10	su		9045D	05/21/15	1

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = TRRP SDL

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

Note:

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L765944-02 (PH) - 9.0 at 21.0c



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REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 19, 2015
Description :
Sample ID : 1505705-003C SWMU 10-16 8-9FT
Collected By :
Collection Date : 05/13/15 16:20

ESC Sample # : L765944-03
Site ID :
Project # :

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Cyanide	U	0.039	0.25	mg/kg		9012B	05/26/15	1
Chromium, Hexavalent	U	0.64	2.0	mg/kg		3060A/7	05/22/15	1
ORP	41.			mV		2580 B-	05/23/15	1
pH	8.8	0.010	0.10	su		9045D	05/21/15	1

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = TRRP SDL

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

Note:

The reported analytical results relate only to the sample submitted.

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L765944-03 (PH) - 8.8 at 20.9c



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Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765944

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June 02, 2015

Analyte	Result	Laboratory Blank Units % Rec	Limit	Batch	Date Analyzed
Chromium, Hexavalent	< 2	mg/kg		WG790681	05/22/15 14:15
Cyanide	< .25	mg/kg		WG790306	05/26/15 09:43

Analyte	Units	Result	Duplicate Duplicate	RPD	Limit	Ref Samp	Batch
pH	su	7.00	7.00	0.143	1	L765520-16	WG790425
pH	su	6.30	6.30	0.633	1	L766317-01	WG790425
Chromium, Hexavalent	mg/kg	0.0	0.0	0.0	20	L765944-01	WG790681
ORP	mV	54.0	56.0	3.64	20	L765419-02	WG790617
ORP	mV	46.0	45.0	2.20	20	L766227-03	WG790617
Cyanide	mg/kg	0.0	0.0	0.0	20	L765924-01	WG790306
Cyanide	mg/kg	0.0	0.0	0.0	20	L766617-01	WG790306

Analyte	Units	Laboratory Control Known Val	Sample Result	% Rec	Limit	Batch
pH	su	7.84	7.77	99.1	98.3-101.7	WG790425
Chromium, Hexavalent	mg/kg	59.8	59.8	100.	80-120	WG790681
ORP	mV	100	101.	101.	90-110	WG790617
Cyanide	mg/kg	101	124.	123.	50-150	WG790306

Analyte	Units	Result	Laboratory Control Ref	Sample Duplicate %Rec	Limit	RPD	Limit	Batch
pH	su	7.78	7.77	99.0	98.3-101.7	0.129	20	WG790425
Chromium, Hexavalent	mg/kg	60.2	59.8	101.	80-120	0.667	20	WG790681
ORP	mV	100.	101.	100.	90-110	0.995	20	WG790617
Cyanide	mg/kg	122.	124.	121.	50-150	1.63	20	WG790306

Analyte	Units	MS Res	Matrix Spike Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Chromium, Hexavalent	mg/kg	19.8	0.0	20	99.0	75-125	L765944-01	WG790681
Cyanide	mg/kg	2.97	0.0	3.33	89.0	80-120	L765924-04	WG790306

* 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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June 02, 2015

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Chromium, Hexavalent	mg/kg	19.9	19.8	99.5	75-125	0.504	20	L765944-01	WG790681
Cyanide	mg/kg	3.18	2.97	95.5	80-120	6.83	20	L765924-04	WG790306

Batch number / Run number / Sample number cross reference

WG790425: R3038502: L765944-01 02 03
WG790681: R3038806: L765944-01 02 03
WG790617: R3039123: L765944-01 02 03
WG790306: R3039168: L765944-01 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#: 1505705

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19293		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 19293		RunNo: 26304					
Prep Date:	5/19/2015		Analysis Date: 5/20/2015		SeqNo: 781491		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		104	57.9	140			

Sample ID	LCS-19293		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 19293		RunNo: 26304					
Prep Date:	5/19/2015		Analysis Date: 5/20/2015		SeqNo: 781492		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	100	67.8	130			
Surr: DNOP	5.1		5.000		101	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#: 1505705

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	1505705-001ams		SampType:	MS		TestCode:	Method 8260B/5035LOW: VOLATILES			
Client ID:	SWMU 10-16 (2-4')		Batch ID:	19243		RunNo:	26232			
Prep Date:	5/15/2015		Analysis Date:	5/15/2015		SeqNo:	778534		Units: mg/Kg-dry	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0132	0.00222	0.01112	0.001118	109	33.4	127			
Toluene	0.0123	0.00222	0.01112	0.001035	101	24.8	130			
Chlorobenzene	0.0105	0.00222	0.01112	0	94.0	25.8	132			
1,1-Dichloroethene	0.0139	0.00222	0.01112	0	125	70	130			
Trichloroethene (TCE)	0.0130	0.00222	0.01112	0	117	70	130			
Surr: 1,2-Dichloroethane-d4	0.0255		0.02781		91.7	70	130			
Surr: 4-Bromofluorobenzene	0.0253		0.02781		90.8	70	130			
Surr: Dibromofluoromethane	0.0276		0.02781		99.3	70	130			
Surr: Toluene-d8	0.0261		0.02781		93.7	70	130			

Sample ID	1505705-001amsd		SampType:	MSD		TestCode:	Method 8260B/5035LOW: VOLATILES			
Client ID:	SWMU 10-16 (2-4')		Batch ID:	19243		RunNo:	26232			
Prep Date:	5/15/2015		Analysis Date:	5/15/2015		SeqNo:	778535		Units: mg/Kg-dry	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0134	0.00224	0.01121	0.001118	110	33.4	127	1.55	20	
Toluene	0.0128	0.00224	0.01121	0.001035	105	24.8	130	4.27	20	
Chlorobenzene	0.0113	0.00224	0.01121	0	101	25.8	132	7.68	20	
1,1-Dichloroethene	0.0140	0.00224	0.01121	0	125	70	130	0.556	20	
Trichloroethene (TCE)	0.0127	0.00224	0.01121	0	113	70	130	2.50	20	
Surr: 1,2-Dichloroethane-d4	0.0243		0.02803		86.8	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.0271		0.02803		96.8	70	130	0	0	
Surr: Dibromofluoromethane	0.0259		0.02803		92.3	70	130	0	0	
Surr: Toluene-d8	0.0269		0.02803		96.0	70	130	0	0	

Sample ID	lcs-19243		SampType:	LCS		TestCode:	Method 8260B/5035LOW: VOLATILES			
Client ID:	LCSS		Batch ID:	19243		RunNo:	26232			
Prep Date:	5/15/2015		Analysis Date:	5/15/2015		SeqNo:	778538		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.00986	0.00200	0.01000	0	98.6	70	130			
Toluene	0.00912	0.00200	0.01000	0	91.2	70	130			
Chlorobenzene	0.00864	0.00200	0.01000	0	86.4	70	130			
1,1-Dichloroethene	0.0102	0.00200	0.01000	0	102	70	130			
Trichloroethene (TCE)	0.00966	0.00200	0.01000	0	96.6	61.6	131			
Surr: 1,2-Dichloroethane-d4	0.0235		0.02500		94.2	70	130			
Surr: 4-Bromofluorobenzene	0.0219		0.02500		87.6	70	130			
Surr: Dibromofluoromethane	0.0238		0.02500		95.4	70	130			
Surr: Toluene-d8	0.0218		0.02500		87.2	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#: 1505705

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19243		SampType:	MBLK		TestCode:	Method 8260B/5035LOW: VOLATILES			
Client ID:	PBS		Batch ID:	19243		RunNo:	26232			
Prep Date:	5/15/2015		Analysis Date:	5/15/2015		SeqNo:	778539		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	ND	0.00200								
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	0.000820	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:

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

B Analyte detected in the 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#: 1505705

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19243		SampType:	MBLK		TestCode:	Method 8260B/5035LOW: VOLATILES			
Client ID:	PBS		Batch ID:	19243		RunNo:	26232			
Prep Date:	5/15/2015		Analysis Date:	5/15/2015		SeqNo:	778539		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	0.0229		0.02500		91.7	70	130			
Surr: 4-Bromofluorobenzene	0.0209		0.02500		83.5	70	130			
Surr: Dibromofluoromethane	0.0224		0.02500		89.5	70	130			
Surr: Toluene-d8	0.0231		0.02500		92.5	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#: 1505705

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19270		SampType:	MBLK		TestCode:	EPA Method 8270C: Semivolatiles			
Client ID:	PBS		Batch ID:	19270		RunNo:	26300			
Prep Date:	5/18/2015		Analysis Date:	5/19/2015		SeqNo:	781322		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#: 1505705

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19270		SampType: MBLK			TestCode: EPA Method 8270C: Semivolatiles				
Client ID:	PBS		Batch ID: 19270			RunNo: 26300				
Prep Date:	5/18/2015		Analysis Date: 5/19/2015			SeqNo: 781322		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	3.0		3.330		89.3	26.4	129			
Surr: Phenol-d5	2.9		3.330		86.8	34.8	118			
Surr: 2,4,6-Tribromophenol	2.9		3.330		85.8	26.8	128			
Surr: Nitrobenzene-d5	1.5		1.670		88.3	35.8	124			
Surr: 2-Fluorobiphenyl	1.5		1.670		87.0	24.5	139			
Surr: 4-Terphenyl-d14	1.4		1.670		84.5	29.4	129			

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#: 1505705

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	lcs-19270		SampType: LCS			TestCode: EPA Method 8270C: Semivolatiles				
Client ID:	LCSS		Batch ID: 19270			RunNo: 26300				
Prep Date:	5/18/2015		Analysis Date: 5/19/2015			SeqNo: 781323		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.4	0.20	1.670	0	86.6	45.8	114			
4-Chloro-3-methylphenol	2.9	0.50	3.330	0	88.6	52.3	122			
2-Chlorophenol	2.9	0.20	3.330	0	87.7	49.9	115			
1,4-Dichlorobenzene	1.5	0.20	1.670	0	91.5	43.7	107			
2,4-Dinitrotoluene	1.2	0.50	1.670	0	74.4	36	106			
N-Nitrosodi-n-propylamine	1.3	0.20	1.670	0	80.6	39.5	110			
4-Nitrophenol	2.8	0.25	3.330	0	83.9	45.1	121			
Pentachlorophenol	2.5	0.40	3.330	0	75.8	23.7	111			
Phenol	3.2	0.20	3.330	0	97.0	52.7	119			
Pyrene	1.5	0.20	1.670	0	90.1	50.4	116			
1,2,4-Trichlorobenzene	1.7	0.20	1.670	0	101	40.1	114			
Surr: 2-Fluorophenol	3.3		3.330		98.7	26.4	129			
Surr: Phenol-d5	3.4		3.330		103	34.8	118			
Surr: 2,4,6-Tribromophenol	3.4		3.330		101	26.8	128			
Surr: Nitrobenzene-d5	1.6		1.670		96.4	35.8	124			
Surr: 2-Fluorobiphenyl	1.7		1.670		100	24.5	139			
Surr: 4-Terphenyl-d14	1.5		1.670		87.2	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#: 1505705

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19279		SampType: MBLK		TestCode: EPA Method 6010B: Soil Metals					
Client ID:	PBS		Batch ID: 19279		RunNo: 26309					
Prep Date:	5/18/2015		Analysis Date: 5/20/2015		SeqNo: 781613		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	0.82	2.5								J
Lead	ND	0.25								
Manganese	ND	0.10								
Nickel	ND	0.50								
Selenium	ND	2.5								
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Sample ID	LCS-19279		SampType: LCS		TestCode: EPA Method 6010B: Soil Metals					
Client ID:	LCSS		Batch ID: 19279		RunNo: 26309					
Prep Date:	5/18/2015		Analysis Date: 5/20/2015		SeqNo: 781614		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	26	2.5	25.00	0	105	80	120			
Arsenic	25	2.5	25.00	0	99.0	80	120			
Barium	25	0.10	25.00	0	100	80	120			
Beryllium	26	0.15	25.00	0	106	80	120			
Cadmium	25	0.10	25.00	0	100	80	120			
Chromium	25	0.30	25.00	0	101	80	120			
Cobalt	25	0.30	25.00	0	99.6	80	120			
Iron	26	2.5	25.00	0	104	80	120			
Lead	25	0.25	25.00	0	99.1	80	120			
Manganese	25	0.10	25.00	0	100	80	120			
Nickel	25	0.50	25.00	0	99.1	80	120			
Selenium	25	2.5	25.00	0	101	80	120			
Silver	5.1	0.25	5.000	0	103	80	120			
Vanadium	26	2.5	25.00	0	103	80	120			
Zinc	25	2.5	25.00	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#: 1505705

04-Nov-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:	R26221	RunNo:	26221					
Prep Date:		Analysis Date:	5/15/2015	SeqNo:	778746	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	490		500.0		97.2	67.4	150			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	LCSS	Batch ID:	R26221	RunNo:	26221					
Prep Date:		Analysis Date:	5/15/2015	SeqNo:	778747	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	90.8	79.9	135			
Surr: BFB	480		500.0		96.4	67.4	150			

Sample ID	1505705-001b ms	SampType:	MS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	SWMU 10-16 (2-4')	Batch ID:	R26221	RunNo:	26221					
Prep Date:		Analysis Date:	5/15/2015	SeqNo:	778757	Units:	mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	11	3.0	14.94	0	73.9	65.2	156			
Surr: BFB	320		298.8		106	67.4	150			

Sample ID	1505705-001B MSD	SampType:	MSD	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	SWMU 10-16 (2-4')	Batch ID:	R26221	RunNo:	26221					
Prep Date:		Analysis Date:	5/15/2015	SeqNo:	778758	Units:	mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	11	3.0	14.94	0	70.6	65.2	156	4.60	20	
Surr: BFB	310		298.8		103	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

Sample Log-In Check List

Client Name: **Western Refining Gallup**

Work Order Number: **1505705**

RcptNo: 1

Received by/date:

Logged By: **Lindsay Mangin**

5/15/2015 8:55:00 AM

Completed By: **Lindsay Mangin**

5/15/2015 9:53:30 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? 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 ☐ # of preserved bottles checked for pH: (≤2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐ Adjusted?
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐ Checked by:

Special Handling (if applicable)

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

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

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



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

November 04, 2015

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

RE: SWMU 10

OrderNo.: 1505708

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/15/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 26, 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'.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505708

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-15-GW

Project: SWMU 10

Collection Date: 5/14/2015 4:00:00 PM

Lab ID: 1505708-001

Matrix: AQUEOUS

Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH	
Diesel Range Organics (DRO)	1.0	0.91	1.0		mg/L	1	5/15/2015 9:05:01 PM	19246
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/15/2015 9:05:01 PM	19246
Surr: DNOP	125	0	76.5-150		%REC	1	5/15/2015 9:05:01 PM	19246
EPA METHOD 300.0: ANIONS							Analyst: LGT	
Fluoride	0.55	0.15	0.50		mg/L	5	5/21/2015 12:19:15 AM	R26328
Chloride	2300	27	100		mg/L	200	5/21/2015 12:31:40 AM	R26328
Sulfate	440	2.3	10		mg/L	20	5/15/2015 6:26:16 PM	R26247
EPA METHOD 200.7: DISSOLVED METALS							Analyst: JLF	
Barium	0.22	0.00095	0.0020		mg/L	1	5/15/2015 5:35:46 PM	R26242
Beryllium	ND	0.00031	0.0020		mg/L	1	5/15/2015 5:35:46 PM	R26242
Cadmium	ND	0.00097	0.0020		mg/L	1	5/19/2015 5:01:37 PM	R26291
Chromium	0.0094	0.0018	0.0060		mg/L	1	5/15/2015 5:35:46 PM	R26242
Cobalt	0.023	0.0013	0.0060		mg/L	1	5/15/2015 5:35:46 PM	R26242
Iron	0.61	0.0073	0.020	*	mg/L	1	5/15/2015 5:35:46 PM	R26242
Manganese	2.4	0.0013	0.010	*	mg/L	5	5/19/2015 5:04:37 PM	R26291
Nickel	0.65	0.0021	0.010	*	mg/L	1	5/15/2015 5:35:46 PM	R26242
Silver	ND	0.0012	0.0050		mg/L	1	5/19/2015 5:01:37 PM	R26291
Vanadium	0.0057	0.0015	0.050	J	mg/L	1	5/15/2015 5:35:46 PM	R26242
Zinc	0.15	0.0028	0.010		mg/L	1	5/15/2015 5:35:46 PM	R26242
EPA METHOD 200.7: METALS							Analyst: ELS	
Barium	0.37	0.00095	0.0020		mg/L	1	5/21/2015 4:29:04 PM	19333
Beryllium	0.0015	0.00031	0.0020	J	mg/L	1	5/21/2015 4:29:04 PM	19333
Cadmium	ND	0.00097	0.0020		mg/L	1	5/21/2015 4:29:04 PM	19333
Chromium	0.0062	0.0022	0.0060		mg/L	1	5/21/2015 4:29:04 PM	19333
Cobalt	0.025	0.0013	0.0060		mg/L	1	5/21/2015 4:29:04 PM	19333
Iron	9.4	0.15	0.40	*	mg/L	20	5/27/2015 3:41:18 PM	19333
Manganese	2.9	0.0076	0.010	*	mg/L	5	5/21/2015 4:30:52 PM	19333
Nickel	0.64	0.0023	0.010	*	mg/L	1	5/21/2015 4:29:04 PM	19333
Silver	ND	0.0021	0.0050		mg/L	1	5/21/2015 4:29:04 PM	19333
Vanadium	0.019	0.0015	0.050	J	mg/L	1	5/21/2015 4:29:04 PM	19333
Zinc	0.046	0.0036	0.010		mg/L	1	5/21/2015 4:29:04 PM	19333
EPA 200.8: DISSOLVED METALS							Analyst: DBD	
Antimony	ND	0.0014	0.010		mg/L	10	5/19/2015 4:42:54 PM	R26294
Arsenic	0.011	0.0013	0.020	*J	mg/L	20	5/22/2015 6:15:34 PM	R26392
Lead	0.0026	0.00026	0.010	J	mg/L	10	5/19/2015 4:42:54 PM	R26294
Selenium	0.020	0.0019	0.010		mg/L	10	5/19/2015 4:42:54 PM	R26294

EPA 200.8: METALS

Analyst: **TES**

Refer to the QC Summary report and 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 1505708

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-15-GW

Project: SWMU 10

Collection Date: 5/14/2015 4:00:00 PM

Lab ID: 1505708-001

Matrix: AQUEOUS

Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: TES	
Antimony	ND	0.0022	0.0050		mg/L	5	5/26/2015 4:48:32 PM	19333
Arsenic	0.012	0.0015	0.0050	*	mg/L	5	5/21/2015 4:39:52 PM	19333
Lead	0.014	0.00024	0.0025		mg/L	5	5/21/2015 4:39:52 PM	19333
Selenium	0.019	0.00097	0.0050		mg/L	5	5/21/2015 4:39:52 PM	19333
EPA METHOD 245.1: MERCURY							Analyst: MED	
Mercury	ND	0.000059	0.00020		mg/L	1	5/29/2015 3:42:35 PM	19431
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	1.9	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Acenaphthylene	ND	1.9	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Aniline	ND	1.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Anthracene	ND	1.6	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Azobenzene	ND	2.0	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Benzoic acid	ND	1.0	20		µg/L	1	5/19/2015 7:27:38 PM	19289
Benzyl alcohol	ND	1.2	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/19/2015 7:27:38 PM	19289
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Carbazole	ND	1.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/19/2015 7:27:38 PM	19289
4-Chloroaniline	ND	1.9	10		µg/L	1	5/19/2015 7:27:38 PM	19289
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/19/2015 7:27:38 PM	19289
2-Chlorophenol	ND	1.2	10		µg/L	1	5/19/2015 7:27:38 PM	19289
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Chrysene	ND	2.2	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Dibenzofuran	ND	1.9	10		µg/L	1	5/19/2015 7:27:38 PM	19289
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/19/2015 7:27:38 PM	19289
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/19/2015 7:27:38 PM	19289

Refer to the QC Summary report and 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 1505708

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-15-GW

Project: SWMU 10

Collection Date: 5/14/2015 4:00:00 PM

Lab ID: 1505708-001

Matrix: AQUEOUS

Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/19/2015 7:27:38 PM	19289
3,3'-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Diethyl phthalate	ND	1.7	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/19/2015 7:27:38 PM	19289
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/19/2015 7:27:38 PM	19289
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/19/2015 7:27:38 PM	19289
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/19/2015 7:27:38 PM	19289
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/19/2015 7:27:38 PM	19289
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/19/2015 7:27:38 PM	19289
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Fluoranthene	ND	1.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Fluorene	ND	1.7	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Hexachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Hexachloroethane	ND	1.6	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Isophorone	ND	2.0	10		µg/L	1	5/19/2015 7:27:38 PM	19289
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/19/2015 7:27:38 PM	19289
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/19/2015 7:27:38 PM	19289
2-Methylphenol	ND	1.2	10		µg/L	1	5/19/2015 7:27:38 PM	19289
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/19/2015 7:27:38 PM	19289
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/19/2015 7:27:38 PM	19289
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Naphthalene	ND	1.8	10		µg/L	1	5/19/2015 7:27:38 PM	19289
2-Nitroaniline	ND	1.8	10		µg/L	1	5/19/2015 7:27:38 PM	19289
3-Nitroaniline	ND	1.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
4-Nitroaniline	ND	1.2	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Nitrobenzene	ND	1.5	10		µg/L	1	5/19/2015 7:27:38 PM	19289
2-Nitrophenol	ND	1.2	10		µg/L	1	5/19/2015 7:27:38 PM	19289
4-Nitrophenol	ND	1.4	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Pentachlorophenol	ND	1.1	20		µg/L	1	5/19/2015 7:27:38 PM	19289
Phenanthrene	ND	2.0	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Phenol	ND	1.1	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Pyrene	ND	2.3	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Pyridine	ND	1.7	10		µg/L	1	5/19/2015 7:27:38 PM	19289
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/19/2015 7:27:38 PM	19289
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/19/2015 7:27:38 PM	19289

Refer to the QC Summary report and 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 1505708

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-15-GW

Project: SWMU 10

Collection Date: 5/14/2015 4:00:00 PM

Lab ID: 1505708-001

Matrix: AQUEOUS

Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/19/2015 7:27:38 PM	19289
Surr: 2-Fluorophenol	59.1	0	14.9-111		%REC	1	5/19/2015 7:27:38 PM	19289
Surr: Phenol-d5	70.7	0	11.3-108		%REC	1	5/19/2015 7:27:38 PM	19289
Surr: 2,4,6-Tribromophenol	72.4	0	15.7-154		%REC	1	5/19/2015 7:27:38 PM	19289
Surr: Nitrobenzene-d5	105	0	47.8-106		%REC	1	5/19/2015 7:27:38 PM	19289
Surr: 2-Fluorobiphenyl	102	0	21.3-123		%REC	1	5/19/2015 7:27:38 PM	19289
Surr: 4-Terphenyl-d14	102	0	14.3-135		%REC	1	5/19/2015 7:27:38 PM	19289
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	0.51	0.13	2.0	J	µg/L	2	5/20/2015 7:39:53 PM	R26322
Toluene	ND	0.22	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Ethylbenzene	ND	0.20	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Methyl tert-butyl ether (MTBE)	150	0.35	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,2,4-Trimethylbenzene	ND	0.32	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,3,5-Trimethylbenzene	ND	0.25	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.35	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.27	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Naphthalene	ND	0.44	4.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1-Methylnaphthalene	ND	1.1	8.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
2-Methylnaphthalene	ND	1.2	8.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Acetone	9.7	1.9	20	J	µg/L	2	5/20/2015 7:39:53 PM	R26322
Bromobenzene	ND	0.22	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Bromodichloromethane	ND	0.18	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Bromoform	ND	0.32	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Bromomethane	ND	2.3	6.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
2-Butanone	2.9	0.73	20	J	µg/L	2	5/20/2015 7:39:53 PM	R26322
Carbon disulfide	ND	1.3	20		µg/L	2	5/20/2015 7:39:53 PM	R26322
Carbon Tetrachloride	ND	0.16	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Chlorobenzene	ND	0.19	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Chloroethane	ND	0.21	4.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Chloroform	ND	0.43	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Chloromethane	ND	0.35	6.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
2-Chlorotoluene	ND	0.16	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
4-Chlorotoluene	ND	0.30	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
cis-1,2-DCE	ND	0.16	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
cis-1,3-Dichloropropene	ND	0.27	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.27	4.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Dibromochloromethane	ND	0.19	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Dibromomethane	ND	0.47	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,2-Dichlorobenzene	ND	0.24	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322

Refer to the QC Summary report and 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 1505708

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-15-GW

Project: SWMU 10

Collection Date: 5/14/2015 4:00:00 PM

Lab ID: 1505708-001

Matrix: AQUEOUS

Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
1,3-Dichlorobenzene	ND	0.19	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,4-Dichlorobenzene	ND	0.33	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Dichlorodifluoromethane	ND	1.4	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,1-Dichloroethane	ND	0.80	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,1-Dichloroethene	ND	0.20	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,2-Dichloropropane	ND	0.30	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,3-Dichloropropane	ND	0.34	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
2,2-Dichloropropane	ND	0.30	4.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,1-Dichloropropene	ND	0.23	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Hexachlorobutadiene	ND	0.50	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
2-Hexanone	ND	0.95	20		µg/L	2	5/20/2015 7:39:53 PM	R26322
Isopropylbenzene	ND	0.30	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
4-Isopropyltoluene	ND	0.38	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
4-Methyl-2-pentanone	ND	0.51	20		µg/L	2	5/20/2015 7:39:53 PM	R26322
Methylene Chloride	ND	0.72	6.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
n-Butylbenzene	ND	0.49	6.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
n-Propylbenzene	ND	0.33	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
sec-Butylbenzene	ND	0.46	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Styrene	ND	0.21	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
tert-Butylbenzene	ND	0.26	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.22	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.36	4.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Tetrachloroethene (PCE)	ND	0.32	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
trans-1,2-DCE	ND	0.19	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
trans-1,3-Dichloropropene	ND	0.23	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,2,3-Trichlorobenzene	ND	0.53	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,2,4-Trichlorobenzene	ND	0.57	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,1,1-Trichloroethane	ND	0.16	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,1,2-Trichloroethane	ND	0.16	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Trichloroethene (TCE)	ND	0.33	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Trichlorofluoromethane	ND	0.25	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
1,2,3-Trichloropropane	ND	0.32	4.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Vinyl chloride	ND	0.25	2.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Xylenes, Total	ND	0.56	3.0		µg/L	2	5/20/2015 7:39:53 PM	R26322
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%REC	2	5/20/2015 7:39:53 PM	R26322
Surr: 4-Bromofluorobenzene	91.4	0	70-130		%REC	2	5/20/2015 7:39:53 PM	R26322
Surr: Dibromofluoromethane	115	0	70-130		%REC	2	5/20/2015 7:39:53 PM	R26322
Surr: Toluene-d8	102	0	70-130		%REC	2	5/20/2015 7:39:53 PM	R26322

EPA METHOD 8015D: GASOLINE RANGE

Analyst: cadg

Refer to the QC Summary report and 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 **1505708**

Date Reported: **11/4/2015**

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-15-GW

Project: SWMU 10

Collection Date: 5/14/2015 4:00:00 PM

Lab ID: 1505708-001

Matrix: AQUEOUS

Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	0.78	0.080	0.10		mg/L	2	5/20/2015 7:39:53 PM	R26322
Surr: BFB	97.8	0	70-130		%REC	2	5/20/2015 7:39:53 PM	R26322

Refer to the QC Summary report and 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 1505708

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: TRIP BLANK

Project: SWMU 10

Collection Date:

Lab ID: 1505708-002

Matrix: TRIP BLANK

Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	ND	0.065	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Toluene	ND	0.11	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Naphthalene	ND	0.22	2.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Acetone	ND	0.94	10		µg/L	1	5/20/2015 8:08:38 PM	R26322
Bromobenzene	ND	0.11	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Bromoform	ND	0.16	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Bromomethane	ND	1.2	3.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
2-Butanone	ND	0.36	10		µg/L	1	5/20/2015 8:08:38 PM	R26322
Carbon disulfide	ND	0.67	10		µg/L	1	5/20/2015 8:08:38 PM	R26322
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Chloroethane	ND	0.10	2.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Chloroform	ND	0.21	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Chloromethane	ND	0.17	3.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Dibromomethane	ND	0.23	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/20/2015 8:08:38 PM	R26322

Refer to the QC Summary report and 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 1505708

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: TRIP BLANK

Project: SWMU 10

Collection Date:

Lab ID: 1505708-002

Matrix: TRIP BLANK

Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
2-Hexanone	ND	0.48	10		µg/L	1	5/20/2015 8:08:38 PM	R26322
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/20/2015 8:08:38 PM	R26322
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Styrene	ND	0.11	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/20/2015 8:08:38 PM	R26322
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/20/2015 8:08:38 PM	R26322
Surr: 1,2-Dichloroethane-d4	106	0	70-130		%REC	1	5/20/2015 8:08:38 PM	R26322
Surr: 4-Bromofluorobenzene	101	0	70-130		%REC	1	5/20/2015 8:08:38 PM	R26322
Surr: Dibromofluoromethane	106	0	70-130		%REC	1	5/20/2015 8:08:38 PM	R26322
Surr: Toluene-d8	97.7	0	70-130		%REC	1	5/20/2015 8:08:38 PM	R26322
EPA METHOD 8015D: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.040	0.050		mg/L	1	5/20/2015 8:08:38 PM	R26322
Surr: BFB	99.0	0	70-130		%REC	1	5/20/2015 8:08:38 PM	R26322

Refer to the QC Summary report and 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

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 19, 2015
Description :
Sample ID : 1505708-001H SWMU 10-15-GW
Collected By :
Collection Date : 05/14/15 16:00

ESC Sample # : L765932-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	0.055	0.0050	mg/l	9012B	05/28/15	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: 06/02/15 11:33 Printed: 06/02/15 11:33



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Tax I.D. 62-0814289
Est. 1970

REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 19, 2015
Description :
Sample ID : 1505708-001I SWMU 10-15-GW
Collected By :
Collection Date : 05/14/15 16:00

ESC Sample # : L765932-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	BDL	0.00050	mg/l	7199	05/26/15	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: 06/02/15 11:33 Printed: 06/02/15 11:33
L765932-02 (CR6ICFFP) - pH=7.69



YOUR LAB OF CHOICE

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765932

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

June 02, 2015

Analyte	Result	Laboratory Blank Units	% Rec	Limit	Batch	Date Analyzed
Hexavalent Chromium	< .0005	mg/l			WG791515	05/26/15 20:02
Cyanide	< .005	mg/l			WG791484	05/28/15 00:29

Analyte	Units	Result	Duplicate Duplicate	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L766104-01	WG791515
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L766399-01	WG791515
Cyanide	mg/l	0.0	0.0	0.0	20	L766164-02	WG791484
Cyanide	mg/l	0.0	0.0	0.0	20	L766258-01	WG791484

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Hexavalent Chromium	mg/l	.002	0.00218	109.	90-110	WG791515
Cyanide	mg/l	.1	0.105	105.	90-110	WG791484

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Hexavalent Chromium	mg/l	0.00216	0.00218	108.	90-110	0.922	20	WG791515
Cyanide	mg/l	0.103	0.105	103.	90-110	1.92	20	WG791484

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0528	0.0	.05	100.	90-110	L766097-01	WG791515
Cyanide	mg/l	0.199	0.0	.2	100.	90-110	L766168-02	WG791484

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0524	0.0528	105.	90-110	0.760	20	L766097-01	WG791515
Cyanide	mg/l	0.172	0.199	86.0*	90-110	14.6	20	L766168-02	WG791484

Batch number / Run number / Sample number cross reference

WG791515: R3039614: L765932-02
WG791484: R3039673: L765932-01

* * 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#: 1505708

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19333	SampType:	MBLK	TestCode:	EPA Method 200.7: Metals					
Client ID:	PBW	Batch ID:	19333	RunNo:	26358					
Prep Date:	5/20/2015	Analysis Date:	5/21/2015	SeqNo:	783226	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	0.0078	0.020								J
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS-19333	SampType:	LCS	TestCode:	EPA Method 200.7: Metals					
Client ID:	LCSW	Batch ID:	19333	RunNo:	26358					
Prep Date:	5/20/2015	Analysis Date:	5/21/2015	SeqNo:	783227	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	97.5	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.9	85	115			
Chromium	0.49	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.48	0.0060	0.5000	0	95.1	85	115			
Iron	0.48	0.020	0.5000	0	96.5	85	115			
Manganese	0.48	0.0020	0.5000	0	95.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.3	85	115			
Silver	0.10	0.0050	0.1000	0	104	85	115			
Vanadium	0.51	0.050	0.5000	0	101	85	115			
Zinc	0.48	0.010	0.5000	0	96.2	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#: 1505708

04-Nov-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:	R26242		RunNo:	26242			
Prep Date:			Analysis Date:	5/15/2015		SeqNo:	779016	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0011	0.0020								J
Beryllium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
Iron	ND	0.020								
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:	R26242		RunNo:	26242			
Prep Date:			Analysis Date:	5/15/2015		SeqNo:	779017	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	95.6	85	115			
Beryllium	0.49	0.0020	0.5000	0	98.3	85	115			
Chromium	0.48	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.5	85	115			
Iron	0.51	0.020	0.5000	0	101	85	115			
Nickel	0.48	0.010	0.5000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.4	85	115			
Zinc	0.47	0.010	0.5000	0	94.4	85	115			

Sample ID	MB		SampType:	MBLK		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	PBW		Batch ID:	R26291		RunNo:	26291			
Prep Date:			Analysis Date:	5/19/2015		SeqNo:	780950	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Manganese	ND	0.0020								
Silver	0.0014	0.0050								J

Sample ID	LCS		SampType:	LCS		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	LCSW		Batch ID:	R26291		RunNo:	26291			
Prep Date:			Analysis Date:	5/19/2015		SeqNo:	780951	Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.49	0.0020	0.5000	0	97.7	85	115			
Manganese	0.47	0.0020	0.5000	0	93.4	85	115			
Silver	0.097	0.0050	0.1000	0	96.8	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#: 1505708

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

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			
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			
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								
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
Antimony	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	MB-19333		SampType: MBLK		TestCode: EPA 200.8: Metals					
Client ID:	PBW		Batch ID: 19333		RunNo: 26348					
Prep Date:	5/20/2015		Analysis Date: 5/21/2015		SeqNo: 782930		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#: 1505708

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	LLLCS-19333			SampType:	LCSLL		TestCode:	EPA 200.8: Metals			
Client ID:	BatchQC			Batch ID:	19333		RunNo:	26348			
Prep Date:	5/20/2015			Analysis Date:	5/21/2015		SeqNo:	782932		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	92.4	85	115				
Lead	0.013	0.00050	0.01250	0	102	85	115				
Selenium	0.022	0.0010	0.02500	0	88.9	85	115				

Sample ID	1505708-001FLLMS			SampType:	MS		TestCode:	EPA 200.8: Metals		
Client ID:	SWMU 10-15-GW		Batch ID:	19333		RunNo:	26348			
Prep Date:	5/20/2015		Analysis Date:	5/21/2015		SeqNo:	782992		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.033	0.0050	0.02500	0.01167	86.1	70	130			
Lead	0.028	0.0025	0.01250	0.01383	114	70	130			
Selenium	0.041	0.0050	0.02500	0.01931	86.7	70	130			

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Metals					
Client ID:	LCSW		Batch ID: R26392		RunNo: 26392					
Prep Date:			Analysis Date: 5/22/2015		SeqNo: 784378		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.027	0.0010	0.02500	0	108	85	115			

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Metals					
Client ID:	LCSW		Batch ID: R26392		RunNo: 26392					
Prep Date:			Analysis Date: 5/22/2015		SeqNo: 784379		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.027	0.0010	0.02500	0	108	85	115			

Sample ID	MB	SampType: MBLK		TestCode: EPA 200.8: Metals						
Client ID:	PBW	Batch ID: R26392		RunNo: 26392						
Prep Date:		Analysis Date: 5/22/2015		SeqNo: 784380		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Metals					
Client ID:	PBW	Batch ID: R26392			RunNo: 26392					
Prep Date:		Analysis Date: 5/22/2015			SeqNo: 784381		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	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#: 1505708

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	1505708-001FLLMS	SampType:	MSLL	TestCode:	EPA 200.8: Metals					
Client ID:	SWMU 10-15-GW	Batch ID:	19333	RunNo:	26412					
Prep Date:	5/20/2015	Analysis Date:	5/26/2015	SeqNo:	784803	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.011	0.0050	0.02500	0	43.5	70	130			S

Sample ID	LL LCS-19333	SampType:	LCSLL	TestCode:	EPA 200.8: Metals					
Client ID:	BatchQC	Batch ID:	19333	RunNo:	26606					
Prep Date:	5/20/2015	Analysis Date:	6/3/2015	SeqNo:	792066	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.028	0.0010	0.02500	0	114	85	115			

Sample ID	MB-19333	SampType:	MBLK	TestCode:	EPA 200.8: Metals					
Client ID:	PBW	Batch ID:	19333	RunNo:	26606					
Prep Date:	5/20/2015	Analysis Date:	6/3/2015	SeqNo:	792073	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.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the 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#: 1505708

04-Nov-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			
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			
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								
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								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	MB	SampType:	MBLK		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	PBW	Batch ID:	R26392		RunNo:	26392				
Prep Date:		Analysis Date:	5/22/2015		SeqNo:	784403	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	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#: 1505708

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: R26392		RunNo: 26392					
Prep Date:			Analysis Date: 5/22/2015		SeqNo: 784404		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.027	0.0010	0.02500	0	108	85	115			

Sample ID	MB	SampType:	MBLK		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	PBW	Batch ID:	R26392		RunNo:	26392				
Prep Date:		Analysis Date:	5/22/2015		SeqNo:	784408	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Sample ID	LCS		SampType:	LCS		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	LCSW		Batch ID:	R26392		RunNo:	26392				
Prep Date:			Analysis Date:	5/22/2015		SeqNo:	784409	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Arsenic	0.027	0.0010	0.02500	0	108	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#: 1505708

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19431		SampType:	MBLK		TestCode:	EPA Method 245.1: Mercury				
Client ID:	PBW		Batch ID:	19431		RunNo:	26501				
Prep Date:	5/28/2015		Analysis Date:	5/29/2015		SeqNo:	787555		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.00020									

Sample ID	LCS-19431		SampType: LCS		TestCode: EPA Method 245.1: Mercury					
Client ID:	LCSW		Batch ID: 19431		RunNo: 26501					
Prep Date:	5/28/2015		Analysis Date: 5/29/2015		SeqNo: 787556		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	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#: 1505708

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB		SampType: MBLK		TestCode: EPA Method 300.0: Anions					
Client ID:	PBW		Batch ID: R26247		RunNo: 26247					
Prep Date:			Analysis Date: 5/15/2015		SeqNo: 779359		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.500								

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW		Batch ID: R26247		RunNo: 26247					
Prep Date:			Analysis Date: 5/15/2015		SeqNo: 779360		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	10.2	0.500	10.00	0	102	90	110			

Sample ID	MB	SampType:	MBLK		TestCode:	EPA Method 300.0: Anions				
Client ID:	PBW	Batch ID:	R26328		RunNo:	26328				
Prep Date:		Analysis Date:	5/20/2015		SeqNo:	782445	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								

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW		Batch ID: R26328		RunNo: 26328					
Prep Date:			Analysis Date: 5/20/2015		SeqNo: 782446		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	97.3	90	110			
Chloride	4.7	0.50	5.000	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#: 1505708

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19246		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW		Batch ID: 19246		RunNo: 26216					
Prep Date:	5/15/2015		Analysis Date: 5/15/2015		SeqNo: 778433		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	1.4		1.000		137	76.5	150			

Sample ID	LCS-19246		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 19246		RunNo: 26216					
Prep Date:	5/15/2015		Analysis Date: 5/15/2015		SeqNo: 778434		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	117	60.1	156			
Surr: DNOP	0.62		0.5000		124	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#: 1505708

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782101	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	0.20	1.0								J
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	0.35	1.0								J
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#: 1505708

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782101	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	0.43	1.0								J
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	12		10.00		116	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.4		10.00		93.8	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782103	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.5	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	20	1.0	20.00	0	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#: 1505708

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R26322			RunNo: 26322					
Prep Date:		Analysis Date: 5/20/2015			SeqNo: 782103		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	21	1.0	20.00	0	107	75.6	144			
Trichloroethene (TCE)	17	1.0	20.00	0	86.6	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.7	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.1	70	130			
Surr: Toluene-d8	10		10.00		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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505708

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19289	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	19289	RunNo:	26300					
Prep Date:	5/19/2015	Analysis Date:	5/19/2015	SeqNo:	781333	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#: 1505708

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19289	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	19289	RunNo:	26300					
Prep Date:	5/19/2015	Analysis Date:	5/19/2015	SeqNo:	781333	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		76.8	14.9	111			
Surr: Phenol-d5	160		200.0		80.8	11.3	108			
Surr: 2,4,6-Tribromophenol	160		200.0		80.2	15.7	154			
Surr: Nitrobenzene-d5	76		100.0		76.1	47.8	106			
Surr: 2-Fluorobiphenyl	78		100.0		78.4	21.3	123			
Surr: 4-Terphenyl-d14	110		100.0		105	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#: 1505708

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	lcs-19289		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSW		Batch ID: 19289		RunNo: 26300					
Prep Date:	5/19/2015		Analysis Date: 5/19/2015		SeqNo: 781334		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	76	10	100.0	0	75.9	47.8	99.7			
4-Chloro-3-methylphenol	160	10	200.0	0	79.9	58.1	103			
2-Chlorophenol	140	10	200.0	0	70.4	49.5	96.8			
1,4-Dichlorobenzene	73	10	100.0	0	72.6	40.4	89.4			
2,4-Dinitrotoluene	70	10	100.0	0	69.6	38.6	91.3			
N-Nitrosodi-n-propylamine	80	10	100.0	0	80.1	53.9	95.6			
4-Nitrophenol	140	10	200.0	0	71.9	26.4	108			
Pentachlorophenol	120	20	200.0	0	61.8	36.5	86.6			
Phenol	160	10	200.0	0	77.8	29.3	108			
Pyrene	74	10	100.0	0	73.9	45.7	100			
1,2,4-Trichlorobenzene	81	10	100.0	0	80.7	39.3	94.5			
Surr: 2-Fluorophenol	150		200.0		74.2	14.9	111			
Surr: Phenol-d5	170		200.0		83.5	11.3	108			
Surr: 2,4,6-Tribromophenol	170		200.0		86.1	15.7	154			
Surr: Nitrobenzene-d5	82		100.0		81.8	47.8	106			
Surr: 2-Fluorobiphenyl	86		100.0		86.4	21.3	123			
Surr: 4-Terphenyl-d14	79		100.0		78.7	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#: 1505708

04-Nov-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:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782177	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	10		10.00		102	70	130			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782181	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	91.6	80.6	122			
Surr: BFB	9.8		10.00		97.7	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

Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1505708

RcptNo: 1

Received by/date: Ag 05/15/15

Logged By: Ashley Gallegos 5/15/2015 10:03:00 AM Ag

Completed By: Ashley Gallegos 5/15/2015 10:16:08 AM Ag

Reviewed By: Ag 05/15/15

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: 2 1
(≤2 or ≥12 unless noted)
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	2.8	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

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 04, 2015

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

RE: SWMU 10

OrderNo.: 1505709

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/15/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued June 26, 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 1505709

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 DUP01GW

Project: SWMU 10

Collection Date: 5/14/2015

Lab ID: 1505709-001

Matrix: AQUEOUS

Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH	
Diesel Range Organics (DRO)	1.1	0.91	1.0		mg/L	1	5/15/2015 9:31:35 PM	19246
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/15/2015 9:31:35 PM	19246
Surr: DNOP	125	0	76.5-150		%REC	1	5/15/2015 9:31:35 PM	19246
EPA METHOD 300.0: ANIONS							Analyst: LGT	
Fluoride	0.55	0.15	0.50		mg/L	5	5/21/2015 12:44:04 AM	R26328
Chloride	2400	27	100		mg/L	200	5/21/2015 12:56:28 AM	R26328
Sulfate	470	2.3	10		mg/L	20	5/15/2015 6:01:26 PM	R26247
EPA METHOD 200.7: DISSOLVED METALS							Analyst: JLF	
Barium	0.22	0.00095	0.0020		mg/L	1	5/15/2015 5:37:44 PM	R26242
Beryllium	0.00033	0.00031	0.0020	J	mg/L	1	5/15/2015 5:37:44 PM	R26242
Cadmium	ND	0.00097	0.0020		mg/L	1	5/19/2015 5:06:41 PM	R26291
Chromium	0.0094	0.0018	0.0060		mg/L	1	5/15/2015 5:37:44 PM	R26242
Cobalt	0.023	0.0013	0.0060		mg/L	1	5/15/2015 5:37:44 PM	R26242
Iron	2.2	0.036	0.10	*	mg/L	5	5/19/2015 5:10:46 PM	R26291
Manganese	2.5	0.0013	0.010	*	mg/L	5	5/19/2015 5:10:46 PM	R26291
Nickel	0.66	0.0021	0.010	*	mg/L	1	5/15/2015 5:37:44 PM	R26242
Silver	ND	0.0012	0.0050		mg/L	1	5/19/2015 5:06:41 PM	R26291
Vanadium	0.0076	0.0015	0.050	J	mg/L	1	5/15/2015 5:37:44 PM	R26242
Zinc	0.036	0.0028	0.010		mg/L	1	5/15/2015 5:37:44 PM	R26242
EPA METHOD 200.7: METALS							Analyst: ELS	
Barium	0.31	0.00095	0.0020		mg/L	1	5/21/2015 4:32:36 PM	19333
Beryllium	0.0014	0.00031	0.0020	J	mg/L	1	5/21/2015 4:32:36 PM	19333
Cadmium	ND	0.00097	0.0020		mg/L	1	5/21/2015 4:32:36 PM	19333
Chromium	0.0059	0.0022	0.0060	J	mg/L	1	5/21/2015 4:32:36 PM	19333
Cobalt	0.025	0.0013	0.0060		mg/L	1	5/21/2015 4:32:36 PM	19333
Iron	7.4	0.15	0.40	*	mg/L	20	6/11/2015 10:56:49 AM	19333
Manganese	3.0	0.0076	0.010	*	mg/L	5	5/21/2015 4:34:26 PM	19333
Nickel	0.65	0.0023	0.010	*	mg/L	1	5/21/2015 4:32:36 PM	19333
Silver	ND	0.0021	0.0050		mg/L	1	5/21/2015 4:32:36 PM	19333
Vanadium	0.017	0.0015	0.050	J	mg/L	1	5/21/2015 4:32:36 PM	19333
Zinc	0.034	0.0036	0.010		mg/L	1	5/21/2015 4:32:36 PM	19333
EPA 200.8: DISSOLVED METALS							Analyst: DBD	
Antimony	ND	0.0014	0.010		mg/L	10	5/19/2015 4:47:49 PM	R26294
Arsenic	0.011	0.0013	0.020	J*	mg/L	20	5/22/2015 6:18:37 PM	R26392
Lead	0.0039	0.00026	0.010	J	mg/L	10	5/19/2015 4:47:49 PM	R26294
Selenium	0.023	0.0019	0.010		mg/L	10	5/19/2015 4:47:49 PM	R26294

EPA 200.8: METALS

Analyst: **TES**

Refer to the QC Summary report and 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 1505709

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 DUP01GW

Project: SWMU 10

Collection Date: 5/14/2015

Lab ID: 1505709-001

Matrix: AQUEOUS

Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: TES	
Antimony	ND	0.0022	0.0050		mg/L	5	5/26/2015 5:06:47 PM	19333
Arsenic	0.012	0.0015	0.0050	*	mg/L	5	5/21/2015 4:50:46 PM	19333
Lead	0.012	0.00094	0.010		mg/L	20	5/21/2015 4:53:29 PM	19333
Selenium	0.022	0.00097	0.0050		mg/L	5	5/21/2015 4:50:46 PM	19333
EPA METHOD 245.1: MERCURY							Analyst: MED	
Mercury	ND	0.000059	0.00020		mg/L	1	5/29/2015 3:44:33 PM	19431
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	1.9	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Acenaphthylene	ND	1.9	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Aniline	ND	1.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Anthracene	ND	1.6	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Azobenzene	ND	2.0	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Benzoic acid	ND	1.0	20		µg/L	1	5/19/2015 7:55:52 PM	19289
Benzyl alcohol	ND	1.2	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/19/2015 7:55:52 PM	19289
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Carbazole	ND	1.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/19/2015 7:55:52 PM	19289
4-Chloroaniline	ND	1.9	10		µg/L	1	5/19/2015 7:55:52 PM	19289
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/19/2015 7:55:52 PM	19289
2-Chlorophenol	ND	1.2	10		µg/L	1	5/19/2015 7:55:52 PM	19289
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Chrysene	ND	2.2	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Dibenzofuran	ND	1.9	10		µg/L	1	5/19/2015 7:55:52 PM	19289
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/19/2015 7:55:52 PM	19289
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/19/2015 7:55:52 PM	19289

Refer to the QC Summary report and 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 1505709

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 DUP01GW

Project: SWMU 10

Collection Date: 5/14/2015

Lab ID: 1505709-001

Matrix: AQUEOUS

Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/19/2015 7:55:52 PM	19289
3,3'-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Diethyl phthalate	ND	1.7	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/19/2015 7:55:52 PM	19289
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/19/2015 7:55:52 PM	19289
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/19/2015 7:55:52 PM	19289
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/19/2015 7:55:52 PM	19289
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/19/2015 7:55:52 PM	19289
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/19/2015 7:55:52 PM	19289
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Fluoranthene	ND	1.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Fluorene	ND	1.7	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Hexachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Hexachloroethane	ND	1.6	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Isophorone	ND	2.0	10		µg/L	1	5/19/2015 7:55:52 PM	19289
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/19/2015 7:55:52 PM	19289
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/19/2015 7:55:52 PM	19289
2-Methylphenol	ND	1.2	10		µg/L	1	5/19/2015 7:55:52 PM	19289
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/19/2015 7:55:52 PM	19289
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/19/2015 7:55:52 PM	19289
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Naphthalene	ND	1.8	10		µg/L	1	5/19/2015 7:55:52 PM	19289
2-Nitroaniline	ND	1.8	10		µg/L	1	5/19/2015 7:55:52 PM	19289
3-Nitroaniline	ND	1.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
4-Nitroaniline	ND	1.2	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Nitrobenzene	ND	1.5	10		µg/L	1	5/19/2015 7:55:52 PM	19289
2-Nitrophenol	ND	1.2	10		µg/L	1	5/19/2015 7:55:52 PM	19289
4-Nitrophenol	ND	1.4	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Pentachlorophenol	ND	1.1	20		µg/L	1	5/19/2015 7:55:52 PM	19289
Phenanthrene	ND	2.0	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Phenol	ND	1.1	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Pyrene	ND	2.3	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Pyridine	ND	1.7	10		µg/L	1	5/19/2015 7:55:52 PM	19289
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/19/2015 7:55:52 PM	19289
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/19/2015 7:55:52 PM	19289

Refer to the QC Summary report and 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 1505709

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 DUP01GW

Project: SWMU 10

Collection Date: 5/14/2015

Lab ID: 1505709-001

Matrix: AQUEOUS

Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/19/2015 7:55:52 PM	19289
Surr: 2-Fluorophenol	18.1	0	14.9-111		%REC	1	5/19/2015 7:55:52 PM	19289
Surr: Phenol-d5	27.8	0	11.3-108		%REC	1	5/19/2015 7:55:52 PM	19289
Surr: 2,4,6-Tribromophenol	31.3	0	15.7-154		%REC	1	5/19/2015 7:55:52 PM	19289
Surr: Nitrobenzene-d5	110	0	47.8-106	S	%REC	1	5/19/2015 7:55:52 PM	19289
Surr: 2-Fluorobiphenyl	112	0	21.3-123		%REC	1	5/19/2015 7:55:52 PM	19289
Surr: 4-Terphenyl-d14	96.8	0	14.3-135		%REC	1	5/19/2015 7:55:52 PM	19289
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	0.40	0.065	1.0	J	µg/L	1	5/20/2015 8:37:19 PM	R26322
Toluene	ND	0.11	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Methyl tert-butyl ether (MTBE)	150	0.17	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Naphthalene	ND	0.22	2.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Acetone	16	0.94	10		µg/L	1	5/20/2015 8:37:19 PM	R26322
Bromobenzene	ND	0.11	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Bromoform	ND	0.16	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Bromomethane	ND	1.2	3.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
2-Butanone	2.9	0.36	10	J	µg/L	1	5/20/2015 8:37:19 PM	R26322
Carbon disulfide	ND	0.67	10		µg/L	1	5/20/2015 8:37:19 PM	R26322
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Chloroethane	ND	0.10	2.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Chloroform	ND	0.21	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Chloromethane	ND	0.17	3.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Dibromomethane	ND	0.23	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322

Refer to the QC Summary report and 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 1505709

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 DUP01GW

Project: SWMU 10

Collection Date: 5/14/2015

Lab ID: 1505709-001

Matrix: AQUEOUS

Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
2-Hexanone	ND	0.48	10		µg/L	1	5/20/2015 8:37:19 PM	R26322
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/20/2015 8:37:19 PM	R26322
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Styrene	ND	0.11	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/20/2015 8:37:19 PM	R26322
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/20/2015 8:37:19 PM	R26322
Surr: 1,2-Dichloroethane-d4	102	0	70-130		%REC	1	5/20/2015 8:37:19 PM	R26322
Surr: 4-Bromofluorobenzene	88.0	0	70-130		%REC	1	5/20/2015 8:37:19 PM	R26322
Surr: Dibromofluoromethane	136	0	70-130	S	%REC	1	5/20/2015 8:37:19 PM	R26322
Surr: Toluene-d8	92.4	0	70-130		%REC	1	5/20/2015 8:37:19 PM	R26322

EPA METHOD 8015D: GASOLINE RANGE

Analyst: cadg

Refer to the QC Summary report and 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 **1505709**

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10 DUP01GW

Project: SWMU 10

Collection Date: 5/14/2015

Lab ID: 1505709-001

Matrix: AQUEOUS

Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	0.73	0.040	0.050		mg/L	1	5/20/2015 8:37:19 PM	R26322
Surr: BFB	97.7	0	70-130		%REC	1	5/20/2015 8:37:19 PM	R26322

Refer to the QC Summary report and 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 1505709

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: TRIP BLANK

Project: SWMU 10

Collection Date:

Lab ID: 1505709-002

Matrix: TRIP BLANK

Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	ND	0.065	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Toluene	ND	0.11	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Methyl tert-butyl ether (MTBE)	ND	0.17	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,2,4-Trimethylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,2-Dichloroethane (EDC)	ND	0.18	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Naphthalene	ND	0.22	2.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Acetone	ND	0.94	10		µg/L	1	5/20/2015 9:05:59 PM	R26322
Bromobenzene	ND	0.11	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Bromoform	ND	0.16	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Bromomethane	ND	1.2	3.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
2-Butanone	ND	0.36	10		µg/L	1	5/20/2015 9:05:59 PM	R26322
Carbon disulfide	ND	0.67	10		µg/L	1	5/20/2015 9:05:59 PM	R26322
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Chloroethane	ND	0.10	2.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Chloroform	ND	0.21	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Chloromethane	ND	0.17	3.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
cis-1,2-DCE	ND	0.081	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Dibromomethane	ND	0.23	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,1-Dichloroethane	ND	0.40	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,1-Dichloroethene	ND	0.099	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/20/2015 9:05:59 PM	R26322

Refer to the QC Summary report and 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 1505709

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: TRIP BLANK

Project: SWMU 10

Collection Date:

Lab ID: 1505709-002

Matrix: TRIP BLANK

Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
2-Hexanone	ND	0.48	10		µg/L	1	5/20/2015 9:05:59 PM	R26322
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/20/2015 9:05:59 PM	R26322
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Styrene	ND	0.11	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Trichloroethene (TCE)	ND	0.16	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Vinyl chloride	ND	0.13	1.0		µg/L	1	5/20/2015 9:05:59 PM	R26322
Xylenes, Total	ND	0.28	1.5		µg/L	1	5/20/2015 9:05:59 PM	R26322
Surr: 1,2-Dichloroethane-d4	103	0	70-130		%REC	1	5/20/2015 9:05:59 PM	R26322
Surr: 4-Bromofluorobenzene	106	0	70-130		%REC	1	5/20/2015 9:05:59 PM	R26322
Surr: Dibromofluoromethane	97.9	0	70-130		%REC	1	5/20/2015 9:05:59 PM	R26322
Surr: Toluene-d8	96.4	0	70-130		%REC	1	5/20/2015 9:05:59 PM	R26322
EPA METHOD 8015D: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.040	0.050		mg/L	1	5/20/2015 9:05:59 PM	R26322
Surr: BFB	99.8	0	70-130		%REC	1	5/20/2015 9:05:59 PM	R26322

Refer to the QC Summary report and 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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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 19, 2015
Description :
Sample ID : 1505709-001H SWMU 10 DUP01GW
Collected By :
Collection Date : 05/14/15 00:00

ESC Sample # : L765930-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Cyanide	0.051	0.0050	mg/l	9012B	05/28/15	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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Est. 1970

REPORT OF ANALYSIS

June 02, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : May 19, 2015
Description :
Sample ID : 1505709-001I SWMU 10 DUP01GW
Collected By :
Collection Date : 05/14/15 00:00

ESC Sample # : L765930-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexavalent Chromium	0.00061	0.00050	mg/l	7199	05/26/15	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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YOUR LAB OF CHOICE

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L765930

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1-800-767-5859
Fax (615) 758-5859

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June 02, 2015

Analyte	Result	Laboratory Blank Units	% Rec	Limit	Batch	Date Analyzed
Hexavalent Chromium	< .0005	mg/l			WG791515	05/26/15 20:02
Cyanide	< .005	mg/l			WG791484	05/28/15 00:29

Analyte	Units	Result	Duplicate Duplicate	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L766104-01	WG791515
Hexavalent Chromium	mg/l	0.0	0.0	0.0	20	L766399-01	WG791515
Cyanide	mg/l	0.0	0.0	0.0	20	L766164-02	WG791484
Cyanide	mg/l	0.0	0.0	0.0	20	L766258-01	WG791484

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Hexavalent Chromium	mg/l	.002	0.00218	109.	90-110	WG791515
Cyanide	mg/l	.1	0.105	105.	90-110	WG791484

Analyte	Units	Result	Laboratory Control Sample Ref	Duplicate %Rec	Limit	RPD	Limit	Batch
Hexavalent Chromium	mg/l	0.00216	0.00218	108.	90-110	0.922	20	WG791515
Cyanide	mg/l	0.103	0.105	103.	90-110	1.92	20	WG791484

Analyte	Units	MS Res	Matrix Spike Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0528	0.0	.05	100.	90-110	L766097-01	WG791515
Cyanide	mg/l	0.199	0.0	.2	100.	90-110	L766168-02	WG791484

Analyte	Units	MSD	Matrix Spike Ref	Duplicate %Rec	Limit	RPD	Limit	Ref Samp	Batch
Hexavalent Chromium	mg/l	0.0524	0.0528	105.	90-110	0.760	20	L766097-01	WG791515
Cyanide	mg/l	0.172	0.199	86.0*	90-110	14.6	20	L766168-02	WG791484

Batch number /Run number / Sample number cross reference

WG791515: R3039614: L765930-02
WG791484: R3039673: L765930-01

* * 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#: 1505709

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19333	SampType:	MBLK	TestCode:	EPA Method 200.7: Metals					
Client ID:	PBW	Batch ID:	19333	RunNo:	26358					
Prep Date:	5/20/2015	Analysis Date:	5/21/2015	SeqNo:	783226	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	0.0078	0.020								J
Manganese	ND	0.0020								
Nickel	ND	0.010								
Silver	ND	0.0050								
Vanadium	ND	0.050								
Zinc	ND	0.010								

Sample ID	LCS-19333		SampType:	LCS		TestCode:	EPA Method 200.7: Metals				
Client ID:	LCSW		Batch ID:	19333		RunNo:	26358				
Prep Date:	5/20/2015		Analysis Date:	5/21/2015		SeqNo:	783227		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	0.49	0.0020	0.5000	0	97.5	85	115			
Beryllium	0.52	0.0020	0.5000	0	104	85	115			
Cadmium	0.50	0.0020	0.5000	0	99.9	85	115			
Chromium	0.49	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.48	0.0060	0.5000	0	95.1	85	115			
Iron	0.48	0.020	0.5000	0	96.5	85	115			
Manganese	0.48	0.0020	0.5000	0	95.3	85	115			
Nickel	0.47	0.010	0.5000	0	94.3	85	115			
Silver	0.10	0.0050	0.1000	0	104	85	115			
Vanadium	0.51	0.050	0.5000	0	101	85	115			
Zinc	0.48	0.010	0.5000	0	96.2	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#: 1505709

04-Nov-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:	R26242		RunNo:	26242			
Prep Date:			Analysis Date:	5/15/2015		SeqNo:	779016		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0011	0.0020								J
Beryllium	ND	0.0020								
Chromium	ND	0.0060								
Cobalt	ND	0.0060								
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:	R26242		RunNo:	26242			
Prep Date:			Analysis Date:	5/15/2015		SeqNo:	779017		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	95.6	85	115			
Beryllium	0.49	0.0020	0.5000	0	98.3	85	115			
Chromium	0.48	0.0060	0.5000	0	97.0	85	115			
Cobalt	0.50	0.0060	0.5000	0	99.5	85	115			
Nickel	0.48	0.010	0.5000	0	95.9	85	115			
Vanadium	0.49	0.050	0.5000	0	97.4	85	115			
Zinc	0.47	0.010	0.5000	0	94.4	85	115			

Sample ID	MB		SampType:	MBLK		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	PBW		Batch ID:	R26291		RunNo:	26291			
Prep Date:			Analysis Date:	5/19/2015		SeqNo:	780950		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Iron	ND	0.020								
Manganese	ND	0.0020								
Silver	0.0014	0.0050								J

Sample ID	LCS		SampType:	LCS		TestCode:	EPA Method 200.7: Dissolved Metals			
Client ID:	LCSW		Batch ID:	R26291		RunNo:	26291			
Prep Date:			Analysis Date:	5/19/2015		SeqNo:	780951		Units:	mg/L
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.49	0.0020	0.5000	0	97.7	85	115			
Iron	0.50	0.020	0.5000	0	100	85	115			
Manganese	0.47	0.0020	0.5000	0	93.4	85	115			
Silver	0.097	0.0050	0.1000	0	96.8	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#: 1505709

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

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			
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			
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								
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
Antimony	ND	0.0010								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	MB-19333		SampType:	MBLK		TestCode:	EPA 200.8: Metals				
Client ID:	PBW		Batch ID:	19333		RunNo:	26348				
Prep Date:	5/20/2015		Analysis Date:	5/21/2015		SeqNo:	782930		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#: 1505709

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID LL LCS-19333	SampType: LCSLL			TestCode: EPA 200.8: Metals						
Client ID: BatchQC	Batch ID: 19333			RunNo: 26348						
Prep Date: 5/20/2015	Analysis Date: 5/21/2015			SeqNo: 782932		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	92.4	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.022	0.0010	0.02500	0	88.9	85	115			

Sample ID LCS	SampType: LCS			TestCode: EPA 200.8: Metals						
Client ID: LCSW	Batch ID: R26392			RunNo: 26392						
Prep Date:	Analysis Date: 5/22/2015			SeqNo: 784378		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.027	0.0010	0.02500	0	108	85	115			

Sample ID LCS	SampType: LCS			TestCode: EPA 200.8: Metals						
Client ID: LCSW	Batch ID: R26392			RunNo: 26392						
Prep Date:	Analysis Date: 5/22/2015			SeqNo: 784379		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.027	0.0010	0.02500	0	108	85	115			

Sample ID MB	SampType: MBLK			TestCode: EPA 200.8: Metals						
Client ID: PBW	Batch ID: R26392			RunNo: 26392						
Prep Date:	Analysis Date: 5/22/2015			SeqNo: 784380		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Sample ID MB	SampType: MBLK			TestCode: EPA 200.8: Metals						
Client ID: PBW	Batch ID: R26392			RunNo: 26392						
Prep Date:	Analysis Date: 5/22/2015			SeqNo: 784381		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Sample ID LL LCS-19333	SampType: LCSLL			TestCode: EPA 200.8: Metals						
Client ID: BatchQC	Batch ID: 19333			RunNo: 26606						
Prep Date: 5/20/2015	Analysis Date: 6/3/2015			SeqNo: 792066		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.028	0.0010	0.02500	0	114	85	115			

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#: 1505709

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19333	SampType:	MBLK	TestCode:	EPA 200.8: Metals					
Client ID:	PBW	Batch ID:	19333	RunNo:	26606					
Prep Date:	5/20/2015	Analysis Date:	6/3/2015	SeqNo:	792073	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.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the 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#: 1505709

04-Nov-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			
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			
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								
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								
Lead	ND	0.00050								
Selenium	ND	0.0010								

Sample ID	MB		SampType: MBLK		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW		Batch ID: R26392		RunNo: 26392					
Prep Date:			Analysis Date: 5/22/2015		SeqNo: 784403		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	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#: 1505709

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS		SampType:	LCS		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	LCSW		Batch ID:	R26392		RunNo:	26392				
Prep Date:			Analysis Date:	5/22/2015		SeqNo:	784404	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Arsenic	0.027	0.0010	0.02500	0	108	85	115				

Sample ID	MB	SampType:	MBLK		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	PBW	Batch ID:	R26392		RunNo:	26392				
Prep Date:		Analysis Date:	5/22/2015		SeqNo:	784408	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.0010								

Sample ID	LCS		SampType:	LCS		TestCode:	EPA 200.8: Dissolved Metals				
Client ID:	LCSW		Batch ID:	R26392		RunNo:	26392				
Prep Date:			Analysis Date:	5/22/2015		SeqNo:	784409	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Arsenic	0.027	0.0010	0.02500	0	108	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#: 1505709

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19431		SampType:	MBLK		TestCode:	EPA Method 245.1: Mercury				
Client ID:	PBW		Batch ID:	19431		RunNo:	26501				
Prep Date:	5/28/2015		Analysis Date:	5/29/2015		SeqNo:	787555		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.00020									

Sample ID	LCS-19431		SampType: LCS		TestCode: EPA Method 245.1: Mercury					
Client ID:	LCSW		Batch ID: 19431		RunNo: 26501					
Prep Date:	5/28/2015		Analysis Date: 5/29/2015		SeqNo: 787556		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	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#: 1505709

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB		SampType: MBLK		TestCode: EPA Method 300.0: Anions					
Client ID:	PBW		Batch ID: R26247		RunNo: 26247					
Prep Date:			Analysis Date: 5/15/2015		SeqNo: 779359		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.500								

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW		Batch ID: R26247		RunNo: 26247					
Prep Date:			Analysis Date: 5/15/2015		SeqNo: 779360		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	10.2	0.500	10.00	0	102	90	110			

Sample ID	MB		SampType: MBLK		TestCode: EPA Method 300.0: Anions					
Client ID:	PBW		Batch ID: R26328		RunNo: 26328					
Prep Date:			Analysis Date: 5/20/2015		SeqNo: 782445		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								

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW		Batch ID: R26328		RunNo: 26328					
Prep Date:			Analysis Date: 5/20/2015		SeqNo: 782446		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	97.3	90	110			
Chloride	4.7	0.50	5.000	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#: 1505709

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19246	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range						
Client ID:	PBW	Batch ID: 19246		RunNo: 26216						
Prep Date:	5/15/2015	Analysis Date: 5/15/2015		SeqNo: 778433		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	1.4		1.000		137	76.5	150			

Sample ID	LCS-19246		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 19246		RunNo: 26216					
Prep Date:	5/15/2015		Analysis Date: 5/15/2015		SeqNo: 778434		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	117	60.1	156			
Surr: DNOP	0.62		0.5000		124	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#: 1505709

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782101	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	0.20	1.0								J
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	0.35	1.0								J
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#: 1505709

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782101	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	0.43	1.0								J
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	12		10.00		116	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.4		10.00		93.8	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782103	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.5	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	20	1.0	20.00	0	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#: 1505709

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R26322			RunNo: 26322					
Prep Date:		Analysis Date: 5/20/2015			SeqNo: 782103		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	21	1.0	20.00	0	107	75.6	144			
Trichloroethene (TCE)	17	1.0	20.00	0	86.6	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.7	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.1	70	130			
Surr: Toluene-d8	10		10.00		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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505709

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19289		SampType: MBLK		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	PBW		Batch ID: 19289		RunNo: 26300					
Prep Date:	5/19/2015		Analysis Date: 5/19/2015		SeqNo: 781333		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#: 1505709

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19289	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	19289	RunNo:	26300					
Prep Date:	5/19/2015	Analysis Date:	5/19/2015	SeqNo:	781333	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		76.8	14.9	111			
Surr: Phenol-d5	160		200.0		80.8	11.3	108			
Surr: 2,4,6-Tribromophenol	160		200.0		80.2	15.7	154			
Surr: Nitrobenzene-d5	76		100.0		76.1	47.8	106			
Surr: 2-Fluorobiphenyl	78		100.0		78.4	21.3	123			
Surr: 4-Terphenyl-d14	110		100.0		105	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#: 1505709

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	lcs-19289		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSW		Batch ID: 19289		RunNo: 26300					
Prep Date:	5/19/2015		Analysis Date: 5/19/2015		SeqNo: 781334		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	76	10	100.0	0	75.9	47.8	99.7			
4-Chloro-3-methylphenol	160	10	200.0	0	79.9	58.1	103			
2-Chlorophenol	140	10	200.0	0	70.4	49.5	96.8			
1,4-Dichlorobenzene	73	10	100.0	0	72.6	40.4	89.4			
2,4-Dinitrotoluene	70	10	100.0	0	69.6	38.6	91.3			
N-Nitrosodi-n-propylamine	80	10	100.0	0	80.1	53.9	95.6			
4-Nitrophenol	140	10	200.0	0	71.9	26.4	108			
Pentachlorophenol	120	20	200.0	0	61.8	36.5	86.6			
Phenol	160	10	200.0	0	77.8	29.3	108			
Pyrene	74	10	100.0	0	73.9	45.7	100			
1,2,4-Trichlorobenzene	81	10	100.0	0	80.7	39.3	94.5			
Surr: 2-Fluorophenol	150		200.0		74.2	14.9	111			
Surr: Phenol-d5	170		200.0		83.5	11.3	108			
Surr: 2,4,6-Tribromophenol	170		200.0		86.1	15.7	154			
Surr: Nitrobenzene-d5	82		100.0		81.8	47.8	106			
Surr: 2-Fluorobiphenyl	86		100.0		86.4	21.3	123			
Surr: 4-Terphenyl-d14	79		100.0		78.7	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#: 1505709

04-Nov-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:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782177	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	10		10.00		102	70	130			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782181	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	91.6	80.6	122			
Surr: BFB	9.8		10.00		97.7	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

Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1505709

RcptNo: 1

Received by/date:

Logged By: Ashley Gallegos

5/15/2015 10:03:00 AM

Completed By: Ashley Gallegos

5/15/2015 10:35:37 AM

Reviewed By:

05/15/15

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: 2
<2 or >12 unless noted
Adjusted: NO
Checked by: [Signature]

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	2.8	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.

GALLUP REFINERY

Mailing Address: 97 GIANT CROSSING RD

GALLUP NM 87301

Phone #: 505-722-0231

email or Fax#: CHERYL-JOHNSON@

WNR.COM

QA/QC Package:

☐ Standard ☒ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other

☒ EDD (Type) EXCEL

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

Project #:

SWMU 10

Project Manager:

CHERYL JOHNSON

Sampler: TRACY PAYNE

On Ice: ☒ Yes ☐ No

Sample Temperature: 8/8

Container Type and #

Preservative Type

HEAL No.

1505709

-001

40 ML

VOA-6

HCL

1L

DUPOIGW

AMBER-2

250 ML

AMBER-1

100 ML

PLASTIC-1

500 ML

PLASTIC-1

500 ML

PLASTIC-1

50 ML

PLASTIC-1

NH42504

40 ML

VOA-4

HCL

-002

Date Time Matrix Sample Request ID

5/4/15 11:15 WATER SWMU 10 RETRACT

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Date: 5/15/15 Time: 1003

Relinquished by: [Signature]

Date: 5/15/15 Time: 1003

Relinquished by: [Signature]

Received by: [Signature] Date: 05/15/15 Time: 1003

Remarks:

ANALYSIS

RETRACT



**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

BTEX + MTBE + TMB's (8021)

BTEX + MTBE + TMB's (8021)

BTEX + MTBE + TMB's (8021)

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BTEX + MTBE + TMB's (8021)

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

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 04, 2015

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

RE: SWMU 10

OrderNo.: 1505710

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 5/15/2015 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'.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1505710

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-16-GW

Project: SWMU 10

Collection Date: 5/14/2015 2:30:00 PM

Lab ID: 1505710-001

Matrix: AQUEOUS

Received Date: 5/15/2015 10:03:00 AM

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	5/15/2015 9:58:19 PM	19246
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/15/2015 9:58:19 PM	19246
Surr: DNOP	137	0	76.5-150		%REC	1	5/15/2015 9:58:19 PM	19246
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	1.9	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Acenaphthylene	ND	1.9	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Aniline	ND	1.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Anthracene	ND	1.6	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Azobenzene	ND	2.0	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Benz(a)anthracene	ND	2.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Benzo(b)fluoranthene	ND	2.4	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Benzo(g,h,i)perylene	ND	3.1	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Benzo(k)fluoranthene	ND	2.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Benzoic acid	7.1	1.0	20	J	µg/L	1	5/19/2015 8:23:56 PM	19289
Benzyl alcohol	ND	1.2	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Bis(2-chloroethoxy)methane	ND	1.8	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Bis(2-chloroethyl)ether	ND	1.8	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Bis(2-chloroisopropyl)ether	ND	2.1	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Bis(2-ethylhexyl)phthalate	ND	3.3	10		µg/L	1	5/19/2015 8:23:56 PM	19289
4-Bromophenyl phenyl ether	ND	1.4	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Butyl benzyl phthalate	ND	2.4	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Carbazole	ND	1.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
4-Chloro-3-methylphenol	ND	1.4	10		µg/L	1	5/19/2015 8:23:56 PM	19289
4-Chloroaniline	ND	1.9	10		µg/L	1	5/19/2015 8:23:56 PM	19289
2-Chloronaphthalene	ND	1.7	10		µg/L	1	5/19/2015 8:23:56 PM	19289
2-Chlorophenol	ND	1.2	10		µg/L	1	5/19/2015 8:23:56 PM	19289
4-Chlorophenyl phenyl ether	ND	2.0	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Chrysene	ND	2.2	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Di-n-butyl phthalate	ND	2.1	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Di-n-octyl phthalate	ND	1.9	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Dibenz(a,h)anthracene	ND	3.3	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Dibenzofuran	ND	1.9	10		µg/L	1	5/19/2015 8:23:56 PM	19289
1,2-Dichlorobenzene	ND	1.9	10		µg/L	1	5/19/2015 8:23:56 PM	19289
1,3-Dichlorobenzene	ND	1.7	10		µg/L	1	5/19/2015 8:23:56 PM	19289
1,4-Dichlorobenzene	ND	1.2	10		µg/L	1	5/19/2015 8:23:56 PM	19289
3,3'-Dichlorobenzidine	ND	2.6	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Diethyl phthalate	ND	1.7	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Dimethyl phthalate	ND	2.0	10		µg/L	1	5/19/2015 8:23:56 PM	19289

Refer to the QC Summary report and 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 1505710

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-16-GW

Project: SWMU 10

Collection Date: 5/14/2015 2:30:00 PM

Lab ID: 1505710-001

Matrix: AQUEOUS

Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
2,4-Dichlorophenol	ND	1.4	20		µg/L	1	5/19/2015 8:23:56 PM	19289
2,4-Dimethylphenol	ND	1.9	10		µg/L	1	5/19/2015 8:23:56 PM	19289
4,6-Dinitro-2-methylphenol	ND	1.4	20		µg/L	1	5/19/2015 8:23:56 PM	19289
2,4-Dinitrophenol	ND	1.1	20		µg/L	1	5/19/2015 8:23:56 PM	19289
2,4-Dinitrotoluene	ND	1.4	10		µg/L	1	5/19/2015 8:23:56 PM	19289
2,6-Dinitrotoluene	ND	1.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Fluoranthene	ND	1.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Fluorene	ND	1.7	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Hexachlorobenzene	ND	2.0	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Hexachlorobutadiene	ND	1.9	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Hexachlorocyclopentadiene	ND	1.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Hexachloroethane	ND	1.6	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Indeno(1,2,3-cd)pyrene	ND	2.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Isophorone	ND	2.0	10		µg/L	1	5/19/2015 8:23:56 PM	19289
1-Methylnaphthalene	ND	1.8	10		µg/L	1	5/19/2015 8:23:56 PM	19289
2-Methylnaphthalene	ND	2.2	10		µg/L	1	5/19/2015 8:23:56 PM	19289
2-Methylphenol	ND	1.2	10		µg/L	1	5/19/2015 8:23:56 PM	19289
3+4-Methylphenol	ND	1.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
N-Nitrosodi-n-propylamine	ND	2.0	10		µg/L	1	5/19/2015 8:23:56 PM	19289
N-Nitrosodimethylamine	ND	1.4	10		µg/L	1	5/19/2015 8:23:56 PM	19289
N-Nitrosodiphenylamine	ND	2.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Naphthalene	ND	1.8	10		µg/L	1	5/19/2015 8:23:56 PM	19289
2-Nitroaniline	ND	1.8	10		µg/L	1	5/19/2015 8:23:56 PM	19289
3-Nitroaniline	ND	1.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
4-Nitroaniline	ND	1.2	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Nitrobenzene	ND	1.5	10		µg/L	1	5/19/2015 8:23:56 PM	19289
2-Nitrophenol	ND	1.2	10		µg/L	1	5/19/2015 8:23:56 PM	19289
4-Nitrophenol	ND	1.4	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Pentachlorophenol	ND	1.1	20		µg/L	1	5/19/2015 8:23:56 PM	19289
Phenanthrene	ND	2.0	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Phenol	ND	1.1	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Pyrene	ND	2.3	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Pyridine	ND	1.7	10		µg/L	1	5/19/2015 8:23:56 PM	19289
1,2,4-Trichlorobenzene	ND	2.0	10		µg/L	1	5/19/2015 8:23:56 PM	19289
2,4,5-Trichlorophenol	ND	1.6	10		µg/L	1	5/19/2015 8:23:56 PM	19289
2,4,6-Trichlorophenol	ND	1.3	10		µg/L	1	5/19/2015 8:23:56 PM	19289
Surr: 2-Fluorophenol	84.1	0	14.9-111		%REC	1	5/19/2015 8:23:56 PM	19289
Surr: Phenol-d5	74.9	0	11.3-108		%REC	1	5/19/2015 8:23:56 PM	19289
Surr: 2,4,6-Tribromophenol	127	0	15.7-154		%REC	1	5/19/2015 8:23:56 PM	19289

Refer to the QC Summary report and 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 1505710

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-16-GW

Project: SWMU 10

Collection Date: 5/14/2015 2:30:00 PM

Lab ID: 1505710-001

Matrix: AQUEOUS

Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Surr: Nitrobenzene-d5	101	0	47.8-106		%REC	1	5/19/2015 8:23:56 PM	19289
Surr: 2-Fluorobiphenyl	118	0	21.3-123		%REC	1	5/19/2015 8:23:56 PM	19289
Surr: 4-Terphenyl-d14	129	0	14.3-135		%REC	1	5/19/2015 8:23:56 PM	19289
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
Benzene	0.24	0.065	1.0	J	µg/L	1	5/20/2015 9:34:45 PM	R26322
Toluene	ND	0.11	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Ethylbenzene	ND	0.10	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Methyl tert-butyl ether (MTBE)	19	0.17	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,2,4-Trimethylbenzene	0.18	0.16	1.0	J	µg/L	1	5/20/2015 9:34:45 PM	R26322
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,2-Dichloroethane (EDC)	0.47	0.18	1.0	J	µg/L	1	5/20/2015 9:34:45 PM	R26322
1,2-Dibromoethane (EDB)	ND	0.13	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Naphthalene	ND	0.22	2.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1-Methylnaphthalene	ND	0.54	4.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
2-Methylnaphthalene	ND	0.59	4.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Acetone	1.6	0.94	10	J	µg/L	1	5/20/2015 9:34:45 PM	R26322
Bromobenzene	ND	0.11	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Bromodichloromethane	ND	0.090	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Bromoform	ND	0.16	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Bromomethane	ND	1.2	3.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
2-Butanone	ND	0.36	10		µg/L	1	5/20/2015 9:34:45 PM	R26322
Carbon disulfide	ND	0.67	10		µg/L	1	5/20/2015 9:34:45 PM	R26322
Carbon Tetrachloride	ND	0.078	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Chlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Chloroethane	ND	0.10	2.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Chloroform	ND	0.21	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Chloromethane	ND	0.17	3.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
2-Chlorotoluene	ND	0.079	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
4-Chlorotoluene	ND	0.15	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
cis-1,2-DCE	0.39	0.081	1.0	J	µg/L	1	5/20/2015 9:34:45 PM	R26322
cis-1,3-Dichloropropene	ND	0.13	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,2-Dibromo-3-chloropropane	ND	0.14	2.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Dibromochloromethane	ND	0.097	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Dibromomethane	ND	0.23	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,2-Dichlorobenzene	ND	0.12	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,3-Dichlorobenzene	ND	0.093	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,4-Dichlorobenzene	ND	0.17	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Dichlorodifluoromethane	ND	0.69	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,1-Dichloroethane	3.1	0.40	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322

Refer to the QC Summary report and 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 1505710

Date Reported: 11/4/2015

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-16-GW

Project: SWMU 10

Collection Date: 5/14/2015 2:30:00 PM

Lab ID: 1505710-001

Matrix: AQUEOUS

Received Date: 5/15/2015 10:03:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: cadg	
1,1-Dichloroethene	0.73	0.099	1.0	J	µg/L	1	5/20/2015 9:34:45 PM	R26322
1,2-Dichloropropane	ND	0.15	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,3-Dichloropropane	ND	0.17	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
2,2-Dichloropropane	ND	0.15	2.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,1-Dichloropropene	ND	0.12	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Hexachlorobutadiene	ND	0.25	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
2-Hexanone	ND	0.48	10		µg/L	1	5/20/2015 9:34:45 PM	R26322
Isopropylbenzene	ND	0.15	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
4-Isopropyltoluene	ND	0.19	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
4-Methyl-2-pentanone	ND	0.26	10		µg/L	1	5/20/2015 9:34:45 PM	R26322
Methylene Chloride	ND	0.36	3.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
n-Butylbenzene	ND	0.25	3.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
n-Propylbenzene	ND	0.16	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
sec-Butylbenzene	ND	0.23	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Styrene	ND	0.11	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
tert-Butylbenzene	ND	0.13	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,1,2,2-Tetrachloroethane	ND	0.18	2.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Tetrachloroethene (PCE)	ND	0.16	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
trans-1,2-DCE	ND	0.094	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
trans-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,2,3-Trichlorobenzene	ND	0.27	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,2,4-Trichlorobenzene	ND	0.28	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,1,1-Trichloroethane	ND	0.078	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,1,2-Trichloroethane	ND	0.079	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Trichloroethene (TCE)	0.77	0.16	1.0	J	µg/L	1	5/20/2015 9:34:45 PM	R26322
Trichlorofluoromethane	ND	0.13	1.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
1,2,3-Trichloropropane	ND	0.16	2.0		µg/L	1	5/20/2015 9:34:45 PM	R26322
Vinyl chloride	0.47	0.13	1.0	J	µg/L	1	5/20/2015 9:34:45 PM	R26322
Xylenes, Total	0.35	0.28	1.5	J	µg/L	1	5/20/2015 9:34:45 PM	R26322
Surr: 1,2-Dichloroethane-d4	102	0	70-130		%REC	1	5/20/2015 9:34:45 PM	R26322
Surr: 4-Bromofluorobenzene	102	0	70-130		%REC	1	5/20/2015 9:34:45 PM	R26322
Surr: Dibromofluoromethane	91.6	0	70-130		%REC	1	5/20/2015 9:34:45 PM	R26322
Surr: Toluene-d8	98.5	0	70-130		%REC	1	5/20/2015 9:34:45 PM	R26322
EPA METHOD 8015D: GASOLINE RANGE							Analyst: cadg	
Gasoline Range Organics (GRO)	ND	0.040	0.050		mg/L	1	5/20/2015 9:34:45 PM	R26322
Surr: BFB	96.2	0	70-130		%REC	1	5/20/2015 9:34:45 PM	R26322

Refer to the QC Summary report and 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	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505710

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-19246		SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range				
Client ID:	PBW		Batch ID:	19246		RunNo:	26216				
Prep Date:	5/15/2015		Analysis Date:	5/15/2015		SeqNo:	778433		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	1.4		1.000		137	76.5	150				

Sample ID	LCS-19246		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 19246		RunNo: 26216					
Prep Date:	5/15/2015		Analysis Date: 5/15/2015		SeqNo: 778434		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	117	60.1	156			
Surr: DNOP	0.62		0.5000		124	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#: 1505710

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5mL rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R26322			RunNo: 26322					
Prep Date:		Analysis Date: 5/20/2015			SeqNo: 782101	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	0.20	1.0								J
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	0.35	1.0								J
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#: 1505710

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	5mL rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782101	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	0.43	1.0								J
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	12		10.00		116	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.4		10.00		93.8	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782103	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.5	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Chlorobenzene	20	1.0	20.00	0	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#: 1505710

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: R26322			RunNo: 26322					
Prep Date:	Analysis Date: 5/20/2015			SeqNo: 782103		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	21	1.0	20.00	0	107	75.6	144			
Trichloroethene (TCE)	17	1.0	20.00	0	86.6	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.7	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.1	70	130			
Surr: Toluene-d8	10		10.00		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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505710

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19289	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	19289	RunNo:	26300					
Prep Date:	5/19/2015	Analysis Date:	5/19/2015	SeqNo:	781333	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#: 1505710

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-19289	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	19289	RunNo:	26300					
Prep Date:	5/19/2015	Analysis Date:	5/19/2015	SeqNo:	781333	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		76.8	14.9	111			
Surr: Phenol-d5	160		200.0		80.8	11.3	108			
Surr: 2,4,6-Tribromophenol	160		200.0		80.2	15.7	154			
Surr: Nitrobenzene-d5	76		100.0		76.1	47.8	106			
Surr: 2-Fluorobiphenyl	78		100.0		78.4	21.3	123			
Surr: 4-Terphenyl-d14	110		100.0		105	14.3	135			

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#: 1505710

04-Nov-15

Client: Western Refining Company

Project: SWMU 10

Sample ID	lcs-19289		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSW		Batch ID: 19289		RunNo: 26300					
Prep Date:	5/19/2015		Analysis Date: 5/19/2015		SeqNo: 781334		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	76	10	100.0	0	75.9	47.8	99.7			
4-Chloro-3-methylphenol	160	10	200.0	0	79.9	58.1	103			
2-Chlorophenol	140	10	200.0	0	70.4	49.5	96.8			
1,4-Dichlorobenzene	73	10	100.0	0	72.6	40.4	89.4			
2,4-Dinitrotoluene	70	10	100.0	0	69.6	38.6	91.3			
N-Nitrosodi-n-propylamine	80	10	100.0	0	80.1	53.9	95.6			
4-Nitrophenol	140	10	200.0	0	71.9	26.4	108			
Pentachlorophenol	120	20	200.0	0	61.8	36.5	86.6			
Phenol	160	10	200.0	0	77.8	29.3	108			
Pyrene	74	10	100.0	0	73.9	45.7	100			
1,2,4-Trichlorobenzene	81	10	100.0	0	80.7	39.3	94.5			
Surr: 2-Fluorophenol	150		200.0		74.2	14.9	111			
Surr: Phenol-d5	170		200.0		83.5	11.3	108			
Surr: 2,4,6-Tribromophenol	170		200.0		86.1	15.7	154			
Surr: Nitrobenzene-d5	82		100.0		81.8	47.8	106			
Surr: 2-Fluorobiphenyl	86		100.0		86.4	21.3	123			
Surr: 4-Terphenyl-d14	79		100.0		78.7	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#: 1505710

04-Nov-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:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782177	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	10		10.00		102	70	130			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R26322	RunNo:	26322					
Prep Date:		Analysis Date:	5/20/2015	SeqNo:	782181	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	91.6	80.6	122			
Surr: BFB	9.8		10.00		97.7	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

Sample Log-In Check List

Client Name: Western Refining Gallup

Work Order Number: 1505710

RcptNo: 1

Received by/date:

Logged By:

Ashley Gallegos

5/15/2015 10:03:00 AM

Completed By:

Ashley Gallegos

5/15/2015 10:37:57 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° 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	2.8	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.JOHNSON@

WNR.COM

QA/QC Package:

☒ Standard ☒ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other

☒ EDD (Type) EXCEL

Date Time Matrix Sample Request ID

14 5/15/15 H30 WATER SWMU 10-16-GW

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Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

SWMU 10

Project #:

Project Manager:

CHERYL JOHNSON

TRACY PAYNE

On Ice: ☒ Yes ☐ No

Sample Temperature: 20

Container Type and #

40 mL

100-6

1 L

AMBER 2

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Remarks:

Date 05/15/15

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HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

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 Method 8015B (Gas/Diesel)

TPH (Method 418.4) Diesel

EDB (Method 504.1)

8310 (PNA or PAH)

PCBA & Metals

CYANIDE

Anions (F, Cl, NO₃, NO₂, PO₄, SO₄)

8081 Pesticides / 8082 PCB's

8260B (VOA)

8270 (Semi-VOA)

MEALS (Total & Dissol.)

GEN CHEM

CR 6

Alr Bubbles (Y or N)

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

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

June 20, 2016

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

RE: SWMU 10

OrderNo.: 1605872

Dear Ed Riege:

Hall Environmental Analysis Laboratory received 1 sample(s) on 5/18/2016 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'.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1605872

Date Reported: 6/20/2016

CLIENT: Western Refining Company

Client Sample ID: EB051616

Project: SWMU 10

Collection Date: 5/16/2016 6:00:00 PM

Lab ID: 1605872-001

Matrix: AQUEOUS

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH	
Diesel Range Organics (DRO)	ND	0.69	1.0		mg/L	1	5/23/2016 2:31:45 PM	25434
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/23/2016 2:31:45 PM	25434
Surr: DNOP	109	0	70-141		%Rec	1	5/23/2016 2:31:45 PM	25434
EPA METHOD 300.0: ANIONS							Analyst: LGT	
Fluoride	ND	0.023	0.10		mg/L	1	5/19/2016 8:59:00 PM	R34382
Chloride	ND	0.027	0.50		mg/L	1	5/19/2016 8:59:00 PM	R34382
Sulfate	ND	0.064	0.50		mg/L	1	5/19/2016 8:59:00 PM	R34382
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS	
Barium	ND	0.0013	0.0020		mg/L	1	5/23/2016 12:19:40 PM	A34409
Beryllium	ND	0.00031	0.0020		mg/L	1	5/23/2016 12:19:40 PM	A34409
Cadmium	ND	0.00075	0.0020		mg/L	1	5/23/2016 12:19:40 PM	A34409
Chromium	ND	0.0018	0.0060		mg/L	1	5/23/2016 12:19:40 PM	A34409
Cobalt	ND	0.00074	0.0060		mg/L	1	5/23/2016 12:19:40 PM	A34409
Iron	0.016	0.0091	0.020	J	mg/L	1	5/23/2016 12:19:40 PM	A34409
Manganese	0.00043	0.00032	0.0020	J	mg/L	1	5/23/2016 12:19:40 PM	A34409
Nickel	ND	0.0024	0.010		mg/L	1	5/23/2016 12:19:40 PM	A34409
Silver	ND	0.0028	0.0050		mg/L	1	5/23/2016 12:19:40 PM	A34409
Vanadium	ND	0.0013	0.050		mg/L	1	5/23/2016 12:19:40 PM	A34409
Zinc	0.094	0.0028	0.010		mg/L	1	5/23/2016 12:19:40 PM	A34409
EPA METHOD 200.7: METALS							Analyst: ELS	
Barium	ND	0.0013	0.0020		mg/L	1	5/23/2016 10:37:58 AM	B34409
Beryllium	ND	0.00031	0.0020		mg/L	1	5/23/2016 10:37:58 AM	B34409
Cadmium	ND	0.00075	0.0020		mg/L	1	5/23/2016 10:37:58 AM	B34409
Chromium	ND	0.0022	0.0060		mg/L	1	5/23/2016 10:37:58 AM	B34409
Cobalt	ND	0.00085	0.0060		mg/L	1	5/23/2016 10:37:58 AM	B34409
Iron	ND	0.0091	0.020		mg/L	1	5/23/2016 10:37:58 AM	B34409
Manganese	ND	0.0015	0.0020		mg/L	1	5/23/2016 10:37:58 AM	B34409
Nickel	ND	0.0024	0.010		mg/L	1	5/23/2016 10:37:58 AM	B34409
Silver	ND	0.0028	0.0050		mg/L	1	5/23/2016 10:37:58 AM	B34409
Vanadium	ND	0.0015	0.050		mg/L	1	5/23/2016 10:37:58 AM	B34409
Zinc	ND	0.0039	0.010		mg/L	1	5/23/2016 10:37:58 AM	B34409
EPA 200.8: DISSOLVED METALS							Analyst: DBD	
Antimony	ND	0.00047	0.0010		mg/L	1	5/23/2016 3:09:01 PM	B34426
Arsenic	ND	0.00014	0.0010		mg/L	1	5/23/2016 3:09:01 PM	B34426
Lead	ND	0.00017	0.00050		mg/L	1	5/23/2016 3:09:01 PM	B34426
Selenium	ND	0.00021	0.0010		mg/L	1	5/23/2016 3:09:01 PM	B34426
EPA 200.8: METALS							Analyst: DBD	

Refer to the QC Summary report and 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 1605872

Date Reported: 6/20/2016

CLIENT: Western Refining Company

Client Sample ID: EB051616

Project: SWMU 10

Collection Date: 5/16/2016 6:00:00 PM

Lab ID: 1605872-001

Matrix: AQUEOUS

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: DBD	
Antimony	ND	0.00047	0.0010		mg/L	1	5/23/2016 1:36:14 PM	A34426
Arsenic	ND	0.00029	0.0010		mg/L	1	5/23/2016 1:36:14 PM	A34426
Lead	ND	0.00017	0.00050		mg/L	1	5/23/2016 1:36:14 PM	A34426
Selenium	ND	0.00021	0.0010		mg/L	1	5/23/2016 1:36:14 PM	A34426
EPA METHOD 245.1: MERCURY							Analyst: pmf	
Mercury	ND	0.000053	0.00020		mg/L	1	5/24/2016 11:15:37 AM	25455
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Acenaphthylene	ND	2.4	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Aniline	ND	2.4	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Anthracene	ND	2.5	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Azobenzene	ND	2.7	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Benz(a)anthracene	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Benzo(b)fluoranthene	ND	2.9	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Benzo(g,h,i)perylene	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Benzo(k)fluoranthene	ND	3.0	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Benzoic acid	ND	2.6	20		µg/L	1	5/24/2016 2:02:53 PM	25437
Benzyl alcohol	ND	3.0	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Bis(2-chloroethoxy)methane	ND	2.8	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Bis(2-chloroethyl)ether	ND	2.7	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Bis(2-chloroisopropyl)ether	ND	1.9	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Bis(2-ethylhexyl)phthalate	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
4-Bromophenyl phenyl ether	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Butyl benzyl phthalate	ND	2.5	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Carbazole	ND	2.3	10		µg/L	1	5/24/2016 2:02:53 PM	25437
4-Chloro-3-methylphenol	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
4-Chloroaniline	ND	2.7	10		µg/L	1	5/24/2016 2:02:53 PM	25437
2-Chloronaphthalene	ND	2.3	10		µg/L	1	5/24/2016 2:02:53 PM	25437
2-Chlorophenol	ND	2.2	10		µg/L	1	5/24/2016 2:02:53 PM	25437
4-Chlorophenyl phenyl ether	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Chrysene	ND	2.8	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Di-n-butyl phthalate	ND	2.4	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Di-n-octyl phthalate	ND	2.0	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Dibenz(a,h)anthracene	ND	2.7	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Dibenzofuran	ND	2.5	10		µg/L	1	5/24/2016 2:02:53 PM	25437
1,2-Dichlorobenzene	ND	2.3	10		µg/L	1	5/24/2016 2:02:53 PM	25437
1,3-Dichlorobenzene	ND	2.3	10		µg/L	1	5/24/2016 2:02:53 PM	25437

Refer to the QC Summary report and 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 1605872

Date Reported: 6/20/2016

CLIENT: Western Refining Company

Client Sample ID: EB051616

Project: SWMU 10

Collection Date: 5/16/2016 6:00:00 PM

Lab ID: 1605872-001

Matrix: AQUEOUS

Received Date: 5/18/2016 4:00:00 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	5/24/2016 2:02:53 PM	25437
3,3'-Dichlorobenzidine	ND	2.4	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Diethyl phthalate	ND	2.7	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Dimethyl phthalate	ND	2.4	10		µg/L	1	5/24/2016 2:02:53 PM	25437
2,4-Dichlorophenol	ND	2.3	20		µg/L	1	5/24/2016 2:02:53 PM	25437
2,4-Dimethylphenol	ND	3.0	10		µg/L	1	5/24/2016 2:02:53 PM	25437
4,6-Dinitro-2-methylphenol	ND	1.8	20		µg/L	1	5/24/2016 2:02:53 PM	25437
2,4-Dinitrophenol	ND	2.8	20		µg/L	1	5/24/2016 2:02:53 PM	25437
2,4-Dinitrotoluene	ND	3.1	10		µg/L	1	5/24/2016 2:02:53 PM	25437
2,6-Dinitrotoluene	ND	2.7	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Fluoranthene	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Fluorene	ND	2.7	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Hexachlorobenzene	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Hexachlorobutadiene	ND	2.2	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Hexachlorocyclopentadiene	ND	2.3	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Hexachloroethane	ND	2.4	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Indeno(1,2,3-cd)pyrene	ND	3.0	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Isophorone	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
1-Methylnaphthalene	ND	2.9	10		µg/L	1	5/24/2016 2:02:53 PM	25437
2-Methylnaphthalene	ND	2.9	10		µg/L	1	5/24/2016 2:02:53 PM	25437
2-Methylphenol	ND	2.5	10		µg/L	1	5/24/2016 2:02:53 PM	25437
3+4-Methylphenol	ND	2.3	10		µg/L	1	5/24/2016 2:02:53 PM	25437
N-Nitrosodi-n-propylamine	ND	2.4	10		µg/L	1	5/24/2016 2:02:53 PM	25437
N-Nitrosodimethylamine	ND	2.2	10		µg/L	1	5/24/2016 2:02:53 PM	25437
N-Nitrosodiphenylamine	ND	2.3	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Naphthalene	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
2-Nitroaniline	ND	2.8	10		µg/L	1	5/24/2016 2:02:53 PM	25437
3-Nitroaniline	ND	2.9	10		µg/L	1	5/24/2016 2:02:53 PM	25437
4-Nitroaniline	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Nitrobenzene	ND	2.8	10		µg/L	1	5/24/2016 2:02:53 PM	25437
2-Nitrophenol	ND	2.4	10		µg/L	1	5/24/2016 2:02:53 PM	25437
4-Nitrophenol	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Pentachlorophenol	ND	2.3	20		µg/L	1	5/24/2016 2:02:53 PM	25437
Phenanthrene	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Phenol	ND	2.0	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Pyrene	ND	3.1	10		µg/L	1	5/24/2016 2:02:53 PM	25437
Pyridine	ND	2.2	10		µg/L	1	5/24/2016 2:02:53 PM	25437
1,2,4-Trichlorobenzene	ND	2.6	10		µg/L	1	5/24/2016 2:02:53 PM	25437
2,4,5-Trichlorophenol	ND	2.2	10		µg/L	1	5/24/2016 2:02:53 PM	25437

Refer to the QC Summary report and 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 1605872

Date Reported: 6/20/2016

CLIENT: Western Refining Company

Client Sample ID: EB051616

Project: SWMU 10

Collection Date: 5/16/2016 6:00:00 PM

Lab ID: 1605872-001

Matrix: AQUEOUS

Received Date: 5/18/2016 4:00:00 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	5/24/2016 2:02:53 PM	25437
Surr: 2-Fluorophenol	43.3	0	15-123		%Rec	1	5/24/2016 2:02:53 PM	25437
Surr: Phenol-d5	35.0	0	4.13-124		%Rec	1	5/24/2016 2:02:53 PM	25437
Surr: 2,4,6-Tribromophenol	79.4	0	18.4-134		%Rec	1	5/24/2016 2:02:53 PM	25437
Surr: Nitrobenzene-d5	64.3	0	28.8-134		%Rec	1	5/24/2016 2:02:53 PM	25437
Surr: 2-Fluorobiphenyl	65.3	0	35.9-125		%Rec	1	5/24/2016 2:02:53 PM	25437
Surr: 4-Terphenyl-d14	48.6	0	15-146		%Rec	1	5/24/2016 2:02:53 PM	25437
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Benzene	ND	0.096	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Toluene	ND	0.12	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Ethylbenzene	ND	0.11	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Methyl tert-butyl ether (MTBE)	ND	0.21	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,2,4-Trimethylbenzene	ND	0.11	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,2-Dichloroethane (EDC)	ND	0.12	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,2-Dibromoethane (EDB)	ND	0.11	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Naphthalene	ND	0.093	2.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1-Methylnaphthalene	ND	0.20	4.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
2-Methylnaphthalene	0.44	0.16	4.0	J	µg/L	1	5/26/2016 2:38:05 PM	A34513
Acetone	5.5	4.9	10	J	µg/L	1	5/26/2016 2:38:05 PM	A34513
Bromobenzene	ND	0.098	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Bromodichloromethane	ND	0.14	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Bromoform	ND	0.10	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Bromomethane	ND	0.78	3.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
2-Butanone	ND	0.74	10		µg/L	1	5/26/2016 2:38:05 PM	A34513
Carbon disulfide	ND	0.60	10		µg/L	1	5/26/2016 2:38:05 PM	A34513
Carbon Tetrachloride	ND	0.11	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Chlorobenzene	ND	0.11	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Chloroethane	ND	0.19	2.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Chloroform	ND	0.089	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Chloromethane	ND	0.21	3.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
2-Chlorotoluene	ND	0.40	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
4-Chlorotoluene	ND	0.13	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
cis-1,2-DCE	ND	0.12	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
cis-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,2-Dibromo-3-chloropropane	ND	0.23	2.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Dibromochloromethane	ND	0.087	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Dibromomethane	ND	0.12	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,2-Dichlorobenzene	ND	0.40	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513

Refer to the QC Summary report and 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 1605872

Date Reported: 6/20/2016

CLIENT: Western Refining Company

Client Sample ID: EB051616

Project: SWMU 10

Collection Date: 5/16/2016 6:00:00 PM

Lab ID: 1605872-001

Matrix: AQUEOUS

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
1,3-Dichlorobenzene	ND	0.14	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,4-Dichlorobenzene	ND	0.14	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Dichlorodifluoromethane	ND	0.36	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,1-Dichloroethane	ND	0.11	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,1-Dichloroethene	ND	0.11	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,2-Dichloropropane	ND	0.11	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,3-Dichloropropane	ND	0.16	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
2,2-Dichloropropane	ND	0.17	2.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,1-Dichloropropene	ND	0.13	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Hexachlorobutadiene	ND	0.20	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
2-Hexanone	ND	0.84	10		µg/L	1	5/26/2016 2:38:05 PM	A34513
Isopropylbenzene	ND	0.10	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
4-Isopropyltoluene	ND	0.14	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
4-Methyl-2-pentanone	ND	0.43	10		µg/L	1	5/26/2016 2:38:05 PM	A34513
Methylene Chloride	ND	0.19	3.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
n-Butylbenzene	ND	0.16	3.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
n-Propylbenzene	ND	0.13	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
sec-Butylbenzene	ND	0.12	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Styrene	ND	0.11	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
tert-Butylbenzene	ND	0.12	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,1,2,2-Tetrachloroethane	ND	0.13	2.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Tetrachloroethene (PCE)	ND	0.15	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
trans-1,2-DCE	ND	0.40	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
trans-1,3-Dichloropropene	ND	0.10	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,2,3-Trichlorobenzene	ND	0.11	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,2,4-Trichlorobenzene	ND	0.13	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,1,1-Trichloroethane	ND	0.091	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,1,2-Trichloroethane	ND	0.13	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Trichloroethene (TCE)	ND	0.18	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Trichlorofluoromethane	ND	0.20	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
1,2,3-Trichloropropane	ND	0.20	2.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Vinyl chloride	ND	0.20	1.0		µg/L	1	5/26/2016 2:38:05 PM	A34513
Xylenes, Total	ND	0.37	1.5		µg/L	1	5/26/2016 2:38:05 PM	A34513
Surr: 1,2-Dichloroethane-d4	100	0	70-130		%Rec	1	5/26/2016 2:38:05 PM	A34513
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	5/26/2016 2:38:05 PM	A34513
Surr: Dibromofluoromethane	102	0	70-130		%Rec	1	5/26/2016 2:38:05 PM	A34513
Surr: Toluene-d8	101	0	70-130		%Rec	1	5/26/2016 2:38:05 PM	A34513

EPA METHOD 8015D: GASOLINE RANGE

Analyst: DJF

Refer to the QC Summary report and 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 1605872

Date Reported: 6/20/2016

CLIENT: Western Refining Company

Client Sample ID: EB051616

Project: SWMU 10

Collection Date: 5/16/2016 6:00:00 PM

Lab ID: 1605872-001

Matrix: AQUEOUS

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF	
Gasoline Range Organics (GRO)	ND	0.015	0.050		mg/L	1	5/26/2016 2:38:05 PM	C34513
Surr: BFB	99.1	0	70-130		%Rec	1	5/26/2016 2:38:05 PM	C34513

Refer to the QC Summary report and 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



Wet Chemistry by Method 4500CN E-2011

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/l		mg/l	mg/l			
Cyanide	U		0.00180	0.00500	1	05/26/2016 15:02	WG875229

Co

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3140016-1 05/26/16 14:34

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L836171-02 Original Sample (OS) • Duplicate (DUP)

(OS) L836171-02 05/26/16 14:40 • (DUP) R3140016-4 05/26/16 14:41

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3140016-2 05/26/16 14:35 • (LCSD) R3140016-3 05/26/16 14:36

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 %
Cyanide	0.100	0.107	0.106	107	106	90.0-110			1.00	20

L836180-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L836180-02 05/26/16 14:42 • (MS) R3140016-5 05/26/16 14:43 • (MSD) R3140016-6 05/26/16 14:46

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 %
Cyanide	0.200	ND	0.186	0.201	93.0	101	1	90.0-110		8.00		20



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

J	The identification of the analyte is acceptable; the reported value is an estimate.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

¹ Cs² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1605872

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-B	SampType:	MBLK	TestCode:	EPA Method 200.7: Metals					
Client ID:	PBW	Batch ID:	B34409	RunNo:	34409					
Prep Date:		Analysis Date:	5/23/2016	SeqNo:	1060912	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: Metals					
Client ID:	LCSW	Batch ID:	B34409	RunNo:	34409					
Prep Date:		Analysis Date:	5/23/2016	SeqNo:	1060916	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	0.51	0.0020	0.5000	0	103	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.0	85	115			
Chromium	0.48	0.0060	0.5000	0	96.3	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.4	85	115			
Iron	0.49	0.020	0.5000	0	97.5	85	115			
Manganese	0.48	0.0020	0.5000	0	95.8	85	115			
Nickel	0.46	0.010	0.5000	0	92.0	85	115			
Silver	0.098	0.0050	0.1000	0	98.4	85	115			
Vanadium	0.51	0.050	0.5000	0	102	85	115			
Zinc	0.49	0.010	0.5000	0	98.0	85	115			

Sample ID	LLCS-B	SampType:	LCSLL	TestCode:	EPA Method 200.7: Metals					
Client ID:	BatchQC	Batch ID:	B34409	RunNo:	34409					
Prep Date:		Analysis Date:	5/23/2016	SeqNo:	1060917	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0028	0.0020	0.002000	0	138	50	150			
Beryllium	0.0021	0.0020	0.002000	0	107	50	150			
Cadmium	0.0016	0.0020	0.002000	0	81.0	50	150			J
Chromium	0.0059	0.0060	0.006000	0	99.0	50	150			J
Cobalt	0.0072	0.0060	0.006000	0	121	50	150			
Iron	0.022	0.020	0.02000	0	109	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#: 1605872

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	LLLCS-B		SampType: LCSLL			TestCode: EPA Method 200.7: Metals				
Client ID:	BatchQC		Batch ID: B34409			RunNo: 34409				
Prep Date:			Analysis Date: 5/23/2016			SeqNo: 1060917		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	105	50	150			
Nickel	0.0057	0.010	0.005000	0	113	50	150			J
Silver	0.0051	0.0050	0.005000	0	102	50	150			
Vanadium	0.010	0.050	0.01000	0	105	50	150			J
Zinc	0.0062	0.010	0.005000	0	123	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#: 1605872

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-A	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	A34409	RunNo:	34409					
Prep Date:		Analysis Date:	5/23/2016	SeqNo:	1060909	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-A	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	A34409	RunNo:	34409					
Prep Date:		Analysis Date:	5/23/2016	SeqNo:	1060910	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	105	85	115			
Cadmium	0.51	0.0020	0.5000	0	101	85	115			
Chromium	0.50	0.0060	0.5000	0	99.5	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.2	85	115			
Iron	0.50	0.020	0.5000	0	100	85	115			
Manganese	0.49	0.0020	0.5000	0	98.4	85	115			
Nickel	0.47	0.010	0.5000	0	94.8	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Vanadium	0.53	0.050	0.5000	0	105	85	115			
Zinc	0.51	0.010	0.5000	0	101	85	115			

Sample ID	LLCS-A	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	A34409	RunNo:	34409					
Prep Date:		Analysis Date:	5/23/2016	SeqNo:	1060911	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0018	0.0020	0.002000	0	89.0	50	150			J
Beryllium	0.0019	0.0020	0.002000	0	94.0	50	150			J
Cadmium	0.0017	0.0020	0.002000	0	87.0	50	150			J
Chromium	0.0058	0.0060	0.006000	0	96.3	50	150			J
Cobalt	0.0064	0.0060	0.006000	0	106	50	150			
Iron	0.023	0.020	0.02000	0	116	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#: 1605872

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	LLLCS-A		SampType: LCSLL			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	BatchQC		Batch ID: A34409			RunNo: 34409				
Prep Date:			Analysis Date: 5/23/2016			SeqNo: 1060911		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	103	50	150			
Nickel	0.0055	0.010	0.005000	0	110	50	150			J
Silver	0.0049	0.0050	0.005000	0	97.8	50	150			J
Vanadium	0.0099	0.050	0.01000	0	98.9	50	150			J
Zinc	0.0048	0.010	0.005000	0	95.4	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#: 1605872

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS			SampType:	LCS			TestCode:	EPA 200.8: Metals				
Client ID:	LCSW			Batch ID:	A34426			RunNo:	34426				
Prep Date:				Analysis Date:	5/23/2016			SeqNo:	1061483		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	100	85	115						
Lead	0.013	0.00050	0.01250	0	102	85	115						
Selenium	0.025	0.0010	0.02500	0	101	85	115						

Sample ID	LCSLL			SampType:	LCSLL			TestCode:	EPA 200.8: Metals			
Client ID:	BatchQC			Batch ID:	A34426			RunNo:	34426			
Prep Date:				Analysis Date:	5/23/2016			SeqNo:	1061484		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	0.00096	0.0010	0.001000	0	95.6	50	150			J		
Lead	0.00053	0.00050	0.0005000	0	105	50	150					
Selenium	0.00094	0.0010	0.001000	0	94.3	50	150			J		

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Metals					
Client ID:	PBW	Batch ID: A34426			RunNo: 34426					
Prep Date:		Analysis Date: 5/23/2016			SeqNo: 1061486		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#: 1605872

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: B34426		RunNo: 34426					
Prep Date:			Analysis Date: 5/23/2016		SeqNo: 1061592		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	100	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.025	0.0010	0.02500	0	101	85	115			

Sample ID	LCSLL		SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC		Batch ID: B34426		RunNo: 34426					
Prep Date:			Analysis Date: 5/23/2016		SeqNo: 1061596		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	0.00096	0.0010	0.001000	0	95.6	50	150			J
Lead	0.00053	0.00050	0.0005000	0	105	50	150			
Selenium	0.00094	0.0010	0.001000	0	94.3	50	150			J

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: B34426			RunNo: 34426					
Prep Date:		Analysis Date: 5/23/2016			SeqNo: 1061600		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#: 1605872

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-25455		SampType:	MBLK		TestCode:	EPA Method 245.1: Mercury				
Client ID:	PBW		Batch ID:	25455		RunNo:	34451				
Prep Date:	5/23/2016		Analysis Date:	5/24/2016		SeqNo:	1062360		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.00020									

Sample ID	LCS-25455		SampType: LCS		TestCode: EPA Method 245.1: Mercury					
Client ID:	LCSW		Batch ID: 25455		RunNo: 34451					
Prep Date:	5/23/2016		Analysis Date: 5/24/2016		SeqNo: 1062361		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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1605872

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID MB	SampType: mblk		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R34382		RunNo: 34382							
Prep Date:	Analysis Date: 5/19/2016		SeqNo: 1060112		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: R34382		RunNo: 34382							
Prep Date:	Analysis Date: 5/19/2016		SeqNo: 1060113		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	4.6	0.50	5.000	0	92.9	90	110			
Sulfate	9.6	0.50	10.00	0	96.1	90	110			

Sample ID 1605872-001EMS	SampType: ms		TestCode: EPA Method 300.0: Anions							
Client ID: EB051616	Batch ID: R34382		RunNo: 34382							
Prep Date:	Analysis Date: 5/19/2016		SeqNo: 1060115		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	98.8	71.4	120			
Chloride	4.5	0.50	5.000	0	90.2	84	116			
Sulfate	9.3	0.50	10.00	0	93.3	87	116			

Sample ID 1605872-001EMSD	SampType: msd		TestCode: EPA Method 300.0: Anions							
Client ID: EB051616	Batch ID: R34382		RunNo: 34382							
Prep Date:	Analysis Date: 5/19/2016		SeqNo: 1060116		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	99.6	71.4	120	0.767	20	
Chloride	4.5	0.50	5.000	0	90.6	84	116	0.440	20	
Sulfate	9.4	0.50	10.00	0	93.7	87	116	0.378	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#: 1605872

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS-25434		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 25434		RunNo: 34407					
Prep Date:	5/23/2016		Analysis Date: 5/23/2016		SeqNo: 1060958		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.2	1.0	5.000	0	105	71.3	139			
Surr: DNOP	0.53		0.5000		107	70	141			

Sample ID	MB-25434		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW		Batch ID: 25434		RunNo: 34407					
Prep Date:	5/23/2016		Analysis Date: 5/23/2016		SeqNo: 1060959		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.1		1.000		113	70	141			

Qualifiers:

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

B Analyte detected in the 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#: 1605872

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	rb1	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	A34513	RunNo:	34513					
Prep Date:		Analysis Date:	5/26/2016	SeqNo:	1064513	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1605872

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID rb1	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID: PBW	Batch ID: A34513			RunNo: 34513						
Prep Date:	Analysis Date: 5/26/2016			SeqNo: 1064513		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	0.45	3.0								J
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	9.6		10.00		96.2	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID 100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES						
Client ID: LCSW	Batch ID: A34513			RunNo: 34513						
Prep Date:	Analysis Date: 5/26/2016			SeqNo: 1064514		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.7	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Chlorobenzene	20	1.0	20.00	0	99.4	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	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1605872

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: A34513			RunNo: 34513					
Prep Date:	Analysis Date: 5/26/2016			SeqNo: 1064514		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	20	1.0	20.00	0	101	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	90.3	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		99.6	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		112	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	11		10.00		106	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#: 1605872

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-25437		SampType: MBLK		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	PBW		Batch ID: 25437		RunNo: 34450					
Prep Date:	5/23/2016		Analysis Date: 5/24/2016		SeqNo: 1062341		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	6.7	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	3.8	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	4.8	10								J
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#: 1605872

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-25437		SampType: MBLK		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	PBW		Batch ID: 25437		RunNo: 34450					
Prep Date:	5/23/2016		Analysis Date: 5/24/2016		SeqNo: 1062341		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		57.6	15	123			
Surr: Phenol-d5	87		200.0		43.6	4.13	124			
Surr: 2,4,6-Tribromophenol	160		200.0		79.7	18.4	134			
Surr: Nitrobenzene-d5	75		100.0		74.9	28.8	134			
Surr: 2-Fluorobiphenyl	71		100.0		71.3	35.9	125			
Surr: 4-Terphenyl-d14	65		100.0		65.5	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#: 1605872

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-25437		SampType: LCS			TestCode: EPA Method 8270C: Semivolatiles				
Client ID:	LCSW		Batch ID: 25437			RunNo: 34450				
Prep Date:	5/23/2016		Analysis Date: 5/24/2016			SeqNo: 1062342		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	84	10	100.0	0	83.7	35	113			
4-Chloro-3-methylphenol	130	10	200.0	0	66.0	40.7	114			
2-Chlorophenol	130	10	200.0	0	64.4	37.6	113			
1,4-Dichlorobenzene	69	10	100.0	0	68.7	37.7	106			
2,4-Dinitrotoluene	70	10	100.0	0	70.1	37	91			
N-Nitrosodi-n-propylamine	74	10	100.0	0	74.5	45.4	105			
4-Nitrophenol	73	10	200.0	0	36.4	33.4	104			
Pentachlorophenol	120	20	200.0	0	58.0	29.5	94.9			
Phenol	77	10	200.0	0	38.4	30.6	119			
Pyrene	82	10	100.0	0	82.0	26.2	120			
1,2,4-Trichlorobenzene	82	10	100.0	0	81.6	39.9	125			
Surr: 2-Fluorophenol	95		200.0		47.6	15	123			
Surr: Phenol-d5	75		200.0		37.5	4.13	124			
Surr: 2,4,6-Tribromophenol	150		200.0		74.3	18.4	134			
Surr: Nitrobenzene-d5	68		100.0		68.2	28.8	134			
Surr: 2-Fluorobiphenyl	70		100.0		70.0	35.9	125			
Surr: 4-Terphenyl-d14	61		100.0		61.5	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#: 1605872

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	rb1	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID: C34513			RunNo: 34513					
Prep Date:		Analysis Date: 5/26/2016			SeqNo: 1064532		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	9.7		10.00		96.9	70	130			

Sample ID	2.5ug gro lcs		SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range					
Client ID:	LCSW		Batch ID: C34513		RunNo: 34513					
Prep Date:			Analysis Date: 5/26/2016		SeqNo: 1064533		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.52	0.050	0.5000	0	103	75.4	118			
Surr: BFB	10		10.00		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



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: 1605872

RcptNo: 1

Received by/date:

SA 05/18/16

Logged By: Lindsay Mangin

5/18/2016 4:00:00 PM

Judy Mangin

Completed By: Lindsay Mangin

5/19/2016 6:38:35 AM

Judy Mangin

Reviewed By:

Ju 05/19/16

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: 2, 1
(<2 or >12 unless noted)
Adjusted? NO
Checked by: *UJG*

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 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

June 20, 2016

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

RE: SWMU 10

OrderNo.: 1605873

Dear Ed Riege:

Hall Environmental Analysis Laboratory received 1 sample(s) on 5/18/2016 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'.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1605873

Date Reported: 6/20/2016

CLIENT: Western Refining Company

Client Sample ID: EB051716

Project: SWMU 10

Collection Date: 5/17/2016 5:00:00 PM

Lab ID: 1605873-001

Matrix: AQUEOUS

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE							Analyst: KJH	
Diesel Range Organics (DRO)	ND	0.69	1.0		mg/L	1	5/23/2016 2:53:51 PM	25434
Motor Oil Range Organics (MRO)	ND	5.0	5.0		mg/L	1	5/23/2016 2:53:51 PM	25434
Surr: DNOP	114	0	70-141		%Rec	1	5/23/2016 2:53:51 PM	25434
EPA METHOD 300.0: ANIONS							Analyst: LGT	
Fluoride	ND	0.023	0.10		mg/L	1	5/19/2016 9:48:39 PM	R34382
Chloride	ND	0.027	0.50		mg/L	1	5/19/2016 9:48:39 PM	R34382
Sulfate	ND	0.064	0.50		mg/L	1	5/19/2016 9:48:39 PM	R34382
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS	
Barium	ND	0.0013	0.0020		mg/L	1	5/23/2016 12:21:52 PM	A34409
Beryllium	ND	0.00031	0.0020		mg/L	1	5/23/2016 12:21:52 PM	A34409
Cadmium	ND	0.00075	0.0020		mg/L	1	5/23/2016 12:21:52 PM	A34409
Chromium	ND	0.0018	0.0060		mg/L	1	5/23/2016 12:21:52 PM	A34409
Cobalt	ND	0.00074	0.0060		mg/L	1	5/23/2016 12:21:52 PM	A34409
Iron	ND	0.0091	0.020		mg/L	1	5/23/2016 12:21:52 PM	A34409
Manganese	ND	0.00032	0.0020		mg/L	1	5/23/2016 12:21:52 PM	A34409
Nickel	ND	0.0024	0.010		mg/L	1	5/23/2016 12:21:52 PM	A34409
Silver	ND	0.0028	0.0050		mg/L	1	5/23/2016 12:21:52 PM	A34409
Vanadium	ND	0.0013	0.050		mg/L	1	5/23/2016 12:21:52 PM	A34409
Zinc	0.042	0.0028	0.010		mg/L	1	5/23/2016 12:21:52 PM	A34409
EPA METHOD 200.7: METALS							Analyst: ELS	
Barium	ND	0.0013	0.0020		mg/L	1	5/23/2016 10:40:08 AM	B34409
Beryllium	ND	0.00031	0.0020		mg/L	1	5/23/2016 10:40:08 AM	B34409
Cadmium	ND	0.00075	0.0020		mg/L	1	5/23/2016 10:40:08 AM	B34409
Chromium	ND	0.0022	0.0060		mg/L	1	5/23/2016 10:40:08 AM	B34409
Cobalt	ND	0.00085	0.0060		mg/L	1	5/23/2016 10:40:08 AM	B34409
Iron	ND	0.0091	0.020		mg/L	1	5/23/2016 10:40:08 AM	B34409
Manganese	ND	0.0015	0.0020		mg/L	1	5/23/2016 10:40:08 AM	B34409
Nickel	ND	0.0024	0.010		mg/L	1	5/23/2016 10:40:08 AM	B34409
Silver	ND	0.0028	0.0050		mg/L	1	5/23/2016 10:40:08 AM	B34409
Vanadium	ND	0.0015	0.050		mg/L	1	5/23/2016 10:40:08 AM	B34409
Zinc	ND	0.0039	0.010		mg/L	1	5/23/2016 10:40:08 AM	B34409
EPA 200.8: DISSOLVED METALS							Analyst: DBD	
Antimony	ND	0.00047	0.0010		mg/L	1	5/23/2016 3:14:10 PM	B34426
Arsenic	ND	0.00014	0.0010		mg/L	1	5/23/2016 3:14:10 PM	B34426
Lead	ND	0.00017	0.00050		mg/L	1	5/23/2016 3:14:10 PM	B34426
Selenium	ND	0.00021	0.0010		mg/L	1	5/23/2016 3:14:10 PM	B34426

EPA 200.8: METALS

Analyst: **DBD**

Refer to the QC Summary report and 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 1605873

Date Reported: 6/20/2016

CLIENT: Western Refining Company

Client Sample ID: EB051716

Project: SWMU 10

Collection Date: 5/17/2016 5:00:00 PM

Lab ID: 1605873-001

Matrix: AQUEOUS

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: METALS							Analyst: DBD	
Antimony	ND	0.00047	0.0010		mg/L	1	5/23/2016 1:51:44 PM	A34426
Arsenic	ND	0.00029	0.0010		mg/L	1	5/23/2016 1:51:44 PM	A34426
Lead	ND	0.00017	0.00050		mg/L	1	5/23/2016 1:51:44 PM	A34426
Selenium	ND	0.00021	0.0010		mg/L	1	5/23/2016 1:51:44 PM	A34426
EPA METHOD 245.1: MERCURY							Analyst: pmf	
Mercury	ND	0.000053	0.00020		mg/L	1	5/24/2016 11:17:41 AM	25455
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Acenaphthylene	ND	2.4	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Aniline	ND	2.4	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Anthracene	ND	2.5	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Azobenzene	ND	2.7	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Benz(a)anthracene	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Benzo(a)pyrene	ND	2.7	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Benzo(b)fluoranthene	ND	2.9	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Benzo(g,h,i)perylene	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Benzo(k)fluoranthene	ND	3.0	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Benzoic acid	ND	2.6	20		µg/L	1	5/24/2016 2:33:15 PM	25437
Benzyl alcohol	ND	3.0	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Bis(2-chloroethoxy)methane	ND	2.8	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Bis(2-chloroethyl)ether	ND	2.7	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Bis(2-chloroisopropyl)ether	ND	1.9	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Bis(2-ethylhexyl)phthalate	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
4-Bromophenyl phenyl ether	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Butyl benzyl phthalate	ND	2.5	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Carbazole	ND	2.3	10		µg/L	1	5/24/2016 2:33:15 PM	25437
4-Chloro-3-methylphenol	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
4-Chloroaniline	ND	2.7	10		µg/L	1	5/24/2016 2:33:15 PM	25437
2-Chloronaphthalene	ND	2.3	10		µg/L	1	5/24/2016 2:33:15 PM	25437
2-Chlorophenol	ND	2.2	10		µg/L	1	5/24/2016 2:33:15 PM	25437
4-Chlorophenyl phenyl ether	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Chrysene	ND	2.8	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Di-n-butyl phthalate	ND	2.4	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Di-n-octyl phthalate	ND	2.0	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Dibenz(a,h)anthracene	ND	2.7	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Dibenzofuran	ND	2.5	10		µg/L	1	5/24/2016 2:33:15 PM	25437
1,2-Dichlorobenzene	ND	2.3	10		µg/L	1	5/24/2016 2:33:15 PM	25437
1,3-Dichlorobenzene	ND	2.3	10		µg/L	1	5/24/2016 2:33:15 PM	25437

Refer to the QC Summary report and 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 1605873

Date Reported: 6/20/2016

CLIENT: Western Refining Company

Client Sample ID: EB051716

Project: SWMU 10

Collection Date: 5/17/2016 5:00:00 PM

Lab ID: 1605873-001

Matrix: AQUEOUS

Received Date: 5/18/2016 4:00:00 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	5/24/2016 2:33:15 PM	25437
3,3'-Dichlorobenzidine	ND	2.4	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Diethyl phthalate	ND	2.7	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Dimethyl phthalate	ND	2.4	10		µg/L	1	5/24/2016 2:33:15 PM	25437
2,4-Dichlorophenol	ND	2.3	20		µg/L	1	5/24/2016 2:33:15 PM	25437
2,4-Dimethylphenol	ND	3.0	10		µg/L	1	5/24/2016 2:33:15 PM	25437
4,6-Dinitro-2-methylphenol	ND	1.8	20		µg/L	1	5/24/2016 2:33:15 PM	25437
2,4-Dinitrophenol	ND	2.8	20		µg/L	1	5/24/2016 2:33:15 PM	25437
2,4-Dinitrotoluene	ND	3.1	10		µg/L	1	5/24/2016 2:33:15 PM	25437
2,6-Dinitrotoluene	ND	2.7	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Fluoranthene	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Fluorene	ND	2.7	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Hexachlorobenzene	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Hexachlorobutadiene	ND	2.2	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Hexachlorocyclopentadiene	ND	2.3	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Hexachloroethane	ND	2.4	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Indeno(1,2,3-cd)pyrene	ND	3.0	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Isophorone	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
1-Methylnaphthalene	ND	2.9	10		µg/L	1	5/24/2016 2:33:15 PM	25437
2-Methylnaphthalene	ND	2.9	10		µg/L	1	5/24/2016 2:33:15 PM	25437
2-Methylphenol	ND	2.5	10		µg/L	1	5/24/2016 2:33:15 PM	25437
3+4-Methylphenol	ND	2.3	10		µg/L	1	5/24/2016 2:33:15 PM	25437
N-Nitrosodi-n-propylamine	ND	2.4	10		µg/L	1	5/24/2016 2:33:15 PM	25437
N-Nitrosodimethylamine	ND	2.2	10		µg/L	1	5/24/2016 2:33:15 PM	25437
N-Nitrosodiphenylamine	ND	2.3	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Naphthalene	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
2-Nitroaniline	ND	2.8	10		µg/L	1	5/24/2016 2:33:15 PM	25437
3-Nitroaniline	ND	2.9	10		µg/L	1	5/24/2016 2:33:15 PM	25437
4-Nitroaniline	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Nitrobenzene	ND	2.8	10		µg/L	1	5/24/2016 2:33:15 PM	25437
2-Nitrophenol	ND	2.4	10		µg/L	1	5/24/2016 2:33:15 PM	25437
4-Nitrophenol	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Pentachlorophenol	ND	2.3	20		µg/L	1	5/24/2016 2:33:15 PM	25437
Phenanthrene	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Phenol	ND	2.0	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Pyrene	ND	3.1	10		µg/L	1	5/24/2016 2:33:15 PM	25437
Pyridine	ND	2.2	10		µg/L	1	5/24/2016 2:33:15 PM	25437
1,2,4-Trichlorobenzene	ND	2.6	10		µg/L	1	5/24/2016 2:33:15 PM	25437
2,4,5-Trichlorophenol	ND	2.2	10		µg/L	1	5/24/2016 2:33:15 PM	25437

Refer to the QC Summary report and 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 1605873

Date Reported: 6/20/2016

CLIENT: Western Refining Company

Client Sample ID: EB051716

Project: SWMU 10

Collection Date: 5/17/2016 5:00:00 PM

Lab ID: 1605873-001

Matrix: AQUEOUS

Received Date: 5/18/2016 4:00:00 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	5/24/2016 2:33:15 PM	25437
Surr: 2-Fluorophenol	54.5	0	15-123		%Rec	1	5/24/2016 2:33:15 PM	25437
Surr: Phenol-d5	41.0	0	4.13-124		%Rec	1	5/24/2016 2:33:15 PM	25437
Surr: 2,4,6-Tribromophenol	72.7	0	18.4-134		%Rec	1	5/24/2016 2:33:15 PM	25437
Surr: Nitrobenzene-d5	73.3	0	28.8-134		%Rec	1	5/24/2016 2:33:15 PM	25437
Surr: 2-Fluorobiphenyl	67.2	0	35.9-125		%Rec	1	5/24/2016 2:33:15 PM	25437
Surr: 4-Terphenyl-d14	40.0	0	15-146		%Rec	1	5/24/2016 2:33:15 PM	25437
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Benzene	ND	0.096	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Toluene	ND	0.12	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Ethylbenzene	ND	0.11	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Methyl tert-butyl ether (MTBE)	ND	0.21	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,2,4-Trimethylbenzene	ND	0.11	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,3,5-Trimethylbenzene	ND	0.12	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,2-Dichloroethane (EDC)	ND	0.12	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,2-Dibromoethane (EDB)	ND	0.11	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Naphthalene	ND	0.093	2.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1-Methylnaphthalene	ND	0.20	4.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
2-Methylnaphthalene	ND	0.16	4.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Acetone	5.6	4.9	10	J	µg/L	1	5/26/2016 3:18:07 PM	A34513
Bromobenzene	ND	0.098	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Bromodichloromethane	ND	0.14	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Bromoform	ND	0.10	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Bromomethane	ND	0.78	3.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
2-Butanone	ND	0.74	10		µg/L	1	5/26/2016 3:18:07 PM	A34513
Carbon disulfide	ND	0.60	10		µg/L	1	5/26/2016 3:18:07 PM	A34513
Carbon Tetrachloride	ND	0.11	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Chlorobenzene	ND	0.11	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Chloroethane	ND	0.19	2.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Chloroform	ND	0.089	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Chloromethane	ND	0.21	3.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
2-Chlorotoluene	ND	0.40	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
4-Chlorotoluene	ND	0.13	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
cis-1,2-DCE	ND	0.12	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
cis-1,3-Dichloropropene	ND	0.11	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,2-Dibromo-3-chloropropane	ND	0.23	2.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Dibromochloromethane	ND	0.087	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Dibromomethane	ND	0.12	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,2-Dichlorobenzene	ND	0.40	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513

Refer to the QC Summary report and 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 1605873

Date Reported: 6/20/2016

CLIENT: Western Refining Company

Client Sample ID: EB051716

Project: SWMU 10

Collection Date: 5/17/2016 5:00:00 PM

Lab ID: 1605873-001

Matrix: AQUEOUS

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
1,3-Dichlorobenzene	ND	0.14	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,4-Dichlorobenzene	ND	0.14	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Dichlorodifluoromethane	ND	0.36	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,1-Dichloroethane	ND	0.11	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,1-Dichloroethene	ND	0.11	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,2-Dichloropropane	ND	0.11	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,3-Dichloropropane	ND	0.16	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
2,2-Dichloropropane	ND	0.17	2.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,1-Dichloropropene	ND	0.13	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Hexachlorobutadiene	ND	0.20	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
2-Hexanone	ND	0.84	10		µg/L	1	5/26/2016 3:18:07 PM	A34513
Isopropylbenzene	ND	0.10	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
4-Isopropyltoluene	ND	0.14	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
4-Methyl-2-pentanone	ND	0.43	10		µg/L	1	5/26/2016 3:18:07 PM	A34513
Methylene Chloride	ND	0.19	3.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
n-Butylbenzene	ND	0.16	3.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
n-Propylbenzene	ND	0.13	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
sec-Butylbenzene	ND	0.12	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Styrene	ND	0.11	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
tert-Butylbenzene	ND	0.12	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,1,1,2-Tetrachloroethane	ND	0.11	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,1,2,2-Tetrachloroethane	ND	0.13	2.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Tetrachloroethene (PCE)	ND	0.15	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
trans-1,2-DCE	ND	0.40	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
trans-1,3-Dichloropropene	ND	0.10	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,2,3-Trichlorobenzene	ND	0.11	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,2,4-Trichlorobenzene	ND	0.13	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,1,1-Trichloroethane	ND	0.091	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,1,2-Trichloroethane	ND	0.13	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Trichloroethene (TCE)	ND	0.18	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Trichlorofluoromethane	ND	0.20	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
1,2,3-Trichloropropane	ND	0.20	2.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Vinyl chloride	ND	0.20	1.0		µg/L	1	5/26/2016 3:18:07 PM	A34513
Xylenes, Total	ND	0.37	1.5		µg/L	1	5/26/2016 3:18:07 PM	A34513
Surr: 1,2-Dichloroethane-d4	96.7	0	70-130		%Rec	1	5/26/2016 3:18:07 PM	A34513
Surr: 4-Bromofluorobenzene	108	0	70-130		%Rec	1	5/26/2016 3:18:07 PM	A34513
Surr: Dibromofluoromethane	103	0	70-130		%Rec	1	5/26/2016 3:18:07 PM	A34513
Surr: Toluene-d8	102	0	70-130		%Rec	1	5/26/2016 3:18:07 PM	A34513

EPA METHOD 8015D: GASOLINE RANGE

Analyst: DJF

Refer to the QC Summary report and 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 1605873

Date Reported: 6/20/2016

CLIENT: Western Refining Company

Client Sample ID: EB051716

Project: SWMU 10

Collection Date: 5/17/2016 5:00:00 PM

Lab ID: 1605873-001

Matrix: AQUEOUS

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE							Analyst: DJF	
Gasoline Range Organics (GRO)	ND	0.015	0.050		mg/L	1	5/26/2016 3:18:07 PM	C34513
Surr: BFB	99.9	0	70-130		%Rec	1	5/26/2016 3:18:07 PM	C34513

Refer to the QC Summary report and 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

1605873-001H EB051716

Collected date/time: 05/17/16 17:00

SAMPLE RESULTS - 01

L836954

ONE LAB. NATIONWIDE.



Wet Chemistry by Method 4500CN E-2011

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Cyanide	0.00294	<u>J P1</u>	0.00180	0.00500	1	05/26/2016 15:27	<u>WG875229</u>

¹ Op² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Method Blank (MB)

(MB) R3140016-1 05/26/16 14:34

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Cyanide	U		0.00180	0.00500

L836171-02 Original Sample (OS) • Duplicate (DUP)

(OS) L836171-02 05/26/16 14:40 • (DUP) R3140016-4 05/26/16 14:41

Analyte	Original Result mg/l	DUP Result mg/l	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	0.000		20

L836954-01 Original Sample (OS) • Duplicate (DUP)

(OS) L836954-01 05/26/16 15:27 • (DUP) R3140016-8 05/26/16 15:29

Analyte	Original Result mg/l	DUP Result mg/l	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	0.00294	ND	32.0	J.P1	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3140016-2 05/26/16 14:35 • (LCSD) R3140016-3 05/26/16 14:36

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 %
Cyanide	0.100	0.107	0.106	107	106	90.0-110			1.00	20

L836180-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L836180-02 05/26/16 14:42 • (MS) R3140016-5 05/26/16 14:43 • (MSD) R3140016-6 05/26/16 14:46

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 %
Cyanide	0.200	ND	0.186	0.201	93.0	101	1	90.0-110			8.00	20



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

J	The identification of the analyte is acceptable; the reported value is an estimate.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

Cr

²Tc³Ss⁴Cn⁵Sr⁶Qc⁷Gl⁸Al⁹Sc

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1605873

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-B	SampType:	MBLK	TestCode:	EPA Method 200.7: Metals					
Client ID:	PBW	Batch ID:	B34409	RunNo:	34409					
Prep Date:		Analysis Date:	5/23/2016	SeqNo:	1060912	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: Metals					
Client ID:	LCSW	Batch ID:	B34409	RunNo:	34409					
Prep Date:		Analysis Date:	5/23/2016	SeqNo:	1060916	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	0.51	0.0020	0.5000	0	103	85	115			
Cadmium	0.49	0.0020	0.5000	0	98.0	85	115			
Chromium	0.48	0.0060	0.5000	0	96.3	85	115			
Cobalt	0.47	0.0060	0.5000	0	93.4	85	115			
Iron	0.49	0.020	0.5000	0	97.5	85	115			
Manganese	0.48	0.0020	0.5000	0	95.8	85	115			
Nickel	0.46	0.010	0.5000	0	92.0	85	115			
Silver	0.098	0.0050	0.1000	0	98.4	85	115			
Vanadium	0.51	0.050	0.5000	0	102	85	115			
Zinc	0.49	0.010	0.5000	0	98.0	85	115			

Sample ID	LLCS-B	SampType:	LCSLL	TestCode:	EPA Method 200.7: Metals					
Client ID:	BatchQC	Batch ID:	B34409	RunNo:	34409					
Prep Date:		Analysis Date:	5/23/2016	SeqNo:	1060917	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0028	0.0020	0.002000	0	138	50	150			
Beryllium	0.0021	0.0020	0.002000	0	107	50	150			
Cadmium	0.0016	0.0020	0.002000	0	81.0	50	150			J
Chromium	0.0059	0.0060	0.006000	0	99.0	50	150			J
Cobalt	0.0072	0.0060	0.006000	0	121	50	150			
Iron	0.022	0.020	0.02000	0	109	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#: 1605873

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	LLLCS-B		SampType: LCSLL			TestCode: EPA Method 200.7: Metals				
Client ID:	BatchQC		Batch ID: B34409			RunNo: 34409				
Prep Date:			Analysis Date: 5/23/2016			SeqNo: 1060917		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	105	50	150			
Nickel	0.0057	0.010	0.005000	0	113	50	150			J
Silver	0.0051	0.0050	0.005000	0	102	50	150			
Vanadium	0.010	0.050	0.01000	0	105	50	150			J
Zinc	0.0062	0.010	0.005000	0	123	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#: 1605873

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-A	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	A34409	RunNo:	34409					
Prep Date:		Analysis Date:	5/23/2016	SeqNo:	1060909	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-A	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	A34409	RunNo:	34409					
Prep Date:		Analysis Date:	5/23/2016	SeqNo:	1060910	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	105	85	115			
Cadmium	0.51	0.0020	0.5000	0	101	85	115			
Chromium	0.50	0.0060	0.5000	0	99.5	85	115			
Cobalt	0.48	0.0060	0.5000	0	96.2	85	115			
Iron	0.50	0.020	0.5000	0	100	85	115			
Manganese	0.49	0.0020	0.5000	0	98.4	85	115			
Nickel	0.47	0.010	0.5000	0	94.8	85	115			
Silver	0.10	0.0050	0.1000	0	101	85	115			
Vanadium	0.53	0.050	0.5000	0	105	85	115			
Zinc	0.51	0.010	0.5000	0	101	85	115			

Sample ID	LLCS-A	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	A34409	RunNo:	34409					
Prep Date:		Analysis Date:	5/23/2016	SeqNo:	1060911	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	0.0018	0.0020	0.002000	0	89.0	50	150			J
Beryllium	0.0019	0.0020	0.002000	0	94.0	50	150			J
Cadmium	0.0017	0.0020	0.002000	0	87.0	50	150			J
Chromium	0.0058	0.0060	0.006000	0	96.3	50	150			J
Cobalt	0.0064	0.0060	0.006000	0	106	50	150			
Iron	0.023	0.020	0.02000	0	116	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#: 1605873

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	LLLCS-A		SampType: LCSLL			TestCode: EPA Method 200.7: Dissolved Metals				
Client ID:	BatchQC		Batch ID: A34409			RunNo: 34409				
Prep Date:			Analysis Date: 5/23/2016			SeqNo: 1060911		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	103	50	150			
Nickel	0.0055	0.010	0.005000	0	110	50	150			J
Silver	0.0049	0.0050	0.005000	0	97.8	50	150			J
Vanadium	0.0099	0.050	0.01000	0	98.9	50	150			J
Zinc	0.0048	0.010	0.005000	0	95.4	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#: 1605873

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Metals					
Client ID:	LCSW		Batch ID: A34426		RunNo: 34426					
Prep Date:			Analysis Date: 5/23/2016		SeqNo: 1061483		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	100	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.025	0.0010	0.02500	0	101	85	115			

Sample ID	LCSLL		SampType: LCSLL		TestCode: EPA 200.8: Metals					
Client ID:	BatchQC		Batch ID: A34426		RunNo: 34426					
Prep Date:			Analysis Date: 5/23/2016		SeqNo: 1061484		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	0.00096	0.0010	0.001000	0	95.6	50	150			J
Lead	0.00053	0.00050	0.0005000	0	105	50	150			
Selenium	0.00094	0.0010	0.001000	0	94.3	50	150			J

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Metals					
Client ID:	PBW	Batch ID: A34426			RunNo: 34426					
Prep Date:		Analysis Date: 5/23/2016			SeqNo: 1061486		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#: 1605873

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS		SampType: LCS		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	LCSW		Batch ID: B34426		RunNo: 34426					
Prep Date:			Analysis Date: 5/23/2016		SeqNo: 1061592		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	100	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			
Selenium	0.025	0.0010	0.02500	0	101	85	115			

Sample ID	LCSLL		SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals					
Client ID:	BatchQC		Batch ID: B34426		RunNo: 34426					
Prep Date:			Analysis Date: 5/23/2016		SeqNo: 1061596		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	0.00096	0.0010	0.001000	0	95.6	50	150			J
Lead	0.00053	0.00050	0.0005000	0	105	50	150			
Selenium	0.00094	0.0010	0.001000	0	94.3	50	150			J

Sample ID	MB	SampType: MBLK			TestCode: EPA 200.8: Dissolved Metals					
Client ID:	PBW	Batch ID: B34426			RunNo: 34426					
Prep Date:		Analysis Date: 5/23/2016			SeqNo: 1061600		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#: 1605873

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-25455		SampType:	MBLK		TestCode:	EPA Method 245.1: Mercury				
Client ID:	PBW		Batch ID:	25455		RunNo:	34451				
Prep Date:	5/23/2016		Analysis Date:	5/24/2016		SeqNo:	1062360		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	ND	0.00020									

Sample ID	LCS-25455			SampType:	LCS		TestCode:	EPA Method 245.1: Mercury			
Client ID:	LCSW			Batch ID:	25455		RunNo:	34451			
Prep Date:	5/23/2016			Analysis Date:	5/24/2016		SeqNo:	1062361		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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1605873

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID MB	SampType: mblk		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R34382		RunNo: 34382							
Prep Date:	Analysis Date: 5/19/2016		SeqNo: 1060112		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: R34382		RunNo: 34382							
Prep Date:	Analysis Date: 5/19/2016		SeqNo: 1060113		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	4.6	0.50	5.000	0	92.9	90	110			
Sulfate	9.6	0.50	10.00	0	96.1	90	110			

Sample ID 1605873-001EMS	SampType: ms		TestCode: EPA Method 300.0: Anions							
Client ID: EB051716	Batch ID: R34382		RunNo: 34382							
Prep Date:	Analysis Date: 5/19/2016		SeqNo: 1060119		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	71.4	120			
Chloride	4.6	0.50	5.000	0	92.4	84	116			
Sulfate	9.5	0.50	10.00	0	95.4	87	116			

Sample ID 1605873-001EMSD	SampType: msd		TestCode: EPA Method 300.0: Anions							
Client ID: EB051716	Batch ID: R34382		RunNo: 34382							
Prep Date:	Analysis Date: 5/19/2016		SeqNo: 1060120		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	71.4	120	1.33	20	
Chloride	4.6	0.50	5.000	0	93.0	84	116	0.673	20	
Sulfate	9.6	0.50	10.00	0	96.0	87	116	0.604	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#: 1605873

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS-25434		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	LCSW		Batch ID: 25434		RunNo: 34407					
Prep Date:	5/23/2016		Analysis Date: 5/23/2016		SeqNo: 1060958		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.2	1.0	5.000	0	105	71.3	139			
Surr: DNOP	0.53		0.5000		107	70	141			

Sample ID	MB-25434		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range					
Client ID:	PBW		Batch ID: 25434		RunNo: 34407					
Prep Date:	5/23/2016		Analysis Date: 5/23/2016		SeqNo: 1060959		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.1		1.000		113	70	141			

Qualifiers:

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

B Analyte detected in the 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#: 1605873

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	rb1	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	A34513	RunNo:	34513					
Prep Date:		Analysis Date:	5/26/2016	SeqNo:	1064513	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1605873

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID rb1	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES						
Client ID: PBW	Batch ID: A34513			RunNo: 34513						
Prep Date:	Analysis Date: 5/26/2016			SeqNo: 1064513		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	0.45	3.0								J
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	9.6		10.00		96.2	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		109	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID 100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES						
Client ID: LCSW	Batch ID: A34513			RunNo: 34513						
Prep Date:	Analysis Date: 5/26/2016			SeqNo: 1064514		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.7	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Chlorobenzene	20	1.0	20.00	0	99.4	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	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1605873

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: A34513			RunNo: 34513					
Prep Date:	Analysis Date: 5/26/2016			SeqNo: 1064514		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	20	1.0	20.00	0	101	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	90.3	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		99.6	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		112	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	11		10.00		106	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#: 1605873

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-25437	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	25437	RunNo:	34450					
Prep Date:	5/23/2016	Analysis Date:	5/24/2016	SeqNo:	1062341	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	6.7	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	3.8	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	4.8	10								J
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#: 1605873

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-25437		SampType:	MBLK		TestCode:	EPA Method 8270C: Semivolatiles			
Client ID:	PBW		Batch ID:	25437		RunNo:	34450			
Prep Date:	5/23/2016		Analysis Date:	5/24/2016		SeqNo:	1062341	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		57.6	15	123			
Surr: Phenol-d5	87		200.0		43.6	4.13	124			
Surr: 2,4,6-Tribromophenol	160		200.0		79.7	18.4	134			
Surr: Nitrobenzene-d5	75		100.0		74.9	28.8	134			
Surr: 2-Fluorobiphenyl	71		100.0		71.3	35.9	125			
Surr: 4-Terphenyl-d14	65		100.0		65.5	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#: 1605873

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-25437		SampType: LCS			TestCode: EPA Method 8270C: Semivolatiles				
Client ID:	LCSW		Batch ID: 25437			RunNo: 34450				
Prep Date:	5/23/2016		Analysis Date: 5/24/2016			SeqNo: 1062342		Units: µg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	84	10	100.0	0	83.7	35	113			
4-Chloro-3-methylphenol	130	10	200.0	0	66.0	40.7	114			
2-Chlorophenol	130	10	200.0	0	64.4	37.6	113			
1,4-Dichlorobenzene	69	10	100.0	0	68.7	37.7	106			
2,4-Dinitrotoluene	70	10	100.0	0	70.1	37	91			
N-Nitrosodi-n-propylamine	74	10	100.0	0	74.5	45.4	105			
4-Nitrophenol	73	10	200.0	0	36.4	33.4	104			
Pentachlorophenol	120	20	200.0	0	58.0	29.5	94.9			
Phenol	77	10	200.0	0	38.4	30.6	119			
Pyrene	82	10	100.0	0	82.0	26.2	120			
1,2,4-Trichlorobenzene	82	10	100.0	0	81.6	39.9	125			
Surr: 2-Fluorophenol	95		200.0		47.6	15	123			
Surr: Phenol-d5	75		200.0		37.5	4.13	124			
Surr: 2,4,6-Tribromophenol	150		200.0		74.3	18.4	134			
Surr: Nitrobenzene-d5	68		100.0		68.2	28.8	134			
Surr: 2-Fluorobiphenyl	70		100.0		70.0	35.9	125			
Surr: 4-Terphenyl-d14	61		100.0		61.5	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#: 1605873

20-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID rb1	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBW	Batch ID: C34513			RunNo: 34513						
Prep Date:	Analysis Date: 5/26/2016			SeqNo: 1064532		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	9.7		10.00		96.9	70	130			

Sample ID 2.5ug gro lcs	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSW	Batch ID: C34513			RunNo: 34513						
Prep Date:	Analysis Date: 5/26/2016			SeqNo: 1064533		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.52	0.050	0.5000	0	103	75.4	118			
Surr: BFB	10		10.00		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



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: 1605873

RcptNo: 1

Received by/date:

SA 05/18/16

Logged By: Lindsay Mangin

5/18/2016 4:00:00 PM

Lindsay Mangin

Completed By: Lindsay Mangin

5/19/2016 6:44:35 AM

Lindsay Mangin

Reviewed By:

SA 05/19/16

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?

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:

SA

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

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

June 28, 2016

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

RE: SWMU 10

OrderNo.: 1605874

Dear Ed Riege:

Hall Environmental Analysis Laboratory received 3 sample(s) on 5/18/2016 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'.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1605874

Date Reported: 6/28/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-18 (2-2.5')

Project: SWMU 10

Collection Date: 5/16/2016 4:20:00 PM

Lab ID: 1605874-001

Matrix: SOIL

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	ND	4.3	12		mg/Kg-dr	1	5/24/2016 9:49:27 AM	25449
Motor Oil Range Organics (MRO)	ND	60	60		mg/Kg-dr	1	5/24/2016 9:49:27 AM	25449
Surr: DNOP	98.0	0	70-130		%Rec	1	5/24/2016 9:49:27 AM	25449
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	17	1.0	1.0		wt%	1	5/23/2016	R34494
EPA METHOD 7471: MERCURY							Analyst: pmf	
Mercury	0.0044	0.00068	0.040	J	mg/Kg-dr	1	5/24/2016 12:42:15 PM	25448
EPA METHOD 6010B: SOIL METALS							Analyst: MED	
Antimony	2.7	1.4	3.0	J	mg/Kg-dr	1	5/26/2016 3:03:23 PM	25447
Arsenic	1.8	0.87	3.0	J	mg/Kg-dr	1	5/26/2016 3:03:23 PM	25447
Barium	130	0.12	0.24		mg/Kg-dr	2	6/1/2016 12:19:23 PM	25586
Beryllium	1.1	0.0055	0.18		mg/Kg-dr	1	5/26/2016 3:03:23 PM	25447
Cadmium	ND	0.076	0.12		mg/Kg-dr	1	5/26/2016 3:03:23 PM	25447
Chromium	8.8	0.15	0.36		mg/Kg-dr	1	5/26/2016 3:03:23 PM	25447
Cobalt	4.7	0.045	0.36		mg/Kg-dr	1	5/26/2016 3:03:23 PM	25447
Iron	20000	120	310		mg/Kg-dr	100	6/16/2016 8:20:52 AM	25586
Lead	5.2	0.21	0.30		mg/Kg-dr	1	5/26/2016 3:03:23 PM	25447
Manganese	200	0.053	0.12		mg/Kg-dr	1	5/26/2016 3:03:23 PM	25447
Nickel	8.7	0.14	0.60		mg/Kg-dr	1	5/26/2016 3:03:23 PM	25447
Selenium	ND	1.3	3.0		mg/Kg-dr	1	5/26/2016 3:03:23 PM	25447
Silver	ND	0.038	0.30		mg/Kg-dr	1	5/26/2016 3:03:23 PM	25447
Vanadium	17	0.042	3.0		mg/Kg-dr	1	5/26/2016 3:03:23 PM	25447
Zinc	15	0.68	3.0		mg/Kg-dr	1	5/26/2016 3:03:23 PM	25447
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Acenaphthylene	ND	0.099	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Aniline	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Anthracene	ND	0.080	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Azobenzene	ND	0.15	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Benz(a)anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Benzo(a)pyrene	ND	0.092	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Benzo(g,h,i)perylene	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Benzo(k)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Benzoic acid	ND	0.10	0.61		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Benzyl alcohol	ND	0.095	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Bis(2-chloroethoxy)methane	ND	0.13	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469

Refer to the QC Summary report and 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 10-18 (2-2.5')

Project: SWMU 10

Collection Date: 5/16/2016 4:20:00 PM

Lab ID: 1605874-001

Matrix: SOIL

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Bis(2-chloroethyl)ether	ND	0.089	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Bis(2-chloroisopropyl)ether	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Bis(2-ethylhexyl)phthalate	ND	0.099	0.61		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
4-Bromophenyl phenyl ether	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Butyl benzyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Carbazole	ND	0.082	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
4-Chloro-3-methylphenol	ND	0.14	0.61		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
4-Chloroaniline	ND	0.13	0.61		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
2-Chloronaphthalene	ND	0.095	0.30		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
2-Chlorophenol	ND	0.096	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
4-Chlorophenyl phenyl ether	ND	0.14	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Chrysene	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Di-n-butyl phthalate	0.14	0.091	0.49	J	mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Di-n-octyl phthalate	ND	0.10	0.49		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Dibenz(a,h)anthracene	ND	0.098	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Dibenzofuran	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
1,2-Dichlorobenzene	ND	0.093	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
1,3-Dichlorobenzene	ND	0.094	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
1,4-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
3,3'-Dichlorobenzidine	ND	0.089	0.30		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Diethyl phthalate	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Dimethyl phthalate	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
2,4-Dichlorophenol	ND	0.11	0.49		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
2,4-Dimethylphenol	ND	0.13	0.36		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
4,6-Dinitro-2-methylphenol	ND	0.073	0.49		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
2,4-Dinitrophenol	ND	0.080	0.61		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
2,4-Dinitrotoluene	ND	0.11	0.61		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
2,6-Dinitrotoluene	ND	0.13	0.61		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Fluoranthene	ND	0.070	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Fluorene	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Hexachlorobenzene	ND	0.096	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Hexachlorobutadiene	ND	0.14	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Hexachlorocyclopentadiene	ND	0.14	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Hexachloroethane	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Indeno(1,2,3-cd)pyrene	ND	0.095	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
1-Methylnaphthalene	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
2-Methylnaphthalene	ND	0.14	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
2-Methylphenol	ND	0.10	0.49		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
3+4-Methylphenol	ND	0.088	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469

Refer to the QC Summary report and 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 1605874

Date Reported: 6/28/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-18 (2-2.5')

Project: SWMU 10

Collection Date: 5/16/2016 4:20:00 PM

Lab ID: 1605874-001

Matrix: SOIL

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
N-Nitrosodiphenylamine	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Naphthalene	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
4-Nitroaniline	ND	0.085	0.49		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Nitrobenzene	ND	0.13	0.49		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
2-Nitrophenol	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
4-Nitrophenol	ND	0.092	0.30		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Pentachlorophenol	ND	0.078	0.49		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Phenanthrene	ND	0.082	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Phenol	ND	0.091	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Pyrene	ND	0.092	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Pyridine	ND	0.096	0.49		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
1,2,4-Trichlorobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
2,4,5-Trichlorophenol	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
2,4,6-Trichlorophenol	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 1:49:34 PM	25469
Surr: 2-Fluorophenol	58.0	0	28.3-102		%Rec	1	5/25/2016 1:49:34 PM	25469
Surr: Phenol-d5	64.0	0	35.7-103		%Rec	1	5/25/2016 1:49:34 PM	25469
Surr: 2,4,6-Tribromophenol	77.8	0	35.2-108		%Rec	1	5/25/2016 1:49:34 PM	25469
Surr: Nitrobenzene-d5	63.7		24-118		%Rec	1	5/25/2016 1:49:34 PM	25469
Surr: 2-Fluorobiphenyl	69.6		35.4-111		%Rec	1	5/25/2016 1:49:34 PM	25469
Surr: 4-Terphenyl-d14	54.1		15-91.7		%Rec	1	5/25/2016 1:49:34 PM	25469
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Benzene	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Toluene	0.952	0.268	2.21	J	µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Ethylbenzene	ND	0.297	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Methyl tert-butyl ether (MTBE)	ND	0.372	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,2,4-Trimethylbenzene	ND	0.375	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,3,5-Trimethylbenzene	ND	0.365	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,2-Dichloroethane (EDC)	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,2-Dibromoethane (EDB)	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Naphthalene	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1-Methylnaphthalene	ND	0.252	4.43		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
2-Methylnaphthalene	ND	0.583	4.43		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Acetone	8.98	0.655	11.1	J	µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Bromobenzene	ND	0.225	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Bromodichloromethane	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Bromoform	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468

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 10-18 (2-2.5')**Project:** SWMU 10**Collection Date:** 5/16/2016 4:20:00 PM**Lab ID:** 1605874-001**Matrix:** SOIL**Received Date:** 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Bromomethane	ND	0.398	3.32		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
2-Butanone	ND	0.798	11.1		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Carbon disulfide	ND	0.819	11.1		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Carbon tetrachloride	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Chlorobenzene	ND	0.254	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Chloroethane	ND	0.409	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Chloroform	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Chloromethane	ND	0.561	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
2-Chlorotoluene	ND	0.377	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
4-Chlorotoluene	ND	0.368	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
cis-1,2-DCE	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
cis-1,3-Dichloropropene	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,2-Dibromo-3-chloropropane	ND	0.236	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Dibromochloromethane	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Dibromomethane	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,2-Dichlorobenzene	ND	0.322	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,3-Dichlorobenzene	ND	0.409	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,4-Dichlorobenzene	ND	0.414	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Dichlorodifluoromethane	ND	1.29	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,1-Dichloroethane	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,1-Dichloroethene	ND	0.362	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,2-Dichloropropane	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,3-Dichloropropane	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
2,2-Dichloropropane	ND	0.280	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,1-Dichloropropene	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Hexachlorobutadiene	ND	0.505	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
2-Hexanone	ND	0.551	11.1		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Isopropylbenzene	ND	0.279	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
4-Isopropyltoluene	ND	0.415	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
4-Methyl-2-pentanone	ND	4.43	11.1		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Methylene chloride	ND	2.21	3.32		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
n-Butylbenzene	ND	0.539	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
n-Propylbenzene	ND	0.396	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
sec-Butylbenzene	ND	0.393	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Styrene	ND	0.283	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
tert-Butylbenzene	ND	0.323	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,1,1,2-Tetrachloroethane	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,1,2,2-Tetrachloroethane	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Tetrachloroethene (PCE)	ND	0.291	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468

Refer to the QC Summary report and 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 1605874

Date Reported: 6/28/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-18 (2-2.5')

Project: SWMU 10

Collection Date: 5/16/2016 4:20:00 PM

Lab ID: 1605874-001

Matrix: SOIL

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
trans-1,2-DCE	ND	0.224	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
trans-1,3-Dichloropropene	ND	0.268	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,2,3-Trichlorobenzene	ND	0.536	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,2,4-Trichlorobenzene	ND	0.671	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,1,1-Trichloroethane	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,1,2-Trichloroethane	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Trichloroethene (TCE)	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Trichlorofluoromethane	ND	0.278	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
1,2,3-Trichloropropane	ND	2.21	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Vinyl chloride	ND	0.582	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Xylenes, Total	ND	0.882	2.21		µg/Kg-dry	1	5/25/2016 2:28:00 PM	25468
Surr: 1,2-Dichloroethane-d4	102	0	70-130		%Rec	1	5/25/2016 2:28:00 PM	25468
Surr: 4-Bromofluorobenzene	99.5	0	70-130		%Rec	1	5/25/2016 2:28:00 PM	25468
Surr: Dibromofluoromethane	93.3	0	70-130		%Rec	1	5/25/2016 2:28:00 PM	25468
Surr: Toluene-d8	96.1	0	70-130		%Rec	1	5/25/2016 2:28:00 PM	25468
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF	
Gasoline Range Organics (GRO)	1.5	0.53	3.5	J	mg/Kg-dr	1	5/23/2016 5:28:58 PM	C34413
Surr: BFB	96.4	0	70-130		%Rec	1	5/23/2016 5:28:58 PM	C34413

Refer to the QC Summary report and 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 10-18 (8-10')

Project: SWMU 10

Collection Date: 5/16/2016 4:30:00 PM

Lab ID: 1605874-002

Matrix: SOIL

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	11	4.2	12	J	mg/Kg-dr	1	5/24/2016 10:54:40 AM	25449
Motor Oil Range Organics (MRO)	ND	58	58		mg/Kg-dr	1	5/24/2016 10:54:40 AM	25449
Surr: DNOP	100	0	70-130		%Rec	1	5/24/2016 10:54:40 AM	25449
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	16	1.0	1.0		wt%	1	5/23/2016	R34494
EPA METHOD 7471: MERCURY							Analyst: pmf	
Mercury	0.0052	0.00067	0.039	J	mg/Kg-dr	1	5/24/2016 12:51:15 PM	25448
EPA METHOD 6010B: SOIL METALS							Analyst: MED	
Antimony	ND	2.8	5.9		mg/Kg-dr	2	5/24/2016 2:57:37 PM	25447
Arsenic	2.2	1.7	5.9	J	mg/Kg-dr	2	5/24/2016 2:57:37 PM	25447
Barium	170	0.28	0.59		mg/Kg-dr	5	5/26/2016 3:12:16 PM	25447
Beryllium	1.1	0.011	0.35		mg/Kg-dr	2	5/24/2016 2:57:37 PM	25447
Cadmium	ND	0.15	0.23		mg/Kg-dr	2	5/24/2016 2:57:37 PM	25447
Chromium	11	0.29	0.70		mg/Kg-dr	2	5/24/2016 2:57:37 PM	25447
Cobalt	6.4	0.089	0.70		mg/Kg-dr	2	5/24/2016 2:57:37 PM	25447
Iron	15000	120	310		mg/Kg-dr	100	6/16/2016 8:21:59 AM	25586
Lead	4.9	0.41	0.59		mg/Kg-dr	2	5/24/2016 2:57:37 PM	25447
Manganese	700	0.26	0.59		mg/Kg-dr	5	5/26/2016 3:12:16 PM	25447
Nickel	12	0.27	1.2		mg/Kg-dr	2	5/24/2016 2:57:37 PM	25447
Selenium	ND	2.6	5.9		mg/Kg-dr	2	5/24/2016 2:57:37 PM	25447
Silver	ND	0.074	0.59		mg/Kg-dr	2	5/24/2016 2:57:37 PM	25447
Vanadium	19	0.082	5.9		mg/Kg-dr	2	5/24/2016 2:57:37 PM	25447
Zinc	21	1.3	5.9		mg/Kg-dr	2	5/24/2016 2:57:37 PM	25447
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Acenaphthylene	ND	0.095	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Aniline	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Anthracene	ND	0.078	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Azobenzene	ND	0.14	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Benz(a)anthracene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Benzo(a)pyrene	ND	0.089	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Benzo(b)fluoranthene	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Benzo(g,h,i)perylene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Benzo(k)fluoranthene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Benzoic acid	ND	0.097	0.59		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Benzyl alcohol	ND	0.092	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Bis(2-chloroethoxy)methane	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469

Refer to the QC Summary report and 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 1605874

Date Reported: 6/28/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-18 (8-10')

Project: SWMU 10

Collection Date: 5/16/2016 4:30:00 PM

Lab ID: 1605874-002

Matrix: SOIL

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Bis(2-chloroethyl)ether	ND	0.086	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Bis(2-chloroisopropyl)ether	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Bis(2-ethylhexyl)phthalate	ND	0.095	0.59		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
4-Bromophenyl phenyl ether	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Butyl benzyl phthalate	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Carbazole	ND	0.079	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
4-Chloro-3-methylphenol	ND	0.14	0.59		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
4-Chloroaniline	ND	0.13	0.59		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
2-Chloronaphthalene	ND	0.092	0.29		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
2-Chlorophenol	ND	0.092	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
4-Chlorophenyl phenyl ether	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Chrysene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Di-n-butyl phthalate	0.089	0.088	0.47	J	mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Di-n-octyl phthalate	ND	0.10	0.47		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Dibenz(a,h)anthracene	ND	0.095	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
1,2-Dichlorobenzene	ND	0.090	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
1,3-Dichlorobenzene	ND	0.091	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
1,4-Dichlorobenzene	ND	0.099	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
3,3'-Dichlorobenzidine	ND	0.086	0.29		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Diethyl phthalate	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
2,4-Dichlorophenol	ND	0.11	0.47		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
2,4-Dimethylphenol	ND	0.13	0.35		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
4,6-Dinitro-2-methylphenol	ND	0.071	0.47		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
2,4-Dinitrophenol	ND	0.078	0.59		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
2,4-Dinitrotoluene	ND	0.10	0.59		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
2,6-Dinitrotoluene	ND	0.12	0.59		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Fluoranthene	ND	0.067	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Fluorene	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Hexachlorobenzene	ND	0.092	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Hexachlorobutadiene	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Hexachlorocyclopentadiene	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Hexachloroethane	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Indeno(1,2,3-cd)pyrene	ND	0.091	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
1-Methylnaphthalene	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
2-Methylnaphthalene	ND	0.14	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
2-Methylphenol	ND	0.098	0.47		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
3+4-Methylphenol	ND	0.085	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469

Refer to the QC Summary report and 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 1605874

Date Reported: 6/28/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-18 (8-10')

Project: SWMU 10

Collection Date: 5/16/2016 4:30:00 PM

Lab ID: 1605874-002

Matrix: SOIL

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
N-Nitrosodi-n-propylamine	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
N-Nitrosodiphenylamine	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
2-Nitroaniline	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
3-Nitroaniline	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
4-Nitroaniline	ND	0.083	0.47		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Nitrobenzene	ND	0.12	0.47		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
2-Nitrophenol	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
4-Nitrophenol	ND	0.089	0.29		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Pentachlorophenol	ND	0.075	0.47		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Phenanthrene	ND	0.080	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Phenol	ND	0.088	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Pyrene	ND	0.089	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Pyridine	ND	0.093	0.47		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
1,2,4-Trichlorobenzene	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
2,4,5-Trichlorophenol	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
2,4,6-Trichlorophenol	ND	0.097	0.23		mg/Kg-dr	1	5/25/2016 3:20:41 PM	25469
Surr: 2-Fluorophenol	52.9	0	28.3-102		%Rec	1	5/25/2016 3:20:41 PM	25469
Surr: Phenol-d5	54.3	0	35.7-103		%Rec	1	5/25/2016 3:20:41 PM	25469
Surr: 2,4,6-Tribromophenol	55.2	0	35.2-108		%Rec	1	5/25/2016 3:20:41 PM	25469
Surr: Nitrobenzene-d5	55.9		24-118		%Rec	1	5/25/2016 3:20:41 PM	25469
Surr: 2-Fluorobiphenyl	56.8		35.4-111		%Rec	1	5/25/2016 3:20:41 PM	25469
Surr: 4-Terphenyl-d14	39.2		15-91.7		%Rec	1	5/25/2016 3:20:41 PM	25469
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Benzene	6.99	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Toluene	5.45	0.210	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Ethylbenzene	1.01	0.234	1.74	J	µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Methyl tert-butyl ether (MTBE)	ND	0.292	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,2,4-Trimethylbenzene	0.600	0.295	1.74	J	µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,3,5-Trimethylbenzene	0.374	0.287	1.74	J	µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,2-Dichloroethane (EDC)	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,2-Dibromoethane (EDB)	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Naphthalene	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1-Methylnaphthalene	ND	0.198	3.48		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
2-Methylnaphthalene	ND	0.458	3.48		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Acetone	7.20	0.515	8.70	J	µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Bromobenzene	ND	0.177	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Bromodichloromethane	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Bromoform	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468

Refer to the QC Summary report and 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 10-18 (8-10')**Project:** SWMU 10**Collection Date:** 5/16/2016 4:30:00 PM**Lab ID:** 1605874-002**Matrix:** SOIL**Received Date:** 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Bromomethane	ND	0.313	2.61		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
2-Butanone	ND	0.627	8.70		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Carbon disulfide	ND	0.643	8.70		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Carbon tetrachloride	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Chlorobenzene	ND	0.200	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Chloroethane	ND	0.321	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Chloroform	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Chloromethane	ND	0.441	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
2-Chlorotoluene	ND	0.296	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
4-Chlorotoluene	ND	0.289	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
cis-1,2-DCE	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
cis-1,3-Dichloropropene	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,2-Dibromo-3-chloropropane	ND	0.185	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Dibromochloromethane	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Dibromomethane	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,2-Dichlorobenzene	ND	0.253	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,3-Dichlorobenzene	ND	0.321	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,4-Dichlorobenzene	ND	0.326	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Dichlorodifluoromethane	ND	1.02	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,1-Dichloroethane	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,1-Dichloroethene	ND	0.285	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,2-Dichloropropane	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,3-Dichloropropane	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
2,2-Dichloropropane	ND	0.220	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,1-Dichloropropene	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Hexachlorobutadiene	ND	0.397	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
2-Hexanone	ND	0.433	8.70		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Isopropylbenzene	ND	0.219	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
4-Isopropyltoluene	ND	0.326	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
4-Methyl-2-pentanone	ND	3.48	8.70		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Methylene chloride	ND	1.74	2.61		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
n-Butylbenzene	ND	0.424	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
n-Propylbenzene	ND	0.311	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
sec-Butylbenzene	ND	0.309	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Styrene	ND	0.222	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
tert-Butylbenzene	ND	0.254	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,1,1,2-Tetrachloroethane	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,1,2,2-Tetrachloroethane	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Tetrachloroethene (PCE)	ND	0.229	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468

Refer to the QC Summary report and 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 1605874

Date Reported: 6/28/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-18 (8-10')

Project: SWMU 10

Collection Date: 5/16/2016 4:30:00 PM

Lab ID: 1605874-002

Matrix: SOIL

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
trans-1,2-DCE	ND	0.176	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
trans-1,3-Dichloropropene	ND	0.211	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,2,3-Trichlorobenzene	ND	0.421	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,2,4-Trichlorobenzene	ND	0.528	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,1,1-Trichloroethane	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,1,2-Trichloroethane	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Trichloroethene (TCE)	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Trichlorofluoromethane	ND	0.219	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
1,2,3-Trichloropropane	ND	1.74	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Vinyl chloride	ND	0.458	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Xylenes, Total	2.70	0.693	1.74		µg/Kg-dry	1	5/25/2016 2:53:00 PM	25468
Surr: 1,2-Dichloroethane-d4	104	0	70-130		%Rec	1	5/25/2016 2:53:00 PM	25468
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	5/25/2016 2:53:00 PM	25468
Surr: Dibromofluoromethane	91.9	0	70-130		%Rec	1	5/25/2016 2:53:00 PM	25468
Surr: Toluene-d8	97.4	0	70-130		%Rec	1	5/25/2016 2:53:00 PM	25468
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF	
Gasoline Range Organics (GRO)	1.0	0.50	3.3	J	mg/Kg-dr	1	5/23/2016 5:57:16 PM	C34413
Surr: BFB	95.5	0	70-130		%Rec	1	5/23/2016 5:57:16 PM	C34413

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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 1605874

Date Reported: 6/28/2016

CLIENT: Western Refining Company

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

Project: SWMU 10

Collection Date: 5/16/2016 4:40:00 PM

Lab ID: 1605874-003

Matrix: SOIL

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	ND	4.0	11		mg/Kg-dr	1	5/24/2016 11:16:23 AM	25449
Motor Oil Range Organics (MRO)	ND	56	56		mg/Kg-dr	1	5/24/2016 11:16:23 AM	25449
Surr: DNOP	99.7	0	70-130		%Rec	1	5/24/2016 11:16:23 AM	25449
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	14	1.0	1.0		wt%	1	5/23/2016	R34494
EPA METHOD 7471: MERCURY							Analyst: pmf	
Mercury	0.0011	0.00067	0.039	J	mg/Kg-dr	1	5/24/2016 12:53:02 PM	25448
EPA METHOD 6010B: SOIL METALS							Analyst: MED	
Antimony	2.9	1.4	2.9	J	mg/Kg-dr	1	5/24/2016 2:59:33 PM	25447
Arsenic	2.0	0.85	2.9	J	mg/Kg-dr	1	5/24/2016 2:59:33 PM	25447
Barium	1000	0.29	0.59		mg/Kg-dr	5	6/1/2016 11:39:13 AM	25586
Beryllium	0.86	0.0054	0.17		mg/Kg-dr	1	5/24/2016 2:59:33 PM	25447
Cadmium	ND	0.074	0.12		mg/Kg-dr	1	5/24/2016 2:59:33 PM	25447
Chromium	16	0.14	0.35		mg/Kg-dr	1	5/24/2016 2:59:33 PM	25447
Cobalt	8.3	0.044	0.35		mg/Kg-dr	1	5/24/2016 2:59:33 PM	25447
Iron	19000	120	300		mg/Kg-dr	100	6/16/2016 8:23:05 AM	25586
Lead	2.6	0.20	0.29		mg/Kg-dr	1	5/24/2016 2:59:33 PM	25447
Manganese	690	0.26	0.58		mg/Kg-dr	5	5/26/2016 3:16:43 PM	25447
Nickel	15	0.13	0.58		mg/Kg-dr	1	5/24/2016 2:59:33 PM	25447
Selenium	ND	1.3	2.9		mg/Kg-dr	1	5/24/2016 2:59:33 PM	25447
Silver	ND	0.037	0.29		mg/Kg-dr	1	5/24/2016 2:59:33 PM	25447
Vanadium	21	0.040	2.9		mg/Kg-dr	1	5/24/2016 2:59:33 PM	25447
Zinc	28	0.66	2.9		mg/Kg-dr	1	5/24/2016 2:59:33 PM	25447
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	0.099	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Acenaphthylene	ND	0.094	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Aniline	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Anthracene	ND	0.076	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Azobenzene	ND	0.14	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Benz(a)anthracene	ND	0.099	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Benzo(a)pyrene	ND	0.087	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Benzo(b)fluoranthene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Benzo(g,h,i)perylene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Benzo(k)fluoranthene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Benzoic acid	ND	0.095	0.58		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Benzyl alcohol	ND	0.090	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Bis(2-chloroethoxy)methane	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469

Refer to the QC Summary report and 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 1605874

Date Reported: 6/28/2016

CLIENT: Western Refining Company

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

Project: SWMU 10

Collection Date: 5/16/2016 4:40:00 PM

Lab ID: 1605874-003

Matrix: SOIL

Received Date: 5/18/2016 4:00:00 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	5/25/2016 3:50:57 PM	25469
Bis(2-chloroisopropyl)ether	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Bis(2-ethylhexyl)phthalate	ND	0.094	0.58		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
4-Bromophenyl phenyl ether	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Butyl benzyl phthalate	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Carbazole	ND	0.078	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
4-Chloro-3-methylphenol	ND	0.14	0.58		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
4-Chloroaniline	ND	0.13	0.58		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
2-Chloronaphthalene	ND	0.091	0.29		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
2-Chlorophenol	ND	0.091	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
4-Chlorophenyl phenyl ether	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Chrysene	ND	0.098	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Di-n-butyl phthalate	ND	0.086	0.46		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Di-n-octyl phthalate	ND	0.098	0.46		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Dibenz(a,h)anthracene	ND	0.093	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
1,2-Dichlorobenzene	ND	0.088	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
1,3-Dichlorobenzene	ND	0.089	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
1,4-Dichlorobenzene	ND	0.097	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
3,3'-Dichlorobenzidine	ND	0.085	0.29		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Diethyl phthalate	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
2,4-Dichlorophenol	ND	0.11	0.46		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
2,4-Dimethylphenol	ND	0.12	0.35		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
4,6-Dinitro-2-methylphenol	ND	0.070	0.46		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
2,4-Dinitrophenol	ND	0.076	0.58		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
2,4-Dinitrotoluene	ND	0.10	0.58		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
2,6-Dinitrotoluene	ND	0.12	0.58		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Fluoranthene	ND	0.066	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Fluorene	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Hexachlorobenzene	ND	0.091	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Hexachlorobutadiene	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Hexachlorocyclopentadiene	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Hexachloroethane	ND	0.099	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Indeno(1,2,3-cd)pyrene	ND	0.090	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
1-Methylnaphthalene	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
2-Methylnaphthalene	ND	0.14	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
2-Methylphenol	ND	0.096	0.46		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
3+4-Methylphenol	ND	0.083	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469

Refer to the QC Summary report and 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 10-18 (18-20')

Project: SWMU 10

Collection Date: 5/16/2016 4:40:00 PM

Lab ID: 1605874-003

Matrix: SOIL

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
N-Nitrosodi-n-propylamine	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
N-Nitrosodiphenylamine	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
2-Nitroaniline	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
3-Nitroaniline	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
4-Nitroaniline	ND	0.081	0.46		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
2-Nitrophenol	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
4-Nitrophenol	ND	0.088	0.29		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Pentachlorophenol	ND	0.074	0.46		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Phenanthrene	ND	0.078	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Phenol	ND	0.087	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Pyrene	ND	0.087	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Pyridine	ND	0.091	0.46		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
2,4,5-Trichlorophenol	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
2,4,6-Trichlorophenol	ND	0.095	0.23		mg/Kg-dr	1	5/25/2016 3:50:57 PM	25469
Surr: 2-Fluorophenol	52.2	0	28.3-102		%Rec	1	5/25/2016 3:50:57 PM	25469
Surr: Phenol-d5	53.4	0	35.7-103		%Rec	1	5/25/2016 3:50:57 PM	25469
Surr: 2,4,6-Tribromophenol	69.2	0	35.2-108		%Rec	1	5/25/2016 3:50:57 PM	25469
Surr: Nitrobenzene-d5	55.3		24-118		%Rec	1	5/25/2016 3:50:57 PM	25469
Surr: 2-Fluorobiphenyl	58.9		35.4-111		%Rec	1	5/25/2016 3:50:57 PM	25469
Surr: 4-Terphenyl-d14	55.1		15-91.7		%Rec	1	5/25/2016 3:50:57 PM	25469
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Benzene	10.2	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Toluene	7.64	0.260	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Ethylbenzene	1.55	0.290	2.16	J	µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Methyl tert-butyl ether (MTBE)	ND	0.362	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,2,4-Trimethylbenzene	1.20	0.366	2.16	J	µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,3,5-Trimethylbenzene	0.744	0.356	2.16	J	µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,2-Dichloroethane (EDC)	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,2-Dibromoethane (EDB)	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Naphthalene	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1-Methylnaphthalene	0.323	0.245	4.31	J	µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
2-Methylnaphthalene	ND	0.567	4.31		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Acetone	7.78	0.638	10.8	J	µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Bromobenzene	ND	0.219	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Bromodichloromethane	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Bromoform	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468

Refer to the QC Summary report and 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 10-18 (18-20')**Project:** SWMU 10**Collection Date:** 5/16/2016 4:40:00 PM**Lab ID:** 1605874-003**Matrix:** SOIL**Received Date:** 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Bromomethane	ND	0.388	3.23		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
2-Butanone	ND	0.777	10.8		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Carbon disulfide	ND	0.797	10.8		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Carbon tetrachloride	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Chlorobenzene	ND	0.247	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Chloroethane	ND	0.398	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Chloroform	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Chloromethane	ND	0.546	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
2-Chlorotoluene	ND	0.367	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
4-Chlorotoluene	ND	0.358	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
cis-1,2-DCE	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
cis-1,3-Dichloropropene	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,2-Dibromo-3-chloropropane	ND	0.229	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Dibromochloromethane	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Dibromomethane	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,2-Dichlorobenzene	ND	0.314	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,3-Dichlorobenzene	ND	0.398	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,4-Dichlorobenzene	ND	0.403	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Dichlorodifluoromethane	ND	1.26	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,1-Dichloroethane	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,1-Dichloroethene	ND	0.353	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,2-Dichloropropane	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,3-Dichloropropane	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
2,2-Dichloropropane	ND	0.272	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,1-Dichloropropene	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Hexachlorobutadiene	ND	0.491	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
2-Hexanone	ND	0.537	10.8		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Isopropylbenzene	ND	0.271	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
4-Isopropyltoluene	ND	0.404	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
4-Methyl-2-pentanone	ND	4.31	10.8		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Methylene chloride	ND	2.16	3.23		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
n-Butylbenzene	ND	0.525	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
n-Propylbenzene	ND	0.386	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
sec-Butylbenzene	ND	0.383	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Styrene	ND	0.275	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
tert-Butylbenzene	ND	0.315	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,1,1,2-Tetrachloroethane	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,1,2,2-Tetrachloroethane	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Tetrachloroethene (PCE)	ND	0.283	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468

Refer to the QC Summary report and 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 1605874

Date Reported: 6/28/2016

CLIENT: Western Refining Company

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

Project: SWMU 10

Collection Date: 5/16/2016 4:40:00 PM

Lab ID: 1605874-003

Matrix: SOIL

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
trans-1,2-DCE	ND	0.218	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
trans-1,3-Dichloropropene	ND	0.261	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,2,3-Trichlorobenzene	ND	0.522	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,2,4-Trichlorobenzene	ND	0.654	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,1,1-Trichloroethane	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,1,2-Trichloroethane	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Trichloroethene (TCE)	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Trichlorofluoromethane	ND	0.271	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
1,2,3-Trichloropropane	ND	2.16	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Vinyl chloride	ND	0.567	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Xylenes, Total	4.47	0.859	2.16		µg/Kg-dry	1	5/25/2016 3:18:00 PM	25468
Surr: 1,2-Dichloroethane-d4	102	0	70-130		%Rec	1	5/25/2016 3:18:00 PM	25468
Surr: 4-Bromofluorobenzene	100	0	70-130		%Rec	1	5/25/2016 3:18:00 PM	25468
Surr: Dibromofluoromethane	93.4	0	70-130		%Rec	1	5/25/2016 3:18:00 PM	25468
Surr: Toluene-d8	96.7	0	70-130		%Rec	1	5/25/2016 3:18:00 PM	25468
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF	
Gasoline Range Organics (GRO)	0.66	0.59	3.9	J	mg/Kg-dr	1	5/23/2016 6:25:37 PM	C34413
Surr: BFB	98.0	0	70-130		%Rec	1	5/23/2016 6:25:37 PM	C34413

Refer to the QC Summary report and 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



Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Chromium,Hexavalent	U		0.640	2.00	1	05/26/2016 15:21	<u>WG875269</u>

Wet Chemistry by Method 9012B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Cyanide	0.0805	J	0.0390	0.250	1	05/27/2016 15:06	<u>WG875172</u>





Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	05/26/2016 15:21	<u>WG875269</u>

Wet Chemistry by Method 9012B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Cyanide	0.0983	<u>J</u>	0.0390	0.250	1	05/27/2016 15:07	<u>WG875172</u>





Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Chromium, Hexavalent	U		0.640	2.00	1	05/26/2016 15:21	<u>WG875269</u>

Wet Chemistry by Method 9012B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Cyanide	0.0587	<u>J</u>	0.0390	0.250	1	05/27/2016 15:08	<u>WG875172</u>





Method Blank (MB)

(MB) R3140032-1 05/26/16 15:04					
Analyte	MB Result	MB Qualifier	MB MDL	MB RDL	
	mg/kg	mg/kg	mg/kg	mg/kg	
Chromium, Hexavalent	U	0.640	2.00	2.00	

L836517-01 Original Sample (OS) • Duplicate (DUP)

(OS) L836517-01 05/26/16 15:08 • (DUP) R3140032-4 05/26/16 15:08					
Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier
	mg/kg	mg/kg	%	%	%
Chromium, Hexavalent	ND	ND	1	0.000	20

L837120-05 Original Sample (OS) • Duplicate (DUP)

(OS) L837120-05 05/26/16 15:28 • (DUP) R3140032-8 05/26/16 15:30					
Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier
	mg/kg	mg/kg	%	%	%
Chromium, Hexavalent	U	ND	1	0.000	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3140032-2 05/26/16 15:04 • (LCSD) R3140032-3 05/26/16 15:04					
Analyte	Spike Amount	LCS Result	LCSD Result	Rec. Limits	RPD Limits
	mg/kg	mg/kg	mg/kg	%	%
Chromium, Hexavalent	56.9	56.6	56.6	99.0	80.0-120

L836517-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L836517-01 05/26/16 15:08 • (MS) R3140032-5 05/26/16 15:10 • (MSD) R3140032-6 05/26/16 15:10					
Analyte	Spike Amount	Original Result	MS Result	MSD Result	MSD Rec.
	mg/kg	mg/kg	mg/kg	mg/kg	%
Chromium, Hexavalent	20.0	ND	3.72	3.72	9.00
					Rec. Limits
					%
					75.0-125
					%
					0.000
					%
					20

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



QUALITY CONTROL SUMMARY

WG875172

Wet Chemistry by Method 9012B

L836955-01.02.03

Method Blank (MB)

(MB) R3140277-1 05/27/16 14:52

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Cyanide	U		0.0390	0.250

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3140277-2 05/27/16 14:53 • (LCSD) R3140277-3 05/27/16 14:55

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Cyanide	48.4	55.2	67.6	50.0-150			20.0	20

L836952-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L836952-07 05/27/16 15:00 • (MS) R3140277-4 05/27/16 15:01 • (MSD) R3140277-5 05/27/16 15:02

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Cyanide	3.33	0.0400	3.53	3.32	105	98.0	1	80.0-120			6.00	20

ACCOUNT:
Hall Environmental Analysis Laboratory

PROJECT:

SDG:
L836955

DATE/TIME:
05/27/16 18:16

2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc

GLOSSARY OF TERMS

ONE LAB. NATIONWIDE.



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
J	The identification of the analyte is acceptable; the reported value is an estimate.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.



ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L836955

DATE/TIME:

05/27/16 18:16

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1605874

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	1605874-001BMS	SampType:	MS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	SWMU 10-18 (2-2.5')	Batch ID:	25449	RunNo:	34433					
Prep Date:	5/23/2016	Analysis Date:	5/24/2016	SeqNo:	1061810	Units:	mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	11	56.59	0	100	33.9	141			
Surr: DNOP	5.6		5.659		99.4	70	130			

Sample ID	1605874-001BMSD	SampType:	MSD	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	SWMU 10-18 (2-2.5')	Batch ID:	25449	RunNo:	34433					
Prep Date:	5/23/2016	Analysis Date:	5/24/2016	SeqNo:	1061811	Units:	mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	56	11	56.53	0	99.4	33.9	141	1.02	20	
Surr: DNOP	5.6		5.653		98.4	70	130	0	0	

Sample ID	LCS-25449	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	25449	RunNo:	34433					
Prep Date:	5/23/2016	Analysis Date:	5/24/2016	SeqNo:	1061812	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	109	62.6	124			
Surr: DNOP	5.5		5.000		109	70	130			

Sample ID	MB-25449	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	25449	RunNo:	34433					
Prep Date:	5/23/2016	Analysis Date:	5/24/2016	SeqNo:	1061813	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		113	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#: 1605874

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS-25468		SampType: LCS		TestCode: Method 8260B/5035LOW: VOLATILES					
Client ID:	LCSS		Batch ID: 25468		RunNo: 34484					
Prep Date:	5/24/2016		Analysis Date: 5/25/2016		SeqNo: 1063539		Units: µg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	10.2	2.00	10.00	0	102	70	130			
Toluene	11.1	2.00	10.00	0	111	70	130			
Chlorobenzene	11.1	2.00	10.00	0	111	70	130			
1,1-Dichloroethene	10.3	2.00	10.00	0	103	68	129			
Trichloroethene (TCE)	10.2	2.00	10.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	9.00		10.00		90.0	70	130			
Surr: 4-Bromofluorobenzene	10.0		10.00		100	70	130			
Surr: Dibromofluoromethane	8.76		10.00		87.6	70	130			
Surr: Toluene-d8	9.90		10.00		99.0	70	130			

Sample ID	LCSD-25468		SampType: LCS		TestCode: Method 8260B/5035LOW: VOLATILES					
Client ID:	LCSS		Batch ID: 25468		RunNo: 34484					
Prep Date:	5/24/2016		Analysis Date: 5/25/2016		SeqNo: 1063540		Units: µg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	10.3	2.00	10.00	0	103	70	130	1.08	0	
Toluene	11.2	2.00	10.00	0	112	70	130	0.629	0	
Chlorobenzene	11.3	2.00	10.00	0	113	70	130	1.96	0	
1,1-Dichloroethene	10.4	2.00	10.00	0	104	68	129	1.16	0	
Trichloroethene (TCE)	10.2	2.00	10.00	0	102	70	130	0.295	0	
Surr: 1,2-Dichloroethane-d4	8.93		10.00		89.3	70	130	0	0	
Surr: 4-Bromofluorobenzene	10.1		10.00		101	70	130	0	0	
Surr: Dibromofluoromethane	8.72		10.00		87.2	70	130	0	0	
Surr: Toluene-d8	9.86		10.00		98.6	70	130	0	0	

Sample ID	MB-25468	SampType:	MBLK		TestCode:	Method 8260B/5035LOW: VOLATILES				
Client ID:	PBS	Batch ID:	25468		RunNo:	34484				
Prep Date:	5/24/2016	Analysis Date:	5/25/2016		SeqNo:	1063541		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	ND	4.00								

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#: 1605874

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-25468		SampType:	MBLK		TestCode:	Method 8260B/5035LOW: VOLATILES			
Client ID:	PBS		Batch ID:	25468		RunNo:	34484			
Prep Date:	5/24/2016		Analysis Date:	5/25/2016		SeqNo:	1063541	Units:	µg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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								
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								

Qualifiers:

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

B Analyte detected in the 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#: 1605874

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-25468		SampType:	MBLK		TestCode:	Method 8260B/5035LOW: VOLATILES			
Client ID:	PBS		Batch ID:	25468		RunNo:	34484			
Prep Date:	5/24/2016		Analysis Date:	5/25/2016		SeqNo:	1063541	Units:	µg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Styrene	ND	2.00								
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	8.94		10.00		89.4	70	130			
Surr: 4-Bromofluorobenzene	10.0		10.00		100	70	130			
Surr: Dibromofluoromethane	8.80		10.00		88.0	70	130			
Surr: Toluene-d8	9.82		10.00		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	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1605874

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-25469	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBS	Batch ID:	25469	RunNo:	34461					
Prep Date:	5/24/2016	Analysis Date:	5/25/2016	SeqNo:	1063511	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	0.15	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	0.12	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	0.087	0.40								J
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#: 1605874

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-25469	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBS	Batch ID:	25469	RunNo:	34461					
Prep Date:	5/24/2016	Analysis Date:	5/25/2016	SeqNo:	1063511	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								
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	2.0		3.330		60.1	28.3	102			
Surr: Phenol-d5	2.2		3.330		65.9	35.7	103			
Surr: 2,4,6-Tribromophenol	2.5		3.330		75.8	35.2	108			
Surr: Nitrobenzene-d5	1.1		1.670		68.4	24	118			
Surr: 2-Fluorobiphenyl	1.2		1.670		73.2	35.4	111			
Surr: 4-Terphenyl-d14	1.1		1.670		64.4	15	91.7			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the 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#: 1605874

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	Ics-25469		SampType: LCS			TestCode: EPA Method 8270C: Semivolatiles				
Client ID:	LCSS		Batch ID: 25469			RunNo: 34461				
Prep Date:	5/24/2016		Analysis Date: 5/25/2016			SeqNo: 1063512		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	70.0	45.8	99.8			
4-Chloro-3-methylphenol	2.2	0.50	3.330	0	66.5	51.5	103			
2-Chlorophenol	1.8	0.20	3.330	0	54.1	46.5	105			
1,4-Dichlorobenzene	0.86	0.20	1.670	0	51.3	45.5	103			
2,4-Dinitrotoluene	1.1	0.50	1.670	0	66.9	36	87.2			
N-Nitrosodi-n-propylamine	0.80	0.20	1.670	0	48.1	47.3	104			
4-Nitrophenol	2.2	0.25	3.330	0	65.7	47.3	95.3			
Pentachlorophenol	1.9	0.40	3.330	0	56.6	38.7	89.3			
Phenol	1.8	0.20	3.330	0	54.5	47.8	106			
Pyrene	1.2	0.20	1.670	0	72.6	33.4	105			
1,2,4-Trichlorobenzene	1.0	0.20	1.670	0	61.4	50.4	115			
Surr: 2-Fluorophenol	1.6		3.330		47.4	28.3	102			
Surr: Phenol-d5	1.9		3.330		56.0	35.7	103			
Surr: 2,4,6-Tribromophenol	2.2		3.330		66.3	35.2	108			
Surr: Nitrobenzene-d5	1.0		1.670		59.7	24	118			
Surr: 2-Fluorobiphenyl	1.2		1.670		70.2	35.4	111			
Surr: 4-Terphenyl-d14	0.74		1.670		44.5	15	91.7			

Sample ID	1605874-001bms		SampType: MS			TestCode: EPA Method 8270C: Semivolatiles				
Client ID:	SWMU 10-18 (2-2.5')		Batch ID: 25469			RunNo: 34461				
Prep Date:	5/24/2016		Analysis Date: 5/25/2016			SeqNo: 1063528		Units: mg/Kg-dry		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	1.0	0.24	2.000	0	50.7	39.3	86.4			
4-Chloro-3-methylphenol	2.0	0.60	3.988	0	51.1	37.5	96.4			
2-Chlorophenol	1.8	0.24	3.988	0	45.9	37.4	90.6			
1,4-Dichlorobenzene	0.82	0.24	2.000	0	40.8	31.7	85			
2,4-Dinitrotoluene	0.89	0.60	2.000	0	44.6	26.4	86			
N-Nitrosodi-n-propylamine	0.85	0.24	2.000	0	42.7	43.5	83			S
4-Nitrophenol	1.9	0.30	3.988	0	48.0	32.7	98			
Pentachlorophenol	1.7	0.48	3.988	0	42.3	26.6	87.4			
Phenol	1.7	0.24	3.988	0	42.6	40.5	85.3			
Pyrene	0.95	0.24	2.000	0	47.3	23.2	93.9			
1,2,4-Trichlorobenzene	0.93	0.24	2.000	0	46.5	38.7	99			
Surr: 2-Fluorophenol	1.6		3.988		40.7	28.3	102			
Surr: Phenol-d5	1.8		3.988		45.2	35.7	103			
Surr: 2,4,6-Tribromophenol	2.0		3.988		50.6	35.2	108			
Surr: Nitrobenzene-d5	0.93		2.000		46.7	24	118			
Surr: 2-Fluorobiphenyl	0.94		2.000		46.9	35.4	111			

Qualifiers:

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

B Analyte detected in the 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#: 1605874

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	1605874-001bms	SampType:	MS	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	SWMU 10-18 (2-2.5')	Batch ID:	25469	RunNo:	34461					
Prep Date:	5/24/2016	Analysis Date:	5/25/2016	SeqNo:	1063528	Units:	mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	0.86		2.000		42.8	15	91.7			

Sample ID	1605874-001bmsd	SampType:	MSD	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	SWMU 10-18 (2-2.5')	Batch ID:	25469	RunNo:	34461					
Prep Date:	5/24/2016	Analysis Date:	5/25/2016	SeqNo:	1063529	Units:	mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	0.96	0.24	2.006	0	47.7	39.3	86.4	5.78	30.2	
4-Chloro-3-methylphenol	1.9	0.60	4.000	0	47.0	37.5	96.4	8.21	37.2	
2-Chlorophenol	1.7	0.24	4.000	0	42.3	37.4	90.6	7.83	48	
1,4-Dichlorobenzene	0.81	0.24	2.006	0	40.1	31.7	85	1.33	40.6	
2,4-Dinitrotoluene	0.84	0.60	2.006	0	42.1	26.4	86	5.46	47.7	
N-Nitrosodi-n-propylamine	0.82	0.24	2.006	0	40.7	43.5	83	4.54	52.5	S
4-Nitrophenol	1.8	0.30	4.000	0	43.9	32.7	98	8.61	36.6	
Pentachlorophenol	1.7	0.48	4.000	0	41.8	26.6	87.4	0.917	65.5	
Phenol	1.8	0.24	4.000	0	44.0	40.5	85.3	3.55	44	
Pyrene	1.0	0.24	2.006	0	50.2	23.2	93.9	6.24	42.1	
1,2,4-Trichlorobenzene	0.82	0.24	2.006	0	40.8	38.7	99	12.6	31.5	
Surr: 2-Fluorophenol	1.5		4.000		36.5	28.3	102	0	0	
Surr: Phenol-d5	1.8		4.000		44.9	35.7	103	0	0	
Surr: 2,4,6-Tribromophenol	1.9		4.000		47.7	35.2	108	0	0	
Surr: Nitrobenzene-d5	0.83		2.006		41.3	24	118	0	0	
Surr: 2-Fluorobiphenyl	0.93		2.006		46.6	35.4	111	0	0	
Surr: 4-Terphenyl-d14	0.69		2.006		34.2	15	91.7	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#: 1605874

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-25448		SampType: MBLK		TestCode: EPA Method 7471: Mercury					
Client ID:	PBS		Batch ID: 25448		RunNo: 34452					
Prep Date:	5/23/2016		Analysis Date: 5/24/2016		SeqNo: 1062465		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercurv	0.00083	0.033								J

Sample ID	LCS-25448			SampType:	LCS		TestCode:	EPA Method 7471: Mercury			
Client ID:	LCSS			Batch ID:	25448		RunNo:	34452			
Prep Date:	5/23/2016			Analysis Date:	5/24/2016		SeqNo:	1062466		Units:	mg/Kg
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	0.18	0.033	0.1667	0	110	80	120				

Sample ID	1605874-001BMS			SampType:	MS			TestCode:	EPA Method 7471: Mercury		
Client ID:	SWMU 10-18 (2-2.5')			Batch ID:	25448			RunNo:	34452		
Prep Date:	5/23/2016			Analysis Date:	5/24/2016			SeqNo:	1062468		
								Units:	mg/Kg-dry		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	0.23	0.039	0.1991	0.004404	114	75	125				

Sample ID	1605874-001BMSD		SampType:	MSD		TestCode:	EPA Method 7471: Mercury				
Client ID:	SWMU 10-18 (2-2.5')		Batch ID:	25448		RunNo:	34452				
Prep Date:	5/23/2016		Analysis Date:	5/24/2016		SeqNo:	1062472		Units:	mg/Kg-dry	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	0.24	0.039	0.1988	0.004404	116	75	125	1.19	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#: 1605874

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-25447		SampType:	MBLK		TestCode:	EPA Method 6010B: Soil Metals			
Client ID:	PBS		Batch ID:	25447		RunNo:	34439			
Prep Date:	5/23/2016		Analysis Date:	5/24/2016		SeqNo:	1061954		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								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Lead	ND	0.25								
Manganese	0.047	0.10								J
Nickel	ND	0.50								
Selenium	1.3	2.5								J
Silver	ND	0.25								
Vanadium	ND	2.5								
Zinc	ND	2.5								

Sample ID	LCS-25447		SampType:	LCS		TestCode:	EPA Method 6010B: Soil Metals			
Client ID:	LCSS		Batch ID:	25447		RunNo:	34439			
Prep Date:	5/23/2016		Analysis Date:	5/24/2016		SeqNo:	1061955		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	23	2.5	25.00	0	90.0	80	120			
Arsenic	24	2.5	25.00	0	95.3	80	120			
Beryllium	24	0.15	25.00	0	97.0	80	120			
Cadmium	24	0.10	25.00	0	94.4	80	120			
Chromium	23	0.30	25.00	0	93.1	80	120			
Cobalt	23	0.30	25.00	0	90.9	80	120			
Lead	23	0.25	25.00	0	91.3	80	120			
Manganese	24	0.10	25.00	0	94.1	80	120			
Nickel	23	0.50	25.00	0	92.2	80	120			
Selenium	24	2.5	25.00	0	97.6	80	120			
Silver	4.7	0.25	5.000	0	93.8	80	120			
Vanadium	24	2.5	25.00	0	95.9	80	120			
Zinc	24	2.5	25.00	0	94.2	80	120			

Sample ID	1605874-001BMS		SampType:	MS		TestCode:	EPA Method 6010B: Soil Metals			
Client ID:	SWMU 10-18 (2-2.5')		Batch ID:	25447		RunNo:	34511			
Prep Date:	5/23/2016		Analysis Date:	5/26/2016		SeqNo:	1064332		Units: mg/Kg-dry	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	12	3.0	29.62	2.721	29.8	75	125			S
Arsenic	24	3.0	29.62	1.831	75.9	75	125			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the 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#: 1605874

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	1605874-001BMS		SampType: MS		TestCode: EPA Method 6010B: Soil Metals					
Client ID:	SWMU 10-18 (2-2.5')		Batch ID: 25447		RunNo: 34511					
Prep Date:	5/23/2016		Analysis Date: 5/26/2016		SeqNo: 1064332		Units: mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	24	0.18	29.62	1.062	77.8	75	125			
Cadmium	23	0.12	29.62	0	77.9	75	125			
Chromium	32	0.36	29.62	8.795	79.2	75	125			
Cobalt	25	0.36	29.62	4.668	69.2	75	125			S
Lead	25	0.30	29.62	5.211	67.0	75	125			S
Manganese	230	0.12	29.62	204.5	74.6	75	125			S
Nickel	30	0.59	29.62	8.706	72.6	75	125			S
Selenium	20	3.0	29.62	0	68.2	75	125			S
Silver	4.8	0.30	5.925	0	80.6	75	125			
Vanadium	41	3.0	29.62	16.52	84.1	75	125			
Zinc	38	3.0	29.62	14.74	78.1	75	125			

Sample ID	1605874-001BMSD		SampType: MSD		TestCode: EPA Method 6010B: Soil Metals					
Client ID:	SWMU 10-18 (2-2.5')		Batch ID: 25447		RunNo: 34511					
Prep Date:	5/23/2016		Analysis Date: 5/26/2016		SeqNo: 1064333		Units: mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	11	3.0	29.74	2.721	27.2	75	125	6.60	20	S
Arsenic	23	3.0	29.74	1.831	71.4	75	125	5.26	20	S
Beryllium	23	0.18	29.74	1.062	73.6	75	125	4.92	20	S
Cadmium	22	0.12	29.74	0	74.6	75	125	3.97	20	S
Chromium	32	0.36	29.74	8.795	78.7	75	125	0.220	20	
Cobalt	24	0.36	29.74	4.668	66.6	75	125	2.79	20	S
Lead	24	0.30	29.74	5.211	63.9	75	125	3.41	20	S
Manganese	230	0.12	29.74	204.5	74.4	75	125	0.0216	20	S
Nickel	30	0.59	29.74	8.706	71.7	75	125	0.608	20	S
Selenium	20	3.0	29.74	0	66.2	75	125	2.62	20	S
Silver	4.7	0.30	5.948	0	79.6	75	125	0.792	20	
Vanadium	41	3.0	29.74	16.52	82.1	75	125	1.20	20	
Zinc	38	3.0	29.74	14.74	79.6	75	125	1.40	20	

Sample ID	MB-25586		SampType:	MBLK		TestCode:	EPA Method 6010B: Soil Metals				
Client ID:	PBS		Batch ID:	25586		RunNo:	34597				
Prep Date:	5/31/2016		Analysis Date:	6/1/2016		SeqNo:	1067058		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Barium	ND	0.10									

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#: 1605874

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS-25586		SampType: LCS		TestCode: EPA Method 6010B: Soil Metals					
Client ID:	LCSS		Batch ID: 25586		RunNo: 34597					
Prep Date:	5/31/2016		Analysis Date: 6/1/2016		SeqNo: 1067059		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	22	0.10	25.00	0	88.8	80	120			

Sample ID	1605874-001BMS		SampType: MS		TestCode: EPA Method 6010B: Soil Metals					
Client ID:	SWMU 10-18 (2-2.5')		Batch ID: 25586		RunNo: 34597					
Prep Date:	5/31/2016		Analysis Date: 6/1/2016		SeqNo: 1067131		Units: mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	190	0.24	29.62	133.9	175	75	125			S

Sample ID	1605874-001BMSD		SampType:	MSD		TestCode:	EPA Method 6010B: Soil Metals				
Client ID:	SWMU 10-18 (2-2.5')		Batch ID:	25586		RunNo:	34597				
Prep Date:	5/31/2016		Analysis Date:	6/1/2016		SeqNo:	1067132		Units:	mg/Kg-dry	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Barium	410	0.24	29.74	133.9	923	75	125	74.9	20	RS	

Sample ID	MB-25586		SampType: MBLK		TestCode: EPA Method 6010B: Soil Metals					
Client ID:	PBS		Batch ID: 25586		RunNo: 34951					
Prep Date:	5/31/2016		Analysis Date: 6/16/2016		SeqNo: 1079711		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	2.0	2.5								J

Sample ID	LCS-25586		SampType:	LCS		TestCode:	EPA Method 6010B: Soil Metals				
Client ID:	LCSS		Batch ID:	25586		RunNo:	34951				
Prep Date:	5/31/2016		Analysis Date:	6/16/2016		SeqNo:	1079712		Units:	mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Iron	25	2.5	25.00	0	99.4	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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1605874

28-Jun-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	PBS	Batch ID:	C34413	RunNo:	34413					
Prep Date:		Analysis Date:	5/23/2016	SeqNo:	1061608	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	500		500.0		100	70	130			

Sample ID	2.5ug gro icv	SampType:	LCS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	LCSS	Batch ID:	C34413	RunNo:	34413					
Prep Date:		Analysis Date:	5/23/2016	SeqNo:	1061609	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	102	62.9	123			
Surr: BFB	510		500.0		102	70	130			

Sample ID	1605874-001BMS	SampType:	MS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	SWMU 10-18 (2-2.5')	Batch ID:	C34413	RunNo:	34413					
Prep Date:		Analysis Date:	5/23/2016	SeqNo:	1061611	Units:	mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	3.5	17.62	1.536	103	52.3	132			
Surr: BFB	340		352.3		97.3	70	130			

Sample ID	1605874-001BMSD	SampType:	MSD	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	SWMU 10-18 (2-2.5')	Batch ID:	C34413	RunNo:	34413					
Prep Date:		Analysis Date:	5/23/2016	SeqNo:	1061612	Units:	mg/Kg-dry			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	3.5	17.62	1.536	106	52.3	132	2.16	20	
Surr: BFB	350		352.3		98.6	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
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: 1605874

RcptNo: 1

Received by/date:

Logged By: Lindsay Mangin

5/18/2016 4:00:00 PM

Completed By: Lindsay Mangin

5/19/2016 6:52:18 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 ☐
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

July 07, 2016

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

RE: SWMU 10

OrderNo.: 1605875

Dear Ed Riege:

Hall Environmental Analysis Laboratory received 8 sample(s) on 5/18/2016 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued May 28, 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'.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1605875

Date Reported: 7/7/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-20 (8-10')

Project: SWMU 10

Collection Date: 5/17/2016 1:25:00 PM

Lab ID: 1605875-001

Matrix: MEOH (SOIL) **Received Date:** 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	2000	46	130		mg/Kg-dr	10	5/24/2016 4:44:29 PM	25449
Motor Oil Range Organics (MRO)	ND	640	640		mg/Kg-dr	10	5/24/2016 4:44:29 PM	25449
Surr: DNOP	0	0	70-130	S	%Rec	10	5/24/2016 4:44:29 PM	25449
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	21	1.0	1.0		wt%	1	5/23/2016	R34494
EPA METHOD 7471: MERCURY							Analyst: pmf	
Mercury	0.23	0.00071	0.041		mg/Kg-dr	1	5/24/2016 12:54:49 PM	25448
EPA METHOD 6010B: SOIL METALS							Analyst: MED	
Antimony	2.8	1.5	3.1	J	mg/Kg-dr	1	5/24/2016 3:02:55 PM	25447
Arsenic	3.9	0.91	3.1		mg/Kg-dr	1	5/24/2016 3:02:55 PM	25447
Barium	410	0.12	0.25		mg/Kg-dr	2	6/2/2016 3:20:30 PM	25586
Beryllium	1.2	0.0058	0.19		mg/Kg-dr	1	5/24/2016 3:02:55 PM	25447
Cadmium	ND	0.079	0.13		mg/Kg-dr	1	5/24/2016 3:02:55 PM	25447
Chromium	15	0.16	0.38		mg/Kg-dr	1	5/24/2016 3:02:55 PM	25447
Cobalt	5.6	0.048	0.38		mg/Kg-dr	1	5/24/2016 3:02:55 PM	25447
Iron	22000	120	310		mg/Kg-dr	100	6/16/2016 8:24:13 AM	25586
Lead	2.8	0.22	0.31		mg/Kg-dr	1	5/24/2016 3:02:55 PM	25447
Manganese	370	0.11	0.25		mg/Kg-dr	2	5/24/2016 3:11:58 PM	25447
Nickel	11	0.14	0.63		mg/Kg-dr	1	5/24/2016 3:02:55 PM	25447
Selenium	ND	1.4	3.1		mg/Kg-dr	1	5/26/2016 3:25:04 PM	25447
Silver	ND	0.040	0.31		mg/Kg-dr	1	5/24/2016 3:02:55 PM	25447
Vanadium	26	0.044	3.1		mg/Kg-dr	1	5/24/2016 3:02:55 PM	25447
Zinc	23	0.71	3.1		mg/Kg-dr	1	5/24/2016 3:02:55 PM	25447
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Acenaphthylene	ND	0.10	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Aniline	ND	0.12	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Anthracene	ND	0.084	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Azobenzene	ND	0.15	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Benz(a)anthracene	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Benzo(a)pyrene	ND	0.096	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Benzo(b)fluoranthene	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Benzo(g,h,i)perylene	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Benzo(k)fluoranthene	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Benzoic acid	ND	0.10	0.63		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Benzyl alcohol	ND	0.099	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Bis(2-chloroethoxy)methane	ND	0.14	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469

Refer to the QC Summary report and 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 10-20 (8-10')

Project: SWMU 10

Collection Date: 5/17/2016 1:25:00 PM

Lab ID: 1605875-001

Matrix: MEOH (SOIL) Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Bis(2-chloroethyl)ether	ND	0.093	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Bis(2-chloroisopropyl)ether	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Bis(2-ethylhexyl)phthalate	ND	0.10	0.63		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
4-Bromophenyl phenyl ether	ND	0.12	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Butyl benzyl phthalate	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Carbazole	ND	0.085	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
4-Chloro-3-methylphenol	ND	0.15	0.63		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
4-Chloroaniline	ND	0.14	0.63		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
2-Chloronaphthalene	ND	0.099	0.32		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
2-Chlorophenol	ND	0.099	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
4-Chlorophenyl phenyl ether	ND	0.14	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Chrysene	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Di-n-butyl phthalate	ND	0.094	0.51		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Di-n-octyl phthalate	ND	0.11	0.51		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Dibenz(a,h)anthracene	ND	0.10	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Dibenzofuran	ND	0.13	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
1,2-Dichlorobenzene	ND	0.097	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
1,3-Dichlorobenzene	ND	0.098	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
1,4-Dichlorobenzene	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
3,3'-Dichlorobenzidine	ND	0.093	0.32		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Diethyl phthalate	ND	0.13	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Dimethyl phthalate	ND	0.12	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
2,4-Dichlorophenol	ND	0.12	0.51		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
2,4-Dimethylphenol	4.3	1.4	3.8		mg/Kg-dr	10	5/26/2016 1:51:21 PM	25469
4,6-Dinitro-2-methylphenol	ND	0.076	0.51		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
2,4-Dinitrophenol	ND	0.084	0.63		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
2,4-Dinitrotoluene	ND	0.11	0.63		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
2,6-Dinitrotoluene	ND	0.13	0.63		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Fluoranthene	ND	0.073	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Fluorene	1.5	0.12	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Hexachlorobenzene	ND	0.099	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Hexachlorobutadiene	ND	0.14	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Hexachlorocyclopentadiene	ND	0.14	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Hexachloroethane	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Indeno(1,2,3-cd)pyrene	ND	0.099	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
1-Methylnaphthalene	11	1.3	2.5		mg/Kg-dr	10	5/26/2016 1:51:21 PM	25469
2-Methylnaphthalene	20	1.5	2.5		mg/Kg-dr	10	5/26/2016 1:51:21 PM	25469
2-Methylphenol	13	1.1	5.1		mg/Kg-dr	10	5/26/2016 1:51:21 PM	25469
3+4-Methylphenol	24	0.91	2.5		mg/Kg-dr	10	5/26/2016 1:51:21 PM	25469

Refer to the QC Summary report and 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 1605875

Date Reported: 7/7/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-20 (8-10')

Project: SWMU 10

Collection Date: 5/17/2016 1:25:00 PM

Lab ID: 1605875-001

Matrix: MEOH (SOIL) **Received Date:** 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
N-Nitrosodi-n-propylamine	ND	0.12	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
N-Nitrosodiphenylamine	ND	0.12	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Naphthalene	5.0	1.2	2.5		mg/Kg-dr	10	5/26/2016 1:51:21 PM	25469
2-Nitroaniline	ND	0.14	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
3-Nitroaniline	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
4-Nitroaniline	ND	0.089	0.51		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Nitrobenzene	ND	0.13	0.51		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
2-Nitrophenol	ND	0.13	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
4-Nitrophenol	ND	0.096	0.32		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Pentachlorophenol	ND	0.081	0.51		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Phenanthrene	3.2	0.086	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Phenol	30	0.95	2.5		mg/Kg-dr	10	5/26/2016 1:51:21 PM	25469
Pyrene	0.27	0.095	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Pyridine	ND	0.10	0.51		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
1,2,4-Trichlorobenzene	ND	0.14	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
2,4,5-Trichlorophenol	ND	0.13	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
2,4,6-Trichlorophenol	ND	0.10	0.25		mg/Kg-dr	1	5/25/2016 4:21:18 PM	25469
Surr: 2-Fluorophenol	49.0	0	28.3-102		%Rec	1	5/25/2016 4:21:18 PM	25469
Surr: Phenol-d5	63.0	0	35.7-103		%Rec	1	5/25/2016 4:21:18 PM	25469
Surr: 2,4,6-Tribromophenol	40.1	0	35.2-108		%Rec	1	5/25/2016 4:21:18 PM	25469
Surr: Nitrobenzene-d5	71.7		24-118		%Rec	1	5/25/2016 4:21:18 PM	25469
Surr: 2-Fluorobiphenyl	59.1		35.4-111		%Rec	1	5/25/2016 4:21:18 PM	25469
Surr: 4-Terphenyl-d14	49.9		15-91.7		%Rec	1	5/25/2016 4:21:18 PM	25469
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Benzene	3.7	0.69	0.86		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Toluene	36	0.10	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Ethylbenzene	9.6	0.14	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Methyl tert-butyl ether (MTBE)	ND	0.54	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,2,4-Trimethylbenzene	25	0.13	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,3,5-Trimethylbenzene	8.5	0.12	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,2-Dichloroethane (EDC)	ND	0.45	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,2-Dibromoethane (EDB)	ND	0.12	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Naphthalene	24	0.27	3.4		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1-Methylnaphthalene	41	0.38	6.9		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
2-Methylnaphthalene	73	0.37	6.9		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Acetone	ND	2.2	26		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Bromobenzene	ND	0.14	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Bromodichloromethane	ND	0.10	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Bromoform	ND	0.21	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413

Refer to the QC Summary report and 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 1605875

Date Reported: 7/7/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-20 (8-10')

Project: SWMU 10

Collection Date: 5/17/2016 1:25:00 PM

Lab ID: 1605875-001

Matrix: MEOH (SOIL) **Received Date:** 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Bromomethane	ND	0.63	5.2		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
2-Butanone	ND	0.98	17		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Carbon disulfide	ND	0.57	17		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Carbon tetrachloride	ND	0.11	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Chlorobenzene	ND	0.14	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Chloroethane	ND	0.34	3.4		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Chloroform	ND	0.13	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Chloromethane	ND	0.15	5.2		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
2-Chlorotoluene	ND	0.13	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
4-Chlorotoluene	ND	0.15	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
cis-1,2-DCE	ND	0.10	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
cis-1,3-Dichloropropene	ND	0.16	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,2-Dibromo-3-chloropropane	ND	0.53	3.4		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Dibromochloromethane	ND	0.16	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Dibromomethane	ND	0.15	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,2-Dichlorobenzene	ND	0.15	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,3-Dichlorobenzene	ND	0.14	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,4-Dichlorobenzene	ND	0.21	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Dichlorodifluoromethane	ND	0.53	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,1-Dichloroethane	ND	0.093	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,1-Dichloroethene	ND	0.56	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,2-Dichloropropane	ND	0.14	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,3-Dichloropropane	ND	0.19	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
2,2-Dichloropropane	ND	0.098	3.4		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,1-Dichloropropene	ND	0.14	3.4		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Hexachlorobutadiene	ND	0.21	3.4		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
2-Hexanone	ND	0.93	17		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Isopropylbenzene	2.0	0.15	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
4-Isopropyltoluene	0.96	0.15	1.7	J	mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
4-Methyl-2-pentanone	ND	0.50	17		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Methylene chloride	0.51	0.49	5.2	J	mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
n-Butylbenzene	1.9	0.15	5.2	J	mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
n-Propylbenzene	4.2	0.13	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
sec-Butylbenzene	1.1	0.24	1.7	J	mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Styrene	ND	0.15	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
tert-Butylbenzene	ND	0.14	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,1,1,2-Tetrachloroethane	ND	0.16	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,1,2,2-Tetrachloroethane	ND	0.28	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Tetrachloroethene (PCE)	ND	0.14	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413

Refer to the QC Summary report and 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 **1605875**

Date Reported: 7/7/2016

CLIENT: Western Refining Company**Client Sample ID:** SWMU 10-20 (8-10')**Project:** SWMU 10**Collection Date:** 5/17/2016 1:25:00 PM**Lab ID:** 1605875-001**Matrix:** MEOH (SOIL) **Received Date:** 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
trans-1,2-DCE	ND	0.48	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
trans-1,3-Dichloropropene	ND	0.25	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,2,3-Trichlorobenzene	ND	0.26	3.4		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,2,4-Trichlorobenzene	ND	0.18	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,1,1-Trichloroethane	ND	0.10	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,1,2-Trichloroethane	ND	0.20	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Trichloroethene (TCE)	ND	0.18	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Trichlorofluoromethane	ND	0.13	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
1,2,3-Trichloropropane	ND	0.30	3.4		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Vinyl chloride	ND	0.14	1.7		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Xylenes, Total	72	0.33	3.4		mg/Kg-dr	50	5/23/2016 3:07:10 PM	D34413
Surr: Dibromofluoromethane	96.0		70-130		%Rec	50	5/23/2016 3:07:10 PM	D34413
Surr: 1,2-Dichloroethane-d4	87.9		70-130		%Rec	50	5/23/2016 3:07:10 PM	D34413
Surr: Toluene-d8	98.8		70-130		%Rec	50	5/23/2016 3:07:10 PM	D34413
Surr: 4-Bromofluorobenzene	108		70-130		%Rec	50	5/23/2016 3:07:10 PM	D34413
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF	
Gasoline Range Organics (GRO)	1100	26	170		mg/Kg-dr	50	5/23/2016 3:07:10 PM	C34413
Surr: BFB	103	0	70-130		%Rec	50	5/23/2016 3:07:10 PM	C34413

Refer to the QC Summary report and 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 1605875

Date Reported: 7/7/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-20 (10-12')

Project: SWMU 10

Collection Date: 5/17/2016 4:10:00 PM

Lab ID: 1605875-002

Matrix: MEOH (SOIL) **Received Date:** 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	3500	45	130		mg/Kg-dr	10	5/24/2016 5:28:01 PM	25449
Motor Oil Range Organics (MRO)	ND	630	630		mg/Kg-dr	10	5/24/2016 5:28:01 PM	25449
Surr: DNOP	0	0	70-130	S	%Rec	10	5/24/2016 5:28:01 PM	25449
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	21	1.0	1.0		wt%	1	5/23/2016	R34494
EPA METHOD 7471: MERCURY							Analyst: pmf	
Mercury	0.0041	0.00073	0.043	J	mg/Kg-dr	1	5/24/2016 12:56:36 PM	25448
EPA METHOD 6010B: SOIL METALS							Analyst: MED	
Antimony	3.7	1.5	3.2		mg/Kg-dr	1	5/24/2016 3:14:08 PM	25447
Arsenic	1.9	0.93	3.2	J	mg/Kg-dr	1	5/24/2016 3:14:08 PM	25447
Barium	250	0.062	0.13		mg/Kg-dr	1	6/1/2016 11:44:48 AM	25586
Beryllium	1.1	0.0059	0.19		mg/Kg-dr	1	5/24/2016 3:14:08 PM	25447
Cadmium	ND	0.081	0.13		mg/Kg-dr	1	5/24/2016 3:14:08 PM	25447
Chromium	10	0.16	0.38		mg/Kg-dr	1	5/24/2016 3:14:08 PM	25447
Cobalt	5.6	0.048	0.38		mg/Kg-dr	1	5/24/2016 3:14:08 PM	25447
Iron	21000	130	320		mg/Kg-dr	100	6/16/2016 8:25:18 AM	25586
Lead	6.0	0.22	0.32		mg/Kg-dr	1	5/24/2016 3:14:08 PM	25447
Manganese	190	0.056	0.13		mg/Kg-dr	1	5/24/2016 3:14:08 PM	25447
Nickel	10	0.14	0.63		mg/Kg-dr	1	5/24/2016 3:14:08 PM	25447
Selenium	ND	1.4	3.2		mg/Kg-dr	1	5/26/2016 3:28:09 PM	25447
Silver	ND	0.040	0.32		mg/Kg-dr	1	5/24/2016 3:14:08 PM	25447
Vanadium	19	0.044	3.2		mg/Kg-dr	1	5/24/2016 3:14:08 PM	25447
Zinc	18	0.72	3.2		mg/Kg-dr	1	5/24/2016 3:14:08 PM	25447
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Acenaphthylene	ND	0.10	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Aniline	ND	0.12	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Anthracene	ND	0.084	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Azobenzene	ND	0.15	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Benz(a)anthracene	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Benzo(a)pyrene	ND	0.096	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Benzo(b)fluoranthene	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Benzo(g,h,i)perylene	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Benzo(k)fluoranthene	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Benzoic acid	ND	0.10	0.63		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Benzyl alcohol	ND	0.099	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Bis(2-chloroethoxy)methane	ND	0.14	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469

Refer to the QC Summary report and 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 1605875

Date Reported: 7/7/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-20 (10-12')

Project: SWMU 10

Collection Date: 5/17/2016 4:10:00 PM

Lab ID: 1605875-002

Matrix: MEOH (SOIL) **Received Date:** 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Bis(2-chloroethyl)ether	ND	0.093	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Bis(2-chloroisopropyl)ether	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Bis(2-ethylhexyl)phthalate	ND	0.10	0.63		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
4-Bromophenyl phenyl ether	ND	0.12	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Butyl benzyl phthalate	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Carbazole	ND	0.085	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
4-Chloro-3-methylphenol	ND	0.15	0.63		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
4-Chloroaniline	ND	0.14	0.63		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
2-Chloronaphthalene	ND	0.099	0.32		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
2-Chlorophenol	ND	0.099	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
4-Chlorophenyl phenyl ether	ND	0.14	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Chrysene	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Di-n-butyl phthalate	ND	0.094	0.51		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Di-n-octyl phthalate	ND	0.11	0.51		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Dibenz(a,h)anthracene	ND	0.10	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Dibenzofuran	ND	0.13	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
1,2-Dichlorobenzene	ND	0.097	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
1,3-Dichlorobenzene	ND	0.098	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
1,4-Dichlorobenzene	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
3,3'-Dichlorobenzidine	ND	0.093	0.32		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Diethyl phthalate	ND	0.13	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Dimethyl phthalate	ND	0.12	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
2,4-Dichlorophenol	ND	0.12	0.51		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
2,4-Dimethylphenol	11	1.4	3.8		mg/Kg-dr	10	5/26/2016 2:21:31 PM	25469
4,6-Dinitro-2-methylphenol	ND	0.076	0.51		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
2,4-Dinitrophenol	ND	0.084	0.63		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
2,4-Dinitrotoluene	ND	0.11	0.63		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
2,6-Dinitrotoluene	ND	0.13	0.63		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Fluoranthene	ND	0.073	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Fluorene	2.1	0.12	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Hexachlorobenzene	ND	0.10	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Hexachlorobutadiene	ND	0.14	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Hexachlorocyclopentadiene	ND	0.14	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Hexachloroethane	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Indeno(1,2,3-cd)pyrene	ND	0.099	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
1-Methylnaphthalene	18	1.3	2.5		mg/Kg-dr	10	5/26/2016 2:21:31 PM	25469
2-Methylnaphthalene	31	1.5	2.5		mg/Kg-dr	10	5/26/2016 2:21:31 PM	25469
2-Methylphenol	24	1.1	5.1		mg/Kg-dr	10	5/26/2016 2:21:31 PM	25469
3+4-Methylphenol	43	0.91	2.5		mg/Kg-dr	10	5/26/2016 2:21:31 PM	25469

Refer to the QC Summary report and 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 1605875

Date Reported: 7/7/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-20 (10-12')

Project: SWMU 10

Collection Date: 5/17/2016 4:10:00 PM

Lab ID: 1605875-002

Matrix: MEOH (SOIL) **Received Date:** 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
N-Nitrosodi-n-propylamine	ND	0.12	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
N-Nitrosodiphenylamine	ND	0.12	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Naphthalene	8.5	1.2	2.5		mg/Kg-dr	10	5/26/2016 2:21:31 PM	25469
2-Nitroaniline	ND	0.14	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
3-Nitroaniline	ND	0.11	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
4-Nitroaniline	ND	0.089	0.51		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Nitrobenzene	ND	0.13	0.51		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
2-Nitrophenol	ND	0.13	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
4-Nitrophenol	ND	0.096	0.32		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Pentachlorophenol	ND	0.081	0.51		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Phenanthrene	5.0	0.086	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Phenol	34	0.95	2.5		mg/Kg-dr	10	5/26/2016 2:21:31 PM	25469
Pyrene	0.33	0.095	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Pyridine	ND	0.10	0.51		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
1,2,4-Trichlorobenzene	ND	0.14	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
2,4,5-Trichlorophenol	ND	0.13	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
2,4,6-Trichlorophenol	ND	0.10	0.25		mg/Kg-dr	1	5/25/2016 4:51:35 PM	25469
Surr: 2-Fluorophenol	48.1	0	28.3-102		%Rec	1	5/25/2016 4:51:35 PM	25469
Surr: Phenol-d5	54.0	0	35.7-103		%Rec	1	5/25/2016 4:51:35 PM	25469
Surr: 2,4,6-Tribromophenol	26.5	0	35.2-108	S	%Rec	1	5/25/2016 4:51:35 PM	25469
Surr: Nitrobenzene-d5	94.6		24-118		%Rec	1	5/25/2016 4:51:35 PM	25469
Surr: 2-Fluorobiphenyl	50.3		35.4-111		%Rec	1	5/25/2016 4:51:35 PM	25469
Surr: 4-Terphenyl-d14	47.7		15-91.7		%Rec	1	5/25/2016 4:51:35 PM	25469
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Benzene	2.2	0.66	0.82		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Toluene	18	0.097	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Ethylbenzene	4.5	0.13	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Methyl tert-butyl ether (MTBE)	ND	0.52	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,2,4-Trimethylbenzene	13	0.12	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,3,5-Trimethylbenzene	4.6	0.12	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,2-Dichloroethane (EDC)	ND	0.43	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,2-Dibromoethane (EDB)	ND	0.12	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Naphthalene	12	0.26	3.3		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1-Methylnaphthalene	25	0.37	6.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
2-Methylnaphthalene	42	0.35	6.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Acetone	ND	2.1	25		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Bromobenzene	ND	0.13	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Bromodichloromethane	ND	0.096	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Bromoform	ND	0.20	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413

Refer to the QC Summary report and 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 10-20 (10-12')**Project:** SWMU 10**Collection Date:** 5/17/2016 4:10:00 PM**Lab ID:** 1605875-002**Matrix:** MEOH (SOIL) **Received Date:** 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Bromomethane	ND	0.60	4.9		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
2-Butanone	ND	0.94	16		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Carbon disulfide	ND	0.54	16		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Carbon tetrachloride	ND	0.11	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Chlorobenzene	ND	0.13	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Chloroethane	ND	0.33	3.3		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Chloroform	ND	0.12	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Chloromethane	ND	0.15	4.9		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
2-Chlorotoluene	ND	0.12	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
4-Chlorotoluene	ND	0.15	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
cis-1,2-DCE	ND	0.095	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
cis-1,3-Dichloropropene	ND	0.15	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,2-Dibromo-3-chloropropane	ND	0.50	3.3		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Dibromochloromethane	ND	0.15	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Dibromomethane	ND	0.14	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,2-Dichlorobenzene	ND	0.14	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,3-Dichlorobenzene	ND	0.13	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,4-Dichlorobenzene	ND	0.20	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Dichlorodifluoromethane	ND	0.51	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,1-Dichloroethane	ND	0.089	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,1-Dichloroethene	ND	0.54	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,2-Dichloropropane	ND	0.14	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,3-Dichloropropane	ND	0.19	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
2,2-Dichloropropane	ND	0.094	3.3		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,1-Dichloropropene	ND	0.13	3.3		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Hexachlorobutadiene	ND	0.20	3.3		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
2-Hexanone	ND	0.89	16		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Isopropylbenzene	0.92	0.14	1.6	J	mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
4-Isopropyltoluene	0.41	0.15	1.6	J	mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
4-Methyl-2-pentanone	ND	0.48	16		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Methylene chloride	0.50	0.47	4.9	J	mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
n-Butylbenzene	0.97	0.15	4.9	J	mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
n-Propylbenzene	1.9	0.13	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
sec-Butylbenzene	0.49	0.23	1.6	J	mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Styrene	ND	0.15	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
tert-Butylbenzene	ND	0.14	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,1,1,2-Tetrachloroethane	ND	0.16	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,1,2,2-Tetrachloroethane	ND	0.27	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Tetrachloroethene (PCE)	ND	0.14	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413

Refer to the QC Summary report and 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 **1605875**

Date Reported: 7/7/2016

CLIENT: Western Refining Company**Client Sample ID:** SWMU 10-20 (10-12')**Project:** SWMU 10**Collection Date:** 5/17/2016 4:10:00 PM**Lab ID:** 1605875-002**Matrix:** MEOH (SOIL) **Received Date:** 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
trans-1,2-DCE	ND	0.46	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
trans-1,3-Dichloropropene	ND	0.24	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,2,3-Trichlorobenzene	ND	0.25	3.3		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,2,4-Trichlorobenzene	ND	0.18	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,1,1-Trichloroethane	ND	0.10	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,1,2-Trichloroethane	ND	0.19	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Trichloroethene (TCE)	ND	0.18	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Trichlorofluoromethane	ND	0.12	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
1,2,3-Trichloropropane	ND	0.28	3.3		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Vinyl chloride	ND	0.13	1.6		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Xylenes, Total	34	0.31	3.3		mg/Kg-dr	50	5/23/2016 3:35:28 PM	D34413
Surr: Dibromofluoromethane	96.3		70-130		%Rec	50	5/23/2016 3:35:28 PM	D34413
Surr: 1,2-Dichloroethane-d4	90.7		70-130		%Rec	50	5/23/2016 3:35:28 PM	D34413
Surr: Toluene-d8	101		70-130		%Rec	50	5/23/2016 3:35:28 PM	D34413
Surr: 4-Bromofluorobenzene	105		70-130		%Rec	50	5/23/2016 3:35:28 PM	D34413
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF	
Gasoline Range Organics (GRO)	640	25	160		mg/Kg-dr	50	5/23/2016 3:35:28 PM	C34413
Surr: BFB	101	0	70-130		%Rec	50	5/23/2016 3:35:28 PM	C34413

Refer to the QC Summary report and 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 1605875

Date Reported: 7/7/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-20 (16-18')

Project: SWMU 10

Collection Date: 5/17/2016 4:25:00 PM

Lab ID: 1605875-003

Matrix: MEOH (SOIL) **Received Date:** 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	380	4.1	11		mg/Kg-dr	1	5/24/2016 6:11:35 PM	25449
Motor Oil Range Organics (MRO)	ND	57	57		mg/Kg-dr	1	5/24/2016 6:11:35 PM	25449
Surr: DNOP	104	0	70-130		%Rec	1	5/24/2016 6:11:35 PM	25449
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	16	1.0	1.0		wt%	1	5/23/2016	R34494
EPA METHOD 7471: MERCURY							Analyst: pmf	
Mercury	0.37	0.00068	0.040		mg/Kg-dr	1	5/24/2016 12:58:23 PM	25448
EPA METHOD 6010B: SOIL METALS							Analyst: MED	
Antimony	2.5	1.4	3.0	J	mg/Kg-dr	1	5/24/2016 3:17:48 PM	25447
Arsenic	2.2	0.87	3.0	J	mg/Kg-dr	1	5/24/2016 3:17:48 PM	25447
Barium	210	0.058	0.12		mg/Kg-dr	1	6/1/2016 11:47:38 AM	25586
Beryllium	0.87	0.0055	0.18		mg/Kg-dr	1	5/24/2016 3:17:48 PM	25447
Cadmium	ND	0.075	0.12		mg/Kg-dr	1	5/24/2016 3:17:48 PM	25447
Chromium	21	0.15	0.36		mg/Kg-dr	1	5/24/2016 3:17:48 PM	25447
Cobalt	5.5	0.045	0.36		mg/Kg-dr	1	5/24/2016 3:17:48 PM	25447
Iron	17000	120	300		mg/Kg-dr	100	6/16/2016 8:26:23 AM	25586
Lead	5.3	0.21	0.30		mg/Kg-dr	1	5/24/2016 3:17:48 PM	25447
Manganese	750	0.26	0.59		mg/Kg-dr	5	5/26/2016 3:31:06 PM	25447
Nickel	10	0.14	0.59		mg/Kg-dr	1	5/24/2016 3:17:48 PM	25447
Selenium	ND	1.3	3.0		mg/Kg-dr	1	5/26/2016 3:32:29 PM	25447
Silver	ND	0.038	0.30		mg/Kg-dr	1	5/24/2016 3:17:48 PM	25447
Vanadium	18	0.041	3.0		mg/Kg-dr	1	5/24/2016 3:17:48 PM	25447
Zinc	26	0.68	3.0		mg/Kg-dr	1	5/24/2016 3:17:48 PM	25447
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Acenaphthylene	ND	0.097	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Aniline	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Anthracene	ND	0.079	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Azobenzene	ND	0.15	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Benz(a)anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Benzo(a)pyrene	ND	0.090	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Benzo(g,h,i)perylene	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Benzo(k)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Benzoic acid	ND	0.099	0.60		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Benzyl alcohol	ND	0.094	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Bis(2-chloroethoxy)methane	ND	0.13	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469

Refer to the QC Summary report and 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 10-20 (16-18')

Project: SWMU 10

Collection Date: 5/17/2016 4:25:00 PM

Lab ID: 1605875-003

Matrix: MEOH (SOIL) Received Date: 5/18/2016 4:00:00 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	5/25/2016 5:21:51 PM	25469
Bis(2-chloroisopropyl)ether	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Bis(2-ethylhexyl)phthalate	ND	0.097	0.60		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
4-Bromophenyl phenyl ether	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Butyl benzyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Carbazole	ND	0.081	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
4-Chloro-3-methylphenol	ND	0.14	0.60		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
4-Chloroaniline	ND	0.13	0.60		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
2-Chloronaphthalene	ND	0.094	0.30		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
2-Chlorophenol	ND	0.094	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
4-Chlorophenyl phenyl ether	ND	0.14	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Chrysene	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Di-n-butyl phthalate	ND	0.089	0.48		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Di-n-octyl phthalate	ND	0.10	0.48		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Dibenz(a,h)anthracene	ND	0.097	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Dibenzofuran	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
1,2-Dichlorobenzene	ND	0.092	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
1,3-Dichlorobenzene	ND	0.092	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
1,4-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
3,3'-Dichlorobenzidine	ND	0.088	0.30		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Diethyl phthalate	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Dimethyl phthalate	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
2,4-Dichlorophenol	ND	0.11	0.48		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
2,4-Dimethylphenol	8.3	1.3	3.6		mg/Kg-dr	10	5/26/2016 2:51:40 PM	25469
4,6-Dinitro-2-methylphenol	ND	0.072	0.48		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
2,4-Dinitrophenol	ND	0.079	0.60		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
2,4-Dinitrotoluene	ND	0.11	0.60		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
2,6-Dinitrotoluene	ND	0.13	0.60		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Fluoranthene	ND	0.069	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Fluorene	0.49	0.11	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Hexachlorobenzene	ND	0.094	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Hexachlorobutadiene	ND	0.13	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Hexachlorocyclopentadiene	ND	0.14	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Hexachloroethane	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Indeno(1,2,3-cd)pyrene	ND	0.093	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
1-Methylnaphthalene	2.2	0.12	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
2-Methylnaphthalene	3.7	0.14	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
2-Methylphenol	17	1.0	4.8		mg/Kg-dr	10	5/26/2016 2:51:40 PM	25469
3+4-Methylphenol	26	0.87	2.4		mg/Kg-dr	10	5/26/2016 2:51:40 PM	25469

Refer to the QC Summary report and 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 10-20 (16-18')

Project: SWMU 10

Collection Date: 5/17/2016 4:25:00 PM

Lab ID: 1605875-003

Matrix: MEOH (SOIL) Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
N-Nitrosodi-n-propylamine	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
N-Nitrosodiphenylamine	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Naphthalene	0.73	0.11	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
4-Nitroaniline	ND	0.084	0.48		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Nitrobenzene	ND	0.12	0.48		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
2-Nitrophenol	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
4-Nitrophenol	ND	0.091	0.30		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Pentachlorophenol	ND	0.077	0.48		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Phenanthrene	1.0	0.081	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Phenol	18	0.90	2.4		mg/Kg-dr	10	5/26/2016 2:51:40 PM	25469
Pyrene	0.13	0.090	0.24	J	mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Pyridine	ND	0.095	0.48		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
1,2,4-Trichlorobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
2,4,5-Trichlorophenol	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
2,4,6-Trichlorophenol	ND	0.099	0.24		mg/Kg-dr	1	5/25/2016 5:21:51 PM	25469
Surr: 2-Fluorophenol	50.5	0	28.3-102		%Rec	1	5/25/2016 5:21:51 PM	25469
Surr: Phenol-d5	58.3	0	35.7-103		%Rec	1	5/25/2016 5:21:51 PM	25469
Surr: 2,4,6-Tribromophenol	72.8	0	35.2-108		%Rec	1	5/25/2016 5:21:51 PM	25469
Surr: Nitrobenzene-d5	59.4		24-118		%Rec	1	5/25/2016 5:21:51 PM	25469
Surr: 2-Fluorobiphenyl	75.0		35.4-111		%Rec	1	5/25/2016 5:21:51 PM	25469
Surr: 4-Terphenyl-d14	64.8		15-91.7		%Rec	1	5/25/2016 5:21:51 PM	25469
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Benzene	0.36	0.25	0.31		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Toluene	2.3	0.037	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Ethylbenzene	0.63	0.051	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Methyl tert-butyl ether (MTBE)	ND	0.20	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,2,4-Trimethylbenzene	4.0	0.046	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,3,5-Trimethylbenzene	1.7	0.045	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,2-Dichloroethane (EDC)	ND	0.16	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,2-Dibromoethane (EDB)	ND	0.044	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Naphthalene	3.1	0.097	1.2		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1-Methylnaphthalene	8.4	0.14	2.5		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
2-Methylnaphthalene	13	0.13	2.5		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Acetone	ND	0.80	9.3		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Bromobenzene	ND	0.050	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Bromodichloromethane	ND	0.036	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Bromoform	ND	0.076	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413

Refer to the QC Summary report and 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 10-20 (16-18')**Project:** SWMU 10**Collection Date:** 5/17/2016 4:25:00 PM**Lab ID:** 1605875-003**Matrix:** MEOH (SOIL) **Received Date:** 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Bromomethane	ND	0.23	1.9		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
2-Butanone	ND	0.36	6.2		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Carbon disulfide	ND	0.21	6.2		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Carbon tetrachloride	ND	0.041	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Chlorobenzene	ND	0.051	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Chloroethane	ND	0.12	1.2		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Chloroform	ND	0.047	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Chloromethane	ND	0.055	1.9		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
2-Chlorotoluene	ND	0.046	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
4-Chlorotoluene	ND	0.055	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
cis-1,2-DCE	ND	0.036	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
cis-1,3-Dichloropropene	ND	0.057	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,2-Dibromo-3-chloropropane	ND	0.19	1.2		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Dibromochloromethane	ND	0.056	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Dibromomethane	ND	0.054	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,2-Dichlorobenzene	ND	0.054	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,3-Dichlorobenzene	ND	0.051	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,4-Dichlorobenzene	ND	0.077	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Dichlorodifluoromethane	ND	0.19	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,1-Dichloroethane	ND	0.034	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,1-Dichloroethene	ND	0.20	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,2-Dichloropropane	ND	0.052	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,3-Dichloropropane	ND	0.071	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
2,2-Dichloropropane	ND	0.036	1.2		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,1-Dichloropropene	ND	0.049	1.2		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Hexachlorobutadiene	ND	0.076	1.2		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
2-Hexanone	ND	0.34	6.2		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Isopropylbenzene	0.17	0.053	0.62	J	mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
4-Isopropyltoluene	0.34	0.056	0.62	J	mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
4-Methyl-2-pentanone	ND	0.18	6.2		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Methylene chloride	ND	0.18	1.9		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
n-Butylbenzene	0.28	0.055	1.9	J	mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
n-Propylbenzene	0.36	0.048	0.62	J	mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
sec-Butylbenzene	0.16	0.086	0.62	J	mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Styrene	ND	0.056	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
tert-Butylbenzene	ND	0.052	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,1,1,2-Tetrachloroethane	ND	0.060	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,1,2,2-Tetrachloroethane	ND	0.10	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Tetrachloroethene (PCE)	ND	0.052	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413

Refer to the QC Summary report and 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 1605875

Date Reported: 7/7/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-20 (16-18')

Project: SWMU 10

Collection Date: 5/17/2016 4:25:00 PM

Lab ID: 1605875-003

Matrix: MEOH (SOIL) Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
trans-1,2-DCE	ND	0.17	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
trans-1,3-Dichloropropene	ND	0.091	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,2,3-Trichlorobenzene	ND	0.093	1.2		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,2,4-Trichlorobenzene	ND	0.067	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,1,1-Trichloroethane	ND	0.038	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,1,2-Trichloroethane	ND	0.073	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Trichloroethene (TCE)	ND	0.067	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Trichlorofluoromethane	ND	0.047	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
1,2,3-Trichloropropane	ND	0.11	1.2		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Vinyl chloride	ND	0.051	0.62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Xylenes, Total	7.0	0.12	1.2		mg/Kg-dr	20	5/23/2016 4:03:54 PM	D34413
Surr: Dibromofluoromethane	97.8		70-130		%Rec	20	5/23/2016 4:03:54 PM	D34413
Surr: 1,2-Dichloroethane-d4	88.5		70-130		%Rec	20	5/23/2016 4:03:54 PM	D34413
Surr: Toluene-d8	99.4		70-130		%Rec	20	5/23/2016 4:03:54 PM	D34413
Surr: 4-Bromofluorobenzene	110		70-130		%Rec	20	5/23/2016 4:03:54 PM	D34413
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF	
Gasoline Range Organics (GRO)	220	9.4	62		mg/Kg-dr	20	5/23/2016 4:03:54 PM	C34413
Surr: BFB	104	0	70-130		%Rec	20	5/23/2016 4:03:54 PM	C34413

Refer to the QC Summary report and 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 1605875

Date Reported: 7/7/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-20 (20-22')

Project: SWMU 10

Collection Date: 5/17/2016 4:35:00 PM

Lab ID: 1605875-004

Matrix: SOIL

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	ND	3.7	10		mg/Kg-dr	1	5/24/2016 6:55:08 PM	25449
Motor Oil Range Organics (MRO)	ND	52	52		mg/Kg-dr	1	5/24/2016 6:55:08 PM	25449
Surr: DNOP	107	0	70-130		%Rec	1	5/24/2016 6:55:08 PM	25449
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	12	1.0	1.0		wt%	1	5/23/2016	R34494
EPA METHOD 7471: MERCURY							Analyst: pmf	
Mercury	0.0012	0.00065	0.038	J	mg/Kg-dr	1	5/24/2016 1:00:12 PM	25448
EPA METHOD 6010B: SOIL METALS							Analyst: MED	
Antimony	3.3	1.3	2.8		mg/Kg-dr	1	5/24/2016 3:21:22 PM	25447
Arsenic	2.7	0.83	2.8	J	mg/Kg-dr	1	5/24/2016 3:21:22 PM	25447
Barium	750	0.28	0.58		mg/Kg-dr	5	6/1/2016 11:50:23 AM	25586
Beryllium	0.88	0.0052	0.17		mg/Kg-dr	1	5/24/2016 3:21:22 PM	25447
Cadmium	ND	0.072	0.11		mg/Kg-dr	1	5/24/2016 3:21:22 PM	25447
Chromium	12	0.14	0.34		mg/Kg-dr	1	5/24/2016 3:21:22 PM	25447
Cobalt	8.5	0.043	0.34		mg/Kg-dr	1	5/24/2016 3:21:22 PM	25447
Iron	20000	110	290		mg/Kg-dr	100	6/16/2016 8:27:30 AM	25586
Lead	3.5	0.20	0.28		mg/Kg-dr	1	5/24/2016 3:21:22 PM	25447
Manganese	1100	0.25	0.57		mg/Kg-dr	5	5/26/2016 3:35:34 PM	25447
Nickel	14	0.13	0.57		mg/Kg-dr	1	5/24/2016 3:21:22 PM	25447
Selenium	ND	1.2	2.8		mg/Kg-dr	1	5/26/2016 3:36:57 PM	25447
Silver	ND	0.036	0.28		mg/Kg-dr	1	5/24/2016 3:21:22 PM	25447
Vanadium	16	0.039	2.8		mg/Kg-dr	1	5/24/2016 3:21:22 PM	25447
Zinc	27	0.65	2.8		mg/Kg-dr	1	5/24/2016 3:21:22 PM	25447
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	0.097	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Acenaphthylene	ND	0.092	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Aniline	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Anthracene	ND	0.075	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Azobenzene	ND	0.14	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Benz(a)anthracene	ND	0.097	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Benzo(a)pyrene	ND	0.085	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Benzo(b)fluoranthene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Benzo(g,h,i)perylene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Benzo(k)fluoranthene	ND	0.099	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Benzoic acid	ND	0.094	0.56		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Benzyl alcohol	ND	0.088	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Bis(2-chloroethoxy)methane	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469

Refer to the QC Summary report and 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 10-20 (20-22')

Project: SWMU 10

Collection Date: 5/17/2016 4:35:00 PM

Lab ID: 1605875-004

Matrix: SOIL

Received Date: 5/18/2016 4:00:00 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	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Bis(2-chloroisopropyl)ether	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Bis(2-ethylhexyl)phthalate	ND	0.092	0.56		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
4-Bromophenyl phenyl ether	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Butyl benzyl phthalate	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Carbazole	ND	0.076	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
4-Chloro-3-methylphenol	ND	0.13	0.56		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
4-Chloroaniline	ND	0.12	0.56		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
2-Chloronaphthalene	ND	0.089	0.28		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
2-Chlorophenol	ND	0.089	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
4-Chlorophenyl phenyl ether	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Chrysene	ND	0.096	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Di-n-butyl phthalate	ND	0.084	0.45		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Di-n-octyl phthalate	ND	0.096	0.45		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Dibenz(a,h)anthracene	ND	0.091	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Dibenzofuran	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
1,2-Dichlorobenzene	ND	0.086	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
1,3-Dichlorobenzene	ND	0.087	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
1,4-Dichlorobenzene	ND	0.095	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
3,3'-Dichlorobenzidine	ND	0.083	0.28		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Diethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
2,4-Dichlorophenol	ND	0.11	0.45		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
2,4-Dimethylphenol	ND	0.12	0.34		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
4,6-Dinitro-2-methylphenol	ND	0.068	0.45		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
2,4-Dinitrophenol	ND	0.075	0.56		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
2,4-Dinitrotoluene	ND	0.10	0.56		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
2,6-Dinitrotoluene	ND	0.12	0.56		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Fluoranthene	ND	0.065	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Fluorene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Hexachlorobenzene	ND	0.089	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Hexachlorobutadiene	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Hexachlorocyclopentadiene	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Hexachloroethane	ND	0.097	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Indeno(1,2,3-cd)pyrene	ND	0.088	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
1-Methylnaphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
2-Methylnaphthalene	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
2-Methylphenol	ND	0.094	0.45		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
3+4-Methylphenol	ND	0.082	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469

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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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-20 (20-22')

Project: SWMU 10

Collection Date: 5/17/2016 4:35:00 PM

Lab ID: 1605875-004

Matrix: SOIL

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
N-Nitrosodi-n-propylamine	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
N-Nitrosodiphenylamine	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Naphthalene	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
2-Nitroaniline	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
3-Nitroaniline	ND	0.099	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
4-Nitroaniline	ND	0.080	0.45		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Nitrobenzene	ND	0.12	0.45		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
2-Nitrophenol	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
4-Nitrophenol	ND	0.086	0.28		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Pentachlorophenol	ND	0.073	0.45		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Phenanthrene	ND	0.077	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Phenol	ND	0.085	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Pyrene	ND	0.085	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Pyridine	ND	0.089	0.45		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
2,4,5-Trichlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
2,4,6-Trichlorophenol	ND	0.094	0.23		mg/Kg-dr	1	5/25/2016 5:52:17 PM	25469
Surr: 2-Fluorophenol	52.6	0	28.3-102		%Rec	1	5/25/2016 5:52:17 PM	25469
Surr: Phenol-d5	53.6	0	35.7-103		%Rec	1	5/25/2016 5:52:17 PM	25469
Surr: 2,4,6-Tribromophenol	64.3	0	35.2-108		%Rec	1	5/25/2016 5:52:17 PM	25469
Surr: Nitrobenzene-d5	55.4		24-118		%Rec	1	5/25/2016 5:52:17 PM	25469
Surr: 2-Fluorobiphenyl	59.6		35.4-111		%Rec	1	5/25/2016 5:52:17 PM	25469
Surr: 4-Terphenyl-d14	55.3		15-91.7		%Rec	1	5/25/2016 5:52:17 PM	25469
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Benzene	8.07	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Toluene	6.45	0.292	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Ethylbenzene	1.38	0.325	2.42	J	µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Methyl tert-butyl ether (MTBE)	ND	0.406	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,2,4-Trimethylbenzene	0.821	0.410	2.42	J	µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,3,5-Trimethylbenzene	ND	0.399	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,2-Dichloroethane (EDC)	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,2-Dibromoethane (EDB)	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Naphthalene	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1-Methylnaphthalene	ND	0.275	4.83		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
2-Methylnaphthalene	ND	0.636	4.83		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Acetone	5.41	0.715	12.1	J	µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Bromobenzene	ND	0.246	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Bromodichloromethane	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Bromoform	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468

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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 1605875

Date Reported: 7/7/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-20 (20-22')

Project: SWMU 10

Collection Date: 5/17/2016 4:35:00 PM

Lab ID: 1605875-004

Matrix: SOIL

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Bromomethane	ND	0.435	3.62		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
2-Butanone	ND	0.871	12.1		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Carbon disulfide	ND	0.893	12.1		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Carbon tetrachloride	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Chlorobenzene	ND	0.277	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Chloroethane	ND	0.446	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Chloroform	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Chloromethane	ND	0.612	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
2-Chlorotoluene	ND	0.411	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
4-Chlorotoluene	ND	0.402	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
cis-1,2-DCE	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
cis-1,3-Dichloropropene	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,2-Dibromo-3-chloropropane	ND	0.257	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Dibromochloromethane	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Dibromomethane	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,2-Dichlorobenzene	ND	0.352	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,3-Dichlorobenzene	ND	0.446	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,4-Dichlorobenzene	ND	0.452	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Dichlorodifluoromethane	ND	1.41	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,1-Dichloroethane	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,1-Dichloroethene	ND	0.396	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,2-Dichloropropane	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,3-Dichloropropane	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
2,2-Dichloropropane	ND	0.305	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,1-Dichloropropene	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Hexachlorobutadiene	ND	0.551	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
2-Hexanone	ND	0.602	12.1		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Isopropylbenzene	ND	0.304	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
4-Isopropyltoluene	ND	0.453	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
4-Methyl-2-pentanone	ND	4.83	12.1		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Methylene chloride	ND	2.42	3.62		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
n-Butylbenzene	ND	0.588	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
n-Propylbenzene	ND	0.432	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
sec-Butylbenzene	ND	0.429	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Styrene	ND	0.309	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
tert-Butylbenzene	ND	0.353	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,1,1,2-Tetrachloroethane	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,1,2,2-Tetrachloroethane	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Tetrachloroethene (PCE)	ND	0.317	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468

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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
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Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1605875

Date Reported: 7/7/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-20 (20-22')

Project: SWMU 10

Collection Date: 5/17/2016 4:35:00 PM

Lab ID: 1605875-004

Matrix: SOIL

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
trans-1,2-DCE	ND	0.244	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
trans-1,3-Dichloropropene	ND	0.292	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,2,3-Trichlorobenzene	ND	0.585	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,2,4-Trichlorobenzene	ND	0.733	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,1,1-Trichloroethane	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,1,2-Trichloroethane	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Trichloroethene (TCE)	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Trichlorofluoromethane	ND	0.304	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
1,2,3-Trichloropropane	ND	2.42	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Vinyl chloride	ND	0.635	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Xylenes, Total	3.56	0.963	2.42		µg/Kg-dry	1	5/25/2016 3:43:00 PM	25468
Surr: 1,2-Dichloroethane-d4	97.8	0	70-130		%Rec	1	5/25/2016 3:43:00 PM	25468
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	5/25/2016 3:43:00 PM	25468
Surr: Dibromofluoromethane	90.0	0	70-130		%Rec	1	5/25/2016 3:43:00 PM	25468
Surr: Toluene-d8	97.1	0	70-130		%Rec	1	5/25/2016 3:43:00 PM	25468
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF	
Gasoline Range Organics (GRO)	ND	0.52	3.5		mg/Kg-dr	1	5/23/2016 6:54:00 PM	C34413
Surr: BFB	96.7	0	70-130		%Rec	1	5/23/2016 6:54:00 PM	C34413

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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 1605875

Date Reported: 7/7/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-19 (2-2.5')

Project: SWMU 10

Collection Date: 5/17/2016 9:15:00 AM

Lab ID: 1605875-005

Matrix: SOIL

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	ND	4.3	12		mg/Kg-dr	1	5/24/2016 7:16:55 PM	25449
Motor Oil Range Organics (MRO)	ND	60	60		mg/Kg-dr	1	5/24/2016 7:16:55 PM	25449
Surr: DNOP	106	0	70-130		%Rec	1	5/24/2016 7:16:55 PM	25449
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	17	1.0	1.0		wt%	1	5/23/2016	R34494
EPA METHOD 7471: MERCURY							Analyst: pmf	
Mercury	0.0020	0.00069	0.040	J	mg/Kg-dr	1	5/24/2016 1:02:01 PM	25448
EPA METHOD 6010B: SOIL METALS							Analyst: MED	
Antimony	4.0	1.4	3.0		mg/Kg-dr	1	5/26/2016 3:43:58 PM	25447
Arsenic	1.9	0.87	3.0	J	mg/Kg-dr	1	5/26/2016 3:43:58 PM	25447
Barium	160	0.28	0.58		mg/Kg-dr	5	6/1/2016 11:58:23 AM	25586
Beryllium	1.2	0.0055	0.18		mg/Kg-dr	1	5/26/2016 3:43:58 PM	25447
Cadmium	ND	0.076	0.12		mg/Kg-dr	1	5/26/2016 3:43:58 PM	25447
Chromium	9.3	0.15	0.36		mg/Kg-dr	1	5/26/2016 3:43:58 PM	25447
Cobalt	5.2	0.045	0.36		mg/Kg-dr	1	5/26/2016 3:43:58 PM	25447
Iron	18000	110	290		mg/Kg-dr	100	6/16/2016 8:28:36 AM	25586
Lead	5.1	0.21	0.30		mg/Kg-dr	1	5/26/2016 3:43:58 PM	25447
Manganese	280	0.053	0.12		mg/Kg-dr	1	5/26/2016 3:43:58 PM	25447
Nickel	9.8	0.14	0.60		mg/Kg-dr	1	5/26/2016 3:43:58 PM	25447
Selenium	ND	1.3	3.0		mg/Kg-dr	1	5/26/2016 3:43:58 PM	25447
Silver	ND	0.038	0.30		mg/Kg-dr	1	5/26/2016 3:43:58 PM	25447
Vanadium	17	0.042	3.0		mg/Kg-dr	1	5/26/2016 3:43:58 PM	25447
Zinc	17	0.68	3.0		mg/Kg-dr	1	5/26/2016 3:43:58 PM	25447
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Acenaphthylene	ND	0.097	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Aniline	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Anthracene	ND	0.079	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Azobenzene	ND	0.15	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Benz(a)anthracene	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Benzo(a)pyrene	ND	0.091	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Benzo(b)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Benzo(g,h,i)perylene	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Benzo(k)fluoranthene	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Benzoic acid	ND	0.099	0.60		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Benzyl alcohol	ND	0.094	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Bis(2-chloroethoxy)methane	ND	0.13	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469

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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 10-19 (2-2.5')

Project: SWMU 10

Collection Date: 5/17/2016 9:15:00 AM

Lab ID: 1605875-005

Matrix: SOIL

Received Date: 5/18/2016 4:00:00 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	5/25/2016 6:22:06 PM	25469
Bis(2-chloroisopropyl)ether	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Bis(2-ethylhexyl)phthalate	ND	0.098	0.60		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
4-Bromophenyl phenyl ether	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Butyl benzyl phthalate	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Carbazole	ND	0.081	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
4-Chloro-3-methylphenol	ND	0.14	0.60		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
4-Chloroaniline	ND	0.13	0.60		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
2-Chloronaphthalene	ND	0.094	0.30		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
2-Chlorophenol	ND	0.094	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
4-Chlorophenyl phenyl ether	ND	0.14	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Chrysene	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Di-n-butyl phthalate	ND	0.089	0.48		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Di-n-octyl phthalate	ND	0.10	0.48		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Dibenz(a,h)anthracene	ND	0.097	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Dibenzofuran	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
1,2-Dichlorobenzene	ND	0.092	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
1,3-Dichlorobenzene	ND	0.093	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
1,4-Dichlorobenzene	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
3,3'-Dichlorobenzidine	ND	0.088	0.30		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Diethyl phthalate	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Dimethyl phthalate	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
2,4-Dichlorophenol	ND	0.11	0.48		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
2,4-Dimethylphenol	ND	0.13	0.36		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
4,6-Dinitro-2-methylphenol	ND	0.072	0.48		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
2,4-Dinitrophenol	ND	0.079	0.60		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
2,4-Dinitrotoluene	ND	0.11	0.60		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
2,6-Dinitrotoluene	ND	0.13	0.60		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Fluoranthene	ND	0.069	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Fluorene	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Hexachlorobenzene	ND	0.094	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Hexachlorobutadiene	ND	0.13	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Hexachlorocyclopentadiene	ND	0.14	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Hexachloroethane	ND	0.10	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Indeno(1,2,3-cd)pyrene	ND	0.093	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
1-Methylnaphthalene	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
2-Methylnaphthalene	ND	0.14	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
2-Methylphenol	ND	0.10	0.48		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
3+4-Methylphenol	ND	0.087	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469

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Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1605875

Date Reported: 7/7/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-19 (2-2.5')

Project: SWMU 10

Collection Date: 5/17/2016 9:15:00 AM

Lab ID: 1605875-005

Matrix: SOIL

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
N-Nitrosodi-n-propylamine	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
N-Nitrosodiphenylamine	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Naphthalene	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
2-Nitroaniline	ND	0.13	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
3-Nitroaniline	ND	0.11	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
4-Nitroaniline	ND	0.084	0.48		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Nitrobenzene	ND	0.12	0.48		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
2-Nitrophenol	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
4-Nitrophenol	ND	0.091	0.30		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Pentachlorophenol	ND	0.077	0.48		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Phenanthrene	ND	0.081	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Phenol	ND	0.090	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Pyrene	ND	0.090	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Pyridine	ND	0.095	0.48		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
1,2,4-Trichlorobenzene	ND	0.13	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
2,4,5-Trichlorophenol	ND	0.12	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
2,4,6-Trichlorophenol	ND	0.099	0.24		mg/Kg-dr	1	5/25/2016 6:22:06 PM	25469
Surr: 2-Fluorophenol	52.3	0	28.3-102		%Rec	1	5/25/2016 6:22:06 PM	25469
Surr: Phenol-d5	61.0	0	35.7-103		%Rec	1	5/25/2016 6:22:06 PM	25469
Surr: 2,4,6-Tribromophenol	73.7	0	35.2-108		%Rec	1	5/25/2016 6:22:06 PM	25469
Surr: Nitrobenzene-d5	64.0		24-118		%Rec	1	5/25/2016 6:22:06 PM	25469
Surr: 2-Fluorobiphenyl	66.1		35.4-111		%Rec	1	5/25/2016 6:22:06 PM	25469
Surr: 4-Terphenyl-d14	70.1		15-91.7		%Rec	1	5/25/2016 6:22:06 PM	25469
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Benzene	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Toluene	1.09	0.302	2.50	J	µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Ethylbenzene	ND	0.336	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Methyl tert-butyl ether (MTBE)	ND	0.420	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,2,4-Trimethylbenzene	ND	0.424	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,3,5-Trimethylbenzene	ND	0.412	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,2-Dichloroethane (EDC)	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,2-Dibromoethane (EDB)	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Naphthalene	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1-Methylnaphthalene	ND	0.284	4.99		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
2-Methylnaphthalene	ND	0.657	4.99		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Acetone	12.1	0.739	12.5	J	µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Bromobenzene	ND	0.254	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Bromodichloromethane	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Bromoform	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468

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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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1605875

Date Reported: 7/7/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-19 (2-2.5')

Project: SWMU 10

Collection Date: 5/17/2016 9:15:00 AM

Lab ID: 1605875-005

Matrix: SOIL

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Bromomethane	ND	0.450	3.75		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
2-Butanone	ND	0.900	12.5		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Carbon disulfide	ND	0.924	12.5		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Carbon tetrachloride	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Chlorobenzene	ND	0.286	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Chloroethane	ND	0.461	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Chloroform	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Chloromethane	ND	0.633	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
2-Chlorotoluene	ND	0.425	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
4-Chlorotoluene	ND	0.415	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
cis-1,2-DCE	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
cis-1,3-Dichloropropene	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,2-Dibromo-3-chloropropane	ND	0.266	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Dibromochloromethane	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Dibromomethane	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,2-Dichlorobenzene	ND	0.364	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,3-Dichlorobenzene	ND	0.461	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,4-Dichlorobenzene	ND	0.467	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Dichlorodifluoromethane	ND	1.46	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,1-Dichloroethane	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,1-Dichloroethene	ND	0.409	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,2-Dichloropropane	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,3-Dichloropropane	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
2,2-Dichloropropane	ND	0.315	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,1-Dichloropropene	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Hexachlorobutadiene	ND	0.569	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
2-Hexanone	ND	0.622	12.5		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Isopropylbenzene	ND	0.314	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
4-Isopropyltoluene	ND	0.469	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
4-Methyl-2-pentanone	ND	4.99	12.5		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Methylene chloride	ND	2.50	3.75		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
n-Butylbenzene	ND	0.608	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
n-Propylbenzene	ND	0.447	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
sec-Butylbenzene	ND	0.443	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Styrene	ND	0.319	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
tert-Butylbenzene	ND	0.365	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,1,1,2-Tetrachloroethane	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,1,2,2-Tetrachloroethane	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Tetrachloroethene (PCE)	ND	0.328	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468

Refer to the QC Summary report and 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 1605875

Date Reported: 7/7/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-19 (2-2.5')

Project: SWMU 10

Collection Date: 5/17/2016 9:15:00 AM

Lab ID: 1605875-005

Matrix: SOIL

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
trans-1,2-DCE	ND	0.252	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
trans-1,3-Dichloropropene	ND	0.302	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,2,3-Trichlorobenzene	ND	0.604	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,2,4-Trichlorobenzene	ND	0.757	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,1,1-Trichloroethane	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,1,2-Trichloroethane	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Trichloroethene (TCE)	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Trichlorofluoromethane	ND	0.314	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
1,2,3-Trichloropropane	ND	2.50	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Vinyl chloride	ND	0.657	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Xylenes, Total	ND	0.995	2.50		µg/Kg-dry	1	5/25/2016 4:08:00 PM	25468
Surr: 1,2-Dichloroethane-d4	100	0	70-130		%Rec	1	5/25/2016 4:08:00 PM	25468
Surr: 4-Bromofluorobenzene	103	0	70-130		%Rec	1	5/25/2016 4:08:00 PM	25468
Surr: Dibromofluoromethane	91.9	0	70-130		%Rec	1	5/25/2016 4:08:00 PM	25468
Surr: Toluene-d8	97.8	0	70-130		%Rec	1	5/25/2016 4:08:00 PM	25468
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF	
Gasoline Range Organics (GRO)	ND	0.64	4.3		mg/Kg-dr	1	5/23/2016 7:22:17 PM	C34413
Surr: BFB	101	0	70-130		%Rec	1	5/23/2016 7:22:17 PM	C34413

Refer to the QC Summary report and 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
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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
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Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1605875

Date Reported: 7/7/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-19 (12-14')

Project: SWMU 10

Collection Date: 5/17/2016 10:15:00 AM

Lab ID: 1605875-006

Matrix: MEOH (SOIL)

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	590	3.9	11		mg/Kg-dr	1	5/24/2016 7:38:32 PM	25449
Motor Oil Range Organics (MRO)	78	55	55		mg/Kg-dr	1	5/24/2016 7:38:32 PM	25449
Surr: DNOP	107	0	70-130		%Rec	1	5/24/2016 7:38:32 PM	25449
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	14	1.0	1.0		wt%	1	5/23/2016	R34494
EPA METHOD 7471: MERCURY							Analyst: pmf	
Mercury	0.0019	0.00064	0.037	J	mg/Kg-dr	1	5/24/2016 1:03:51 PM	25448
EPA METHOD 6010B: SOIL METALS							Analyst: MED	
Antimony	ND	6.9	14		mg/Kg-dr	5	5/26/2016 3:48:14 PM	25447
Arsenic	ND	4.2	14		mg/Kg-dr	5	5/26/2016 3:48:14 PM	25447
Barium	830	0.28	0.58		mg/Kg-dr	5	6/1/2016 12:01:05 PM	25586
Beryllium	1.1	0.027	0.87		mg/Kg-dr	5	5/26/2016 3:48:14 PM	25447
Cadmium	ND	0.37	0.58		mg/Kg-dr	5	5/26/2016 3:48:14 PM	25447
Chromium	12	0.72	1.7		mg/Kg-dr	5	5/26/2016 3:48:14 PM	25447
Cobalt	6.5	0.22	1.7		mg/Kg-dr	5	5/26/2016 3:48:14 PM	25447
Iron	21000	110	290		mg/Kg-dr	100	6/16/2016 8:34:14 AM	25586
Lead	5.7	1.0	1.4		mg/Kg-dr	5	5/26/2016 3:48:14 PM	25447
Manganese	1200	0.26	0.58		mg/Kg-dr	5	5/26/2016 3:48:14 PM	25447
Nickel	15	0.66	2.9		mg/Kg-dr	5	5/26/2016 3:48:14 PM	25447
Selenium	ND	6.3	14		mg/Kg-dr	5	5/26/2016 3:48:14 PM	25447
Silver	ND	0.18	1.4		mg/Kg-dr	5	5/26/2016 3:48:14 PM	25447
Vanadium	14	0.20	14	J	mg/Kg-dr	5	5/26/2016 3:48:14 PM	25447
Zinc	21	3.3	14		mg/Kg-dr	5	5/26/2016 3:48:14 PM	25447
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	0.098	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Acenaphthylene	ND	0.093	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Aniline	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Anthracene	ND	0.076	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Azobenzene	ND	0.14	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Benz(a)anthracene	ND	0.098	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Benzo(a)pyrene	ND	0.087	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Benzo(b)fluoranthene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Benzo(g,h,i)perylene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Benzo(k)fluoranthene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Benzoic acid	ND	0.095	0.57		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Benzyl alcohol	ND	0.090	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Bis(2-chloroethoxy)methane	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469

Refer to the QC Summary report and 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 10-19 (12-14')

Project: SWMU 10

Collection Date: 5/17/2016 10:15:00 AM

Lab ID: 1605875-006

Matrix: MEOH (SOIL) Received Date: 5/18/2016 4:00:00 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	5/25/2016 6:52:36 PM	25469
Bis(2-chloroisopropyl)ether	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Bis(2-ethylhexyl)phthalate	ND	0.093	0.57		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
4-Bromophenyl phenyl ether	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Butyl benzyl phthalate	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Carbazole	ND	0.077	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
4-Chloro-3-methylphenol	ND	0.14	0.57		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
4-Chloroaniline	ND	0.12	0.57		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
2-Chloronaphthalene	ND	0.090	0.29		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
2-Chlorophenol	ND	0.090	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
4-Chlorophenyl phenyl ether	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Chrysene	ND	0.097	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Di-n-butyl phthalate	ND	0.086	0.46		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Di-n-octyl phthalate	ND	0.098	0.46		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Dibenz(a,h)anthracene	ND	0.093	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Dibenzofuran	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
1,2-Dichlorobenzene	ND	0.088	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
1,3-Dichlorobenzene	ND	0.088	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
1,4-Dichlorobenzene	ND	0.097	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
3,3'-Dichlorobenzidine	ND	0.084	0.29		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Diethyl phthalate	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Dimethyl phthalate	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
2,4-Dichlorophenol	ND	0.11	0.46		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
2,4-Dimethylphenol	ND	0.12	0.34		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
4,6-Dinitro-2-methylphenol	ND	0.069	0.46		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
2,4-Dinitrophenol	ND	0.076	0.57		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
2,4-Dinitrotoluene	ND	0.10	0.57		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
2,6-Dinitrotoluene	ND	0.12	0.57		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Fluoranthene	ND	0.066	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Fluorene	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Hexachlorobenzene	ND	0.090	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Hexachlorobutadiene	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Hexachlorocyclopentadiene	ND	0.13	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Hexachloroethane	ND	0.098	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Indeno(1,2,3-cd)pyrene	ND	0.089	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
1-Methylnaphthalene	2.1	0.11	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
2-Methylnaphthalene	3.0	0.14	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
2-Methylphenol	ND	0.096	0.46		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
3+4-Methylphenol	ND	0.083	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469

Refer to the QC Summary report and 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
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	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	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1605875

Date Reported: 7/7/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-19 (12-14')

Project: SWMU 10

Collection Date: 5/17/2016 10:15:00 AM

Lab ID: 1605875-006

Matrix: MEOH (SOIL) **Received Date:** 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
N-Nitrosodi-n-propylamine	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
N-Nitrosodiphenylamine	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Naphthalene	0.41	0.11	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
2-Nitroaniline	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
3-Nitroaniline	ND	0.10	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
4-Nitroaniline	ND	0.081	0.46		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Nitrobenzene	ND	0.12	0.46		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
2-Nitrophenol	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
4-Nitrophenol	ND	0.087	0.29		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Pentachlorophenol	ND	0.074	0.46		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Phenanthrene	0.61	0.078	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Phenol	ND	0.086	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Pyrene	ND	0.086	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Pyridine	ND	0.091	0.46		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
1,2,4-Trichlorobenzene	ND	0.12	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
2,4,5-Trichlorophenol	ND	0.11	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
2,4,6-Trichlorophenol	ND	0.095	0.23		mg/Kg-dr	1	5/25/2016 6:52:36 PM	25469
Surr: 2-Fluorophenol	51.6	0	28.3-102		%Rec	1	5/25/2016 6:52:36 PM	25469
Surr: Phenol-d5	60.7	0	35.7-103		%Rec	1	5/25/2016 6:52:36 PM	25469
Surr: 2,4,6-Tribromophenol	68.5	0	35.2-108		%Rec	1	5/25/2016 6:52:36 PM	25469
Surr: Nitrobenzene-d5	61.3		24-118		%Rec	1	5/25/2016 6:52:36 PM	25469
Surr: 2-Fluorobiphenyl	71.6		35.4-111		%Rec	1	5/25/2016 6:52:36 PM	25469
Surr: 4-Terphenyl-d14	76.3		15-91.7		%Rec	1	5/25/2016 6:52:36 PM	25469
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Benzene	ND	0.068	0.084		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Toluene	0.16	0.010	0.17	J	mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Ethylbenzene	0.29	0.014	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Methyl tert-butyl ether (MTBE)	ND	0.053	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,2,4-Trimethylbenzene	3.4	0.012	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,3,5-Trimethylbenzene	1.4	0.012	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,2-Dichloroethane (EDC)	ND	0.044	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,2-Dibromoethane (EDB)	ND	0.012	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Naphthalene	2.3	0.026	0.34		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1-Methylnaphthalene	7.2	0.038	0.68		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
2-Methylnaphthalene	13	0.036	0.68		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Acetone	ND	0.22	2.5		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Bromobenzene	ND	0.014	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Bromodichloromethane	ND	0.0098	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Bromoform	ND	0.021	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413

Refer to the QC Summary report and 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 10-19 (12-14')**Project:** SWMU 10**Collection Date:** 5/17/2016 10:15:00 AM**Lab ID:** 1605875-006**Matrix:** MEOH (SOIL) **Received Date:** 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Bromomethane	ND	0.062	0.51		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
2-Butanone	ND	0.096	1.7		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Carbon disulfide	ND	0.056	1.7		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Carbon tetrachloride	ND	0.011	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Chlorobenzene	ND	0.014	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Chloroethane	ND	0.034	0.34		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Chloroform	ND	0.013	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Chloromethane	ND	0.015	0.51		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
2-Chlorotoluene	ND	0.012	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
4-Chlorotoluene	ND	0.015	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
cis-1,2-DCE	ND	0.0098	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
cis-1,3-Dichloropropene	ND	0.016	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,2-Dibromo-3-chloropropane	ND	0.052	0.34		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Dibromochloromethane	ND	0.015	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Dibromomethane	ND	0.015	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,2-Dichlorobenzene	ND	0.015	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,3-Dichlorobenzene	ND	0.014	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,4-Dichlorobenzene	ND	0.021	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Dichlorodifluoromethane	ND	0.052	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,1-Dichloroethane	ND	0.0091	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,1-Dichloroethene	ND	0.055	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,2-Dichloropropane	ND	0.014	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,3-Dichloropropane	ND	0.019	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
2,2-Dichloropropane	ND	0.0097	0.34		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,1-Dichloropropene	ND	0.013	0.34		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Hexachlorobutadiene	ND	0.021	0.34		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
2-Hexanone	ND	0.092	1.7		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Isopropylbenzene	0.14	0.015	0.17	J	mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
4-Isopropyltoluene	0.35	0.015	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
4-Methyl-2-pentanone	ND	0.049	1.7		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Methylene chloride	0.050	0.049	0.51	J	mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
n-Butylbenzene	0.27	0.015	0.51	J	mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
n-Propylbenzene	0.28	0.013	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
sec-Butylbenzene	0.17	0.023	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Styrene	ND	0.015	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
tert-Butylbenzene	ND	0.014	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,1,1,2-Tetrachloroethane	ND	0.016	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,1,2,2-Tetrachloroethane	ND	0.027	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Tetrachloroethene (PCE)	ND	0.014	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413

Refer to the QC Summary report and 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 1605875

Date Reported: 7/7/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-19 (12-14')

Project: SWMU 10

Collection Date: 5/17/2016 10:15:00 AM

Lab ID: 1605875-006

Matrix: MEOH (SOIL) **Received Date:** 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
trans-1,2-DCE	ND	0.047	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
trans-1,3-Dichloropropene	ND	0.025	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,2,3-Trichlorobenzene	ND	0.025	0.34		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,2,4-Trichlorobenzene	ND	0.018	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,1,1-Trichloroethane	ND	0.010	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,1,2-Trichloroethane	ND	0.020	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Trichloroethene (TCE)	ND	0.018	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Trichlorofluoromethane	ND	0.013	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
1,2,3-Trichloropropane	ND	0.029	0.34		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Vinyl chloride	ND	0.014	0.17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Xylenes, Total	5.9	0.032	0.34		mg/Kg-dr	5	5/23/2016 4:32:16 PM	D34413
Surr: Dibromofluoromethane	94.6		70-130		%Rec	5	5/23/2016 4:32:16 PM	D34413
Surr: 1,2-Dichloroethane-d4	89.6		70-130		%Rec	5	5/23/2016 4:32:16 PM	D34413
Surr: Toluene-d8	98.8		70-130		%Rec	5	5/23/2016 4:32:16 PM	D34413
Surr: 4-Bromofluorobenzene	131		70-130	S	%Rec	5	5/23/2016 4:32:16 PM	D34413
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF	
Gasoline Range Organics (GRO)	270	2.5	17		mg/Kg-dr	5	5/23/2016 4:32:16 PM	C34413
Surr: BFB	123	0	70-130		%Rec	5	5/23/2016 4:32:16 PM	C34413

Refer to the QC Summary report and 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 1605875

Date Reported: 7/7/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-19 (18-20')

Project: SWMU 10

Collection Date: 5/17/2016 10:25:00 AM

Lab ID: 1605875-007

Matrix: SOIL

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH	
Diesel Range Organics (DRO)	ND	4.1	11		mg/Kg-dr	1	5/24/2016 8:22:08 PM	25449
Motor Oil Range Organics (MRO)	ND	57	57		mg/Kg-dr	1	5/24/2016 8:22:08 PM	25449
Surr: DNOP	103	0	70-130		%Rec	1	5/24/2016 8:22:08 PM	25449
PERCENT MOISTURE							Analyst: BCN	
Percent Moisture	12	1.0	1.0		wt%	1	5/23/2016	R34494
EPA METHOD 7471: MERCURY							Analyst: pmf	
Mercury	0.00081	0.00063	0.037	J	mg/Kg-dr	1	5/24/2016 1:05:42 PM	25448
EPA METHOD 6010B: SOIL METALS							Analyst: MED	
Antimony	3.2	1.3	2.8		mg/Kg-dr	1	5/24/2016 3:41:12 PM	25447
Arsenic	3.0	0.82	2.8		mg/Kg-dr	1	5/24/2016 3:41:12 PM	25447
Barium	480	0.11	0.22		mg/Kg-dr	2	6/1/2016 12:03:51 PM	25586
Beryllium	1.0	0.0051	0.17		mg/Kg-dr	1	5/24/2016 3:41:12 PM	25447
Cadmium	ND	0.071	0.11		mg/Kg-dr	1	5/24/2016 3:41:12 PM	25447
Chromium	13	0.14	0.33		mg/Kg-dr	1	5/24/2016 3:41:12 PM	25447
Cobalt	7.9	0.042	0.33		mg/Kg-dr	1	5/24/2016 3:41:12 PM	25447
Iron	21000	110	280		mg/Kg-dr	100	6/16/2016 8:35:21 AM	25586
Lead	3.5	0.20	0.28		mg/Kg-dr	1	5/24/2016 3:41:12 PM	25447
Manganese	410	0.099	0.22		mg/Kg-dr	2	5/24/2016 3:42:57 PM	25447
Nickel	15	0.13	0.56		mg/Kg-dr	1	5/24/2016 3:41:12 PM	25447
Selenium	ND	1.2	2.8		mg/Kg-dr	1	5/26/2016 3:52:43 PM	25447
Silver	ND	0.035	0.28		mg/Kg-dr	1	5/24/2016 3:41:12 PM	25447
Vanadium	13	0.039	2.8		mg/Kg-dr	1	5/24/2016 3:41:12 PM	25447
Zinc	25	0.64	2.8		mg/Kg-dr	1	5/24/2016 3:41:12 PM	25447
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Acenaphthene	ND	0.096	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Acenaphthylene	ND	0.091	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Aniline	ND	0.11	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Anthracene	ND	0.074	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Azobenzene	ND	0.14	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Benz(a)anthracene	ND	0.096	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Benzo(a)pyrene	ND	0.084	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Benzo(b)fluoranthene	ND	0.10	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Benzo(g,h,i)perylene	ND	0.098	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Benzo(k)fluoranthene	ND	0.098	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Benzoic acid	ND	0.092	0.56		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Benzyl alcohol	ND	0.087	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Bis(2-chloroethoxy)methane	ND	0.12	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469

Refer to the QC Summary report and 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 10-19 (18-20')

Project: SWMU 10

Collection Date: 5/17/2016 10:25:00 AM

Lab ID: 1605875-007

Matrix: SOIL

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Bis(2-chloroethyl)ether	ND	0.082	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Bis(2-chloroisopropyl)ether	ND	0.10	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Bis(2-ethylhexyl)phthalate	ND	0.091	0.56		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
4-Bromophenyl phenyl ether	ND	0.11	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Butyl benzyl phthalate	ND	0.099	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Carbazole	ND	0.075	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
4-Chloro-3-methylphenol	ND	0.13	0.56		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
4-Chloroaniline	ND	0.12	0.56		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
2-Chloronaphthalene	ND	0.088	0.28		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
2-Chlorophenol	ND	0.088	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
4-Chlorophenyl phenyl ether	ND	0.13	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Chrysene	ND	0.095	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Di-n-butyl phthalate	ND	0.083	0.45		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Di-n-octyl phthalate	ND	0.095	0.45		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Dibenz(a,h)anthracene	ND	0.090	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Dibenzofuran	ND	0.11	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
1,2-Dichlorobenzene	ND	0.085	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
1,3-Dichlorobenzene	ND	0.086	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
1,4-Dichlorobenzene	ND	0.094	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
3,3'-Dichlorobenzidine	ND	0.082	0.28		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Diethyl phthalate	ND	0.11	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Dimethyl phthalate	ND	0.11	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
2,4-Dichlorophenol	ND	0.10	0.45		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
2,4-Dimethylphenol	ND	0.12	0.33		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
4,6-Dinitro-2-methylphenol	ND	0.067	0.45		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
2,4-Dinitrophenol	ND	0.074	0.56		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
2,4-Dinitrotoluene	ND	0.10	0.56		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
2,6-Dinitrotoluene	ND	0.12	0.56		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Fluoranthene	ND	0.064	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Fluorene	ND	0.10	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Hexachlorobenzene	ND	0.088	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Hexachlorobutadiene	ND	0.13	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Hexachlorocyclopentadiene	ND	0.13	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Hexachloroethane	ND	0.096	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Indeno(1,2,3-cd)pyrene	ND	0.087	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
1-Methylnaphthalene	ND	0.11	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
2-Methylnaphthalene	ND	0.13	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
2-Methylphenol	ND	0.093	0.45		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
3+4-Methylphenol	ND	0.081	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469

Refer to the QC Summary report and 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 1605875

Date Reported: 7/7/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-19 (18-20')

Project: SWMU 10

Collection Date: 5/17/2016 10:25:00 AM

Lab ID: 1605875-007

Matrix: SOIL

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
N-Nitrosodi-n-propylamine	ND	0.11	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
N-Nitrosodiphenylamine	ND	0.11	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Naphthalene	ND	0.11	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
2-Nitroaniline	ND	0.12	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
3-Nitroaniline	ND	0.098	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
4-Nitroaniline	ND	0.079	0.45		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Nitrobenzene	ND	0.12	0.45		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
2-Nitrophenol	ND	0.11	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
4-Nitrophenol	ND	0.085	0.28		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Pentachlorophenol	ND	0.072	0.45		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Phenanthrene	ND	0.076	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Phenol	ND	0.084	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Pyrene	ND	0.084	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Pyridine	ND	0.088	0.45		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
1,2,4-Trichlorobenzene	ND	0.12	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
2,4,5-Trichlorophenol	ND	0.11	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
2,4,6-Trichlorophenol	ND	0.093	0.22		mg/Kg-dr	1	5/25/2016 7:23:09 PM	25469
Surr: 2-Fluorophenol	49.6	0	28.3-102		%Rec	1	5/25/2016 7:23:09 PM	25469
Surr: Phenol-d5	54.2	0	35.7-103		%Rec	1	5/25/2016 7:23:09 PM	25469
Surr: 2,4,6-Tribromophenol	61.6	0	35.2-108		%Rec	1	5/25/2016 7:23:09 PM	25469
Surr: Nitrobenzene-d5	55.6		24-118		%Rec	1	5/25/2016 7:23:09 PM	25469
Surr: 2-Fluorobiphenyl	58.2		35.4-111		%Rec	1	5/25/2016 7:23:09 PM	25469
Surr: 4-Terphenyl-d14	47.1		15-91.7		%Rec	1	5/25/2016 7:23:09 PM	25469
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Benzene	8.30	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Toluene	6.56	0.253	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Ethylbenzene	1.43	0.281	2.09	J	µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Methyl tert-butyl ether (MTBE)	ND	0.351	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,2,4-Trimethylbenzene	1.34	0.355	2.09	J	µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,3,5-Trimethylbenzene	0.847	0.345	2.09	J	µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,2-Dichloroethane (EDC)	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,2-Dibromoethane (EDB)	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Naphthalene	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1-Methylnaphthalene	1.39	0.238	4.18	J	µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
2-Methylnaphthalene	1.74	0.551	4.18	J	µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Acetone	1.83	0.619	10.5	J	µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Bromobenzene	ND	0.213	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Bromodichloromethane	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Bromoform	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468

Refer to the QC Summary report and 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 1605875

Date Reported: 7/7/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-19 (18-20')

Project: SWMU 10

Collection Date: 5/17/2016 10:25:00 AM

Lab ID: 1605875-007

Matrix: SOIL

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
Bromomethane	ND	0.377	3.14		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
2-Butanone	ND	0.754	10.5		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Carbon disulfide	ND	0.774	10.5		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Carbon tetrachloride	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Chlorobenzene	ND	0.240	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Chloroethane	ND	0.386	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Chloroform	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Chloromethane	ND	0.530	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
2-Chlorotoluene	ND	0.356	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
4-Chlorotoluene	ND	0.348	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
cis-1,2-DCE	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
cis-1,3-Dichloropropene	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,2-Dibromo-3-chloropropane	ND	0.223	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Dibromochloromethane	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Dibromomethane	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,2-Dichlorobenzene	ND	0.305	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,3-Dichlorobenzene	ND	0.386	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,4-Dichlorobenzene	ND	0.392	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Dichlorodifluoromethane	ND	1.22	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,1-Dichloroethane	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,1-Dichloroethene	ND	0.342	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,2-Dichloropropane	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,3-Dichloropropane	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
2,2-Dichloropropane	ND	0.264	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,1-Dichloropropene	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Hexachlorobutadiene	ND	0.477	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
2-Hexanone	ND	0.521	10.5		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Isopropylbenzene	ND	0.263	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
4-Isopropyltoluene	ND	0.392	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
4-Methyl-2-pentanone	ND	4.18	10.5		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Methylene chloride	ND	2.09	3.14		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
n-Butylbenzene	ND	0.509	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
n-Propylbenzene	0.376	0.374	2.09	J	µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
sec-Butylbenzene	ND	0.371	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Styrene	ND	0.267	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
tert-Butylbenzene	ND	0.306	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,1,1,2-Tetrachloroethane	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,1,2,2-Tetrachloroethane	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Tetrachloroethene (PCE)	ND	0.275	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468

Refer to the QC Summary report and 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 1605875

Date Reported: 7/7/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-19 (18-20')

Project: SWMU 10

Collection Date: 5/17/2016 10:25:00 AM

Lab ID: 1605875-007

Matrix: SOIL

Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
METHOD 8260B/5035LOW: VOLATILES							Analyst: BCN	
trans-1,2-DCE	ND	0.211	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
trans-1,3-Dichloropropene	ND	0.253	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,2,3-Trichlorobenzene	ND	0.506	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,2,4-Trichlorobenzene	ND	0.634	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,1,1-Trichloroethane	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,1,2-Trichloroethane	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Trichloroethene (TCE)	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Trichlorofluoromethane	ND	0.263	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
1,2,3-Trichloropropane	ND	2.09	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Vinyl chloride	ND	0.550	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Xylenes, Total	4.35	0.834	2.09		µg/Kg-dry	1	5/25/2016 4:33:00 PM	25468
Surr: 1,2-Dichloroethane-d4	101	0	70-130		%Rec	1	5/25/2016 4:33:00 PM	25468
Surr: 4-Bromofluorobenzene	101	0	70-130		%Rec	1	5/25/2016 4:33:00 PM	25468
Surr: Dibromofluoromethane	90.2	0	70-130		%Rec	1	5/25/2016 4:33:00 PM	25468
Surr: Toluene-d8	96.5	0	70-130		%Rec	1	5/25/2016 4:33:00 PM	25468
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF	
Gasoline Range Organics (GRO)	ND	0.52	3.5		mg/Kg-dr	1	5/23/2016 7:50:34 PM	C34413
Surr: BFB	99.7	0	70-130		%Rec	1	5/23/2016 7:50:34 PM	C34413

Refer to the QC Summary report and 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 1605875

Date Reported: 7/7/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-20 (2-2.5')

Project: SWMU 10

Collection Date: 5/17/2016 1:10:00 PM

Lab ID: 1605875-008

Matrix: MEOH (SOIL) **Received Date:** 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS								Analyst: KJH
Diesel Range Organics (DRO)	8900	410	1200		mg/Kg-dr	100	5/25/2016 9:44:23 AM	25449
Motor Oil Range Organics (MRO)	6700	5800	5800		mg/Kg-dr	100	5/25/2016 9:44:23 AM	25449
Surr: DNOP	0	0	70-130	S	%Rec	100	5/25/2016 9:44:23 AM	25449
PERCENT MOISTURE								Analyst: BCN
Percent Moisture	17	1.0	1.0		wt%	1	5/23/2016	R34494
EPA METHOD 7471: MERCURY								Analyst: pmf
Mercury	2.0	0.0067	0.39		mg/Kg-dr	10	5/24/2016 1:18:28 PM	25448
EPA METHOD 6010B: SOIL METALS								Analyst: MED
Antimony	2.7	1.4	3.0	J	mg/Kg-dr	1	5/24/2016 3:44:35 PM	25447
Arsenic	5.4	0.87	3.0		mg/Kg-dr	1	5/24/2016 3:44:35 PM	25447
Barium	490	0.11	0.23		mg/Kg-dr	2	6/1/2016 12:06:41 PM	25586
Beryllium	0.77	0.0055	0.18		mg/Kg-dr	1	5/24/2016 3:44:35 PM	25447
Cadmium	ND	0.076	0.12		mg/Kg-dr	1	5/24/2016 3:44:35 PM	25447
Chromium	150	0.15	0.36		mg/Kg-dr	1	5/24/2016 3:44:35 PM	25447
Cobalt	4.9	0.045	0.36		mg/Kg-dr	1	5/24/2016 3:44:35 PM	25447
Iron	16000	230	580		mg/Kg-dr	200	6/16/2016 8:36:27 AM	25586
Lead	21	0.21	0.30		mg/Kg-dr	1	5/24/2016 3:44:35 PM	25447
Manganese	520	0.11	0.24		mg/Kg-dr	2	5/24/2016 3:46:21 PM	25447
Nickel	12	0.14	0.60		mg/Kg-dr	1	5/24/2016 3:44:35 PM	25447
Selenium	ND	1.3	3.0		mg/Kg-dr	1	5/26/2016 3:57:07 PM	25447
Silver	ND	0.038	0.30		mg/Kg-dr	1	5/24/2016 3:44:35 PM	25447
Vanadium	23	0.042	3.0		mg/Kg-dr	1	5/24/2016 3:44:35 PM	25447
Zinc	390	1.4	6.0		mg/Kg-dr	2	5/24/2016 3:46:21 PM	25447
EPA METHOD 8270C: SEMIVOLATILES								Analyst: DAM
Acenaphthene	ND	10	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Acenaphthylene	ND	9.5	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Aniline	ND	11	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Anthracene	ND	7.7	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Azobenzene	ND	14	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Benz(a)anthracene	ND	10	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Benzo(a)pyrene	ND	8.8	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Benzo(b)fluoranthene	ND	11	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Benzo(g,h,i)perylene	ND	10	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Benzo(k)fluoranthene	ND	10	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Benzoic acid	ND	9.7	58	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Benzyl alcohol	ND	9.1	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Bis(2-chloroethoxy)methane	ND	13	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469

Refer to the QC Summary report and 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 10-20 (2-2.5')

Project: SWMU 10

Collection Date: 5/17/2016 1:10:00 PM

Lab ID: 1605875-008

Matrix: MEOH (SOIL) Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
Bis(2-chloroethyl)ether	ND	8.6	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Bis(2-chloroisopropyl)ether	ND	10	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Bis(2-ethylhexyl)phthalate	ND	9.5	58	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
4-Bromophenyl phenyl ether	ND	11	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Butyl benzyl phthalate	ND	10	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Carbazole	ND	7.9	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
4-Chloro-3-methylphenol	ND	14	58	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
4-Chloroaniline	ND	13	58	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
2-Chloronaphthalene	ND	9.2	29	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
2-Chlorophenol	ND	9.2	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
4-Chlorophenyl phenyl ether	ND	13	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Chrysene	ND	9.9	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Di-n-butyl phthalate	ND	8.7	47	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Di-n-octyl phthalate	ND	10	47	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Dibenz(a,h)anthracene	ND	9.4	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Dibenzofuran	ND	12	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
1,2-Dichlorobenzene	ND	8.9	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
1,3-Dichlorobenzene	ND	9.0	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
1,4-Dichlorobenzene	ND	9.9	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
3,3'-Dichlorobenzidine	ND	8.6	29	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Diethyl phthalate	ND	12	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Dimethyl phthalate	ND	11	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
2,4-Dichlorophenol	ND	11	47	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
2,4-Dimethylphenol	ND	13	35	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
4,6-Dinitro-2-methylphenol	ND	7.1	47	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
2,4-Dinitrophenol	ND	7.7	58	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
2,4-Dinitrotoluene	ND	10	58	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
2,6-Dinitrotoluene	ND	12	58	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Fluoranthene	ND	6.7	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Fluorene	ND	11	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Hexachlorobenzene	ND	9.2	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Hexachlorobutadiene	ND	13	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Hexachlorocyclopentadiene	ND	13	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Hexachloroethane	ND	10	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Indeno(1,2,3-cd)pyrene	ND	9.1	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Isophorone	ND	13	47	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
1-Methylnaphthalene	ND	12	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
2-Methylnaphthalene	ND	14	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
2-Methylphenol	ND	9.8	47	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469

Refer to the QC Summary report and 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 1605875

Date Reported: 7/7/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-20 (2-2.5')

Project: SWMU 10

Collection Date: 5/17/2016 1:10:00 PM

Lab ID: 1605875-008

Matrix: MEOH (SOIL) **Received Date:** 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM	
3+4-Methylphenol	ND	8.4	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
N-Nitrosodi-n-propylamine	ND	11	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
N-Nitrosodiphenylamine	ND	11	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Naphthalene	ND	11	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
2-Nitroaniline	ND	13	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
3-Nitroaniline	ND	10	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
4-Nitroaniline	ND	8.2	47	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Nitrobenzene	ND	12	47	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
2-Nitrophenol	ND	12	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
4-Nitrophenol	ND	8.9	29	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Pentachlorophenol	ND	7.5	47	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Phenanthrene	ND	7.9	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Phenol	ND	8.8	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Pyrene	ND	8.8	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Pyridine	ND	9.3	47	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
1,2,4-Trichlorobenzene	ND	13	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
2,4,5-Trichlorophenol	ND	12	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
2,4,6-Trichlorophenol	ND	9.7	23	D	mg/Kg-dr	10	5/25/2016 7:53:42 PM	25469
Surr: 2-Fluorophenol	0	0	28.3-102	SD	%Rec	10	5/25/2016 7:53:42 PM	25469
Surr: Phenol-d5	0	0	35.7-103	SD	%Rec	10	5/25/2016 7:53:42 PM	25469
Surr: 2,4,6-Tribromophenol	0	0	35.2-108	SD	%Rec	10	5/25/2016 7:53:42 PM	25469
Surr: Nitrobenzene-d5	0		24-118	SD	%Rec	10	5/25/2016 7:53:42 PM	25469
Surr: 2-Fluorobiphenyl	0		35.4-111	SD	%Rec	10	5/25/2016 7:53:42 PM	25469
Surr: 4-Terphenyl-d14	0		15-91.7	SD	%Rec	10	5/25/2016 7:53:42 PM	25469
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Benzene	ND	0.019	0.024	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Toluene	ND	0.0028	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Ethylbenzene	ND	0.0039	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Methyl tert-butyl ether (MTBE)	ND	0.015	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,2,4-Trimethylbenzene	ND	0.0035	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,3,5-Trimethylbenzene	ND	0.0035	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,2-Dichloroethane (EDC)	ND	0.012	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,2-Dibromoethane (EDB)	ND	0.0034	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Naphthalene	ND	0.0074	0.095	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1-Methylnaphthalene	ND	0.011	0.19	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
2-Methylnaphthalene	ND	0.010	0.19	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Acetone	ND	0.062	0.71	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Bromobenzene	ND	0.0038	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Bromodichloromethane	ND	0.0028	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413

Refer to the QC Summary report and 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 10-20 (2-2.5')**Project:** SWMU 10**Collection Date:** 5/17/2016 1:10:00 PM**Lab ID:** 1605875-008**Matrix:** MEOH (SOIL) **Received Date:** 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Bromoform	ND	0.0058	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Bromomethane	ND	0.018	0.14	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
2-Butanone	ND	0.027	0.48	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Carbon disulfide	ND	0.016	0.48	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Carbon tetrachloride	ND	0.0031	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Chlorobenzene	ND	0.0039	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Chloroethane	ND	0.0095	0.095	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Chloroform	ND	0.0036	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Chloromethane	ND	0.0042	0.14	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
2-Chlorotoluene	ND	0.0035	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
4-Chlorotoluene	ND	0.0042	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
cis-1,2-DCE	ND	0.0028	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
cis-1,3-Dichloropropene	ND	0.0044	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,2-Dibromo-3-chloropropane	ND	0.015	0.095	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Dibromochloromethane	ND	0.0043	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Dibromomethane	ND	0.0041	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,2-Dichlorobenzene	ND	0.0042	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,3-Dichlorobenzene	ND	0.0039	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,4-Dichlorobenzene	ND	0.0059	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Dichlorodifluoromethane	ND	0.015	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,1-Dichloroethane	ND	0.0026	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,1-Dichloroethene	ND	0.016	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,2-Dichloropropane	ND	0.0040	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,3-Dichloropropane	ND	0.0054	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
2,2-Dichloropropane	ND	0.0027	0.095	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,1-Dichloropropene	ND	0.0038	0.095	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Hexachlorobutadiene	ND	0.0058	0.095	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
2-Hexanone	ND	0.026	0.48	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Isopropylbenzene	ND	0.0041	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
4-Isopropyltoluene	ND	0.0043	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
4-Methyl-2-pentanone	ND	0.014	0.48	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Methylene chloride	ND	0.014	0.14	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
n-Butylbenzene	ND	0.0042	0.14	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
n-Propylbenzene	ND	0.0037	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
sec-Butylbenzene	ND	0.0066	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Styrene	ND	0.0042	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
tert-Butylbenzene	ND	0.0039	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,1,1,2-Tetrachloroethane	ND	0.0046	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,1,2,2-Tetrachloroethane	ND	0.0077	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413

Refer to the QC Summary report and 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 1605875

Date Reported: 7/7/2016

CLIENT: Western Refining Company

Client Sample ID: SWMU 10-20 (2-2.5')

Project: SWMU 10

Collection Date: 5/17/2016 1:10:00 PM

Lab ID: 1605875-008

Matrix: MEOH (SOIL) Received Date: 5/18/2016 4:00:00 PM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Tetrachloroethene (PCE)	ND	0.0039	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
trans-1,2-DCE	ND	0.013	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
trans-1,3-Dichloropropene	ND	0.0070	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,2,3-Trichlorobenzene	ND	0.0071	0.095	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,2,4-Trichlorobenzene	ND	0.0051	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,1,1-Trichloroethane	ND	0.0029	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,1,2-Trichloroethane	ND	0.0056	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Trichloroethene (TCE)	ND	0.0051	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Trichlorofluoromethane	ND	0.0036	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
1,2,3-Trichloropropane	ND	0.0082	0.095	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Vinyl chloride	ND	0.0039	0.048	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Xylenes, Total	ND	0.0090	0.095	D	mg/Kg-dr	1	5/23/2016 8:18:57 PM	D34413
Surr: Dibromofluoromethane	92.5		70-130	D	%Rec	1	5/23/2016 8:18:57 PM	D34413
Surr: 1,2-Dichloroethane-d4	81.5		70-130	D	%Rec	1	5/23/2016 8:18:57 PM	D34413
Surr: Toluene-d8	102		70-130	D	%Rec	1	5/23/2016 8:18:57 PM	D34413
Surr: 4-Bromofluorobenzene	107		70-130	D	%Rec	1	5/23/2016 8:18:57 PM	D34413
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: DJF	
Gasoline Range Organics (GRO)	1.1	0.72	4.8	J	mg/Kg-dr	1	5/23/2016 8:18:57 PM	C34413
Surr: BFB	98.1	0	70-130		%Rec	1	5/23/2016 8:18:57 PM	C34413

Refer to the QC Summary report and 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



Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	U		0.640	2.00	1	05/26/2016 15:17	<u>WG875269</u>

Wet Chemistry by Method 9012B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Cyanide	1.06	<u>J3</u>	0.0390	0.250	1	05/25/2016 16:34	<u>WG874999</u>





Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	05/26/2016 15:18	<u>WG875269</u>

Wet Chemistry by Method 9012B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Cyanide	3.88		0.0390	0.250	1	05/31/2016 10:16	<u>WG875385</u>





Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	0.960	J	0.640	2.00	1	05/26/2016 15:19	WG875269

Wet Chemistry by Method 9012B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Cyanide	U		0.0390	0.250	1	05/31/2016 10:17	WG875385





Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	U		0.640	2.00	1	05/26/2016 15:19	WG875269

Wet Chemistry by Method 9012B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Cyanide	U		0.0390	0.250	1	05/31/2016 10:19	WG875385

2
Tc3
Ss4
Cn5
Sr6
Qc7
Gl8
Al9
Sc



Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	05/26/2016 15:19	WG875269

Wet Chemistry by Method 9012B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Cyanide	U		0.0390	0.250	1	05/31/2016 10:20	WG875385





Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Chromium, Hexavalent	U		0.640	2.00	1	05/26/2016 15:20	<u>WG875269</u>

Wet Chemistry by Method 9012B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Cyanide	U		0.0390	0.250	1	05/31/2016 10:21	<u>WG875385</u>





Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Chromium, Hexavalent	U		0.640	2.00	1	05/26/2016 15:20	WG875269

Wet Chemistry by Method 9012B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Cyanide	0.0400	J	0.0390	0.250	1	05/27/2016 15:00	WG875172

² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	1.16	J	0.640	2.00	1	05/26/2016 15:21	WG875269

Wet Chemistry by Method 9012B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Cyanide	1.56		0.0390	0.250	1	05/27/2016 15:05	WG875172

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3140032-1 05/26/16 15:04				
Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chromium, Hexavalent	U		0.640	2.00

L836517-01 Original Sample (OS) • Duplicate (DUP)

(OS) L836517-01 05/26/16 15:08 • (DUP) R3140032-4 05/26/16 15:08				
Analyte	Original Result mg/kg	DUP Result mg/kg	DUP RPD %	DUP RPD Limits %
Chromium, Hexavalent	ND	ND	1 0.000	20

L837120-05 Original Sample (OS) • Duplicate (DUP)

(OS) L837120-05 05/26/16 15:28 • (DUP) R3140032-8 05/26/16 15:30				
Analyte	Original Result mg/kg	DUP Result mg/kg	DUP RPD %	DUP RPD Limits %
Chromium, Hexavalent	U	ND	1 0.000	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3140032-2 05/26/16 15:04 • (LCSD) R3140032-3 05/26/16 15:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chromium, Hexavalent	56.9	56.6	56.6	99.0	99.0	80.0-120			0.000	20

L836517-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L836517-01 05/26/16 15:08 • (MS) R3140032-5 05/26/16 15:10 • (MSD) R3140032-6 05/26/16 15:10

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chromium, Hexavalent	20.0	ND	3.72	3.72	9.00	9.00	1	75.0-125	J6	J6	0.000	20



Method Blank (MB)

(MB) R3139749-1 05/25/16 16:06

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Cyanide	U		0.0390	0.250

L836254-01 Original Sample (OS) • Duplicate (DUP)

(OS) L836254-01 05/25/16 16:13 • (DUP) R3139749-5 05/25/16 16:15

Analyte	Original Result mg/kg	DUP Result mg/kg	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	ND	ND	1 0.000		20

L836952-01 Original Sample (OS) • Duplicate (DUP)

(OS) L836952-01 05/25/16 16:34 • (DUP) R3139749-6 05/25/16 16:35

Analyte	Original Result mg/kg	DUP Result mg/kg	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	1.06	1.31	1 21.0	J3	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3139749-2 05/25/16 16:07 • (LCSD) R3139749-4 05/25/16 16:14

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Cyanide	48.4	60.2	49.5	124	102	50.0-150			19.0	20

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc



QUALITY CONTROL SUMMARY

WG875172

Wet Chemistry by Method 9012B

L836952-07.08

Method Blank (MB)

(MB) R3140277-1 05/27/16 14:52

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Cyanide	mg/kg U	mg/kg 0.0390	mg/kg 0.250	

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCS-D)

(LCS) R3140277-2 05/27/16 14:53 • (LCS-D) R3140277-3 05/27/16 14:55

Analyte	Spike Amount	LCS Result	LCS-D Result	LCS Rec.	LCS-D Rec.	Rec. Limits	LCS Qualifier	LCS-D Qualifier	RPD	RPD Limits
Cyanide	mg/kg 48.4	mg/kg 55.2	mg/kg 67.6	% 114	% 140	% 50.0-150			% 20.0	% 20

L836952-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MS-D)

(OS) L836952-07 05/27/16 15:00 • (MS) R3140277-4 05/27/16 15:01 • (MS-D) R3140277-5 05/27/16 15:02

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Cyanide	mg/kg 3.33	mg/kg 0.0400	mg/kg 3.53	mg/kg 3.32	% 105	% 98.0	1	% 80.0-120			% 6.00	% 20

ACCOUNT:
Hall Environmental Analysis Laboratory

PROJECT:

SDG:
L836952

DATE/TIME:
05/31/16 15:57

7 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3140567-4 05/31/16 10:11

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Cyanide	U		0.0390	0.250

L837333-01 Original Sample (OS) • Duplicate (DUP)

(OS) L837333-01 05/31/16 10:25 • (DUP) R3140567-7 05/31/16 10:26

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Cyanide	2.20	2.52	1	13.0		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3140567-5 05/31/16 10:12 • (LCSD) R3140567-6 05/31/16 10:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Cyanide	48.4	66.4	59.4	137	123	50.0-150			11.0	20



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
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.



QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1605875

07-Jul-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS-25449		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 25449		RunNo: 34433					
Prep Date:	5/23/2016		Analysis Date: 5/24/2016		SeqNo: 1061812		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	109	62.6	124			
Surr: DNOP	5.5		5.000		109	70	130			

Sample ID	MB-25449	SampType: MBLK			TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID: 25449			RunNo: 34433					
Prep Date:	5/23/2016	Analysis Date: 5/24/2016			SeqNo: 1061813		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		113	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#: 1605875

07-Jul-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: Volatiles					
Client ID:	PBS	Batch ID:	D34413	RunNo:	34413					
Prep Date:		Analysis Date:	5/23/2016	SeqNo:	1062788	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	0.015	0.20								J
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
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1605875

07-Jul-16

Client: Western Refining Company

Project: SWMU 10

Sample ID rb	SampType: MBLK			TestCode: EPA Method 8260B: Volatiles						
Client ID: PBS	Batch ID: D34413			RunNo: 34413						
Prep Date:	Analysis Date: 5/23/2016			SeqNo: 1062788		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	0.016	0.15								J
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	0.48		0.5000		96.6	70	130			
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		89.3	70	130			
Surr: Toluene-d8	0.49		0.5000		98.2	70	130			
Surr: 4-Bromofluorobenzene	0.53		0.5000		107	70	130			

Sample ID 100ng lcs	SampType: LCS			TestCode: EPA Method 8260B: Volatiles						
Client ID: LCSS	Batch ID: D34413			RunNo: 34413						
Prep Date:	Analysis Date: 5/23/2016			SeqNo: 1062789		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	102	70	130			
Toluene	1.0	0.050	1.000	0	102	70	130			
Chlorobenzene	1.0	0.050	1.000	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#: 1605875

07-Jul-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: Volatiles					
Client ID:	LCSS	Batch ID:	D34413	RunNo:	34413					
Prep Date:		Analysis Date:	5/23/2016	SeqNo:	1062789	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.0	0.050	1.000	0	103	70	130			
Trichloroethene (TCE)	0.98	0.050	1.000	0	98.3	70	130			
Surr: Dibromofluoromethane	0.49		0.5000		98.1	70	130			
Surr: 1,2-Dichloroethane-d4	0.44		0.5000		88.8	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			
Surr: 4-Bromofluorobenzene	0.55		0.5000		111	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	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1605875

07-Jul-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	LCS-25468		SampType: LCS		TestCode: Method 8260B/5035LOW: VOLATILES					
Client ID:	LCSS		Batch ID: 25468		RunNo: 34484					
Prep Date:	5/24/2016		Analysis Date: 5/25/2016		SeqNo: 1063539		Units: µg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	10.2	2.00	10.00	0	102	70	130			
Toluene	11.1	2.00	10.00	0	111	70	130			
Chlorobenzene	11.1	2.00	10.00	0	111	70	130			
1,1-Dichloroethene	10.3	2.00	10.00	0	103	68	129			
Trichloroethene (TCE)	10.2	2.00	10.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	9.00		10.00		90.0	70	130			
Surr: 4-Bromofluorobenzene	10.0		10.00		100	70	130			
Surr: Dibromofluoromethane	8.76		10.00		87.6	70	130			
Surr: Toluene-d8	9.90		10.00		99.0	70	130			

Sample ID	LCSD-25468		SampType: LCS		TestCode: Method 8260B/5035LOW: VOLATILES					
Client ID:	LCSS		Batch ID: 25468		RunNo: 34484					
Prep Date:	5/24/2016		Analysis Date: 5/25/2016		SeqNo: 1063540		Units: µg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	10.3	2.00	10.00	0	103	70	130	1.08	0	
Toluene	11.2	2.00	10.00	0	112	70	130	0.629	0	
Chlorobenzene	11.3	2.00	10.00	0	113	70	130	1.96	0	
1,1-Dichloroethene	10.4	2.00	10.00	0	104	68	129	1.16	0	
Trichloroethene (TCE)	10.2	2.00	10.00	0	102	70	130	0.295	0	
Surr: 1,2-Dichloroethane-d4	8.93		10.00		89.3	70	130	0	0	
Surr: 4-Bromofluorobenzene	10.1		10.00		101	70	130	0	0	
Surr: Dibromofluoromethane	8.72		10.00		87.2	70	130	0	0	
Surr: Toluene-d8	9.86		10.00		98.6	70	130	0	0	

Sample ID	MB-25468		SampType: MBLK		TestCode: Method 8260B/5035LOW: VOLATILES					
Client ID:	PBS		Batch ID: 25468		RunNo: 34484					
Prep Date:	5/24/2016		Analysis Date: 5/25/2016		SeqNo: 1063541		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	ND	4.00								

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#: 1605875

07-Jul-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-25468	SampType:	MBLK	TestCode:	Method 8260B/5035LOW: VOLATILES					
Client ID:	PBS	Batch ID:	25468	RunNo:	34484					
Prep Date:	5/24/2016	Analysis Date:	5/25/2016	SeqNo:	1063541	Units:	µg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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								
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								

Qualifiers:

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

B Analyte detected in the 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#: 1605875

07-Jul-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	MB-25468		SampType:	MBLK		TestCode:	Method 8260B/5035LOW: VOLATILES			
Client ID:	PBS		Batch ID:	25468		RunNo:	34484			
Prep Date:	5/24/2016		Analysis Date:	5/25/2016		SeqNo:	1063541	Units:	µg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Styrene	ND	2.00								
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	8.94		10.00		89.4	70	130			
Surr: 4-Bromofluorobenzene	10.0		10.00		100	70	130			
Surr: Dibromofluoromethane	8.80		10.00		88.0	70	130			
Surr: Toluene-d8	9.82		10.00		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	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1605875

07-Jul-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-25469	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBS	Batch ID:	25469	RunNo:	34461					
Prep Date:	5/24/2016	Analysis Date:	5/25/2016	SeqNo:	1063511	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	0.15	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	0.12	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	0.087	0.40								J
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#: 1605875

07-Jul-16

Client: Western Refining Company

Project: SWMU 10

Sample ID	mb-25469	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBS	Batch ID:	25469	RunNo:	34461					
Prep Date:	5/24/2016	Analysis Date:	5/25/2016	SeqNo:	1063511	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								
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	2.0		3.330		60.1	28.3	102			
Surr: Phenol-d5	2.2		3.330		65.9	35.7	103			
Surr: 2,4,6-Tribromophenol	2.5		3.330		75.8	35.2	108			
Surr: Nitrobenzene-d5	1.1		1.670		68.4	24	118			
Surr: 2-Fluorobiphenyl	1.2		1.670		73.2	35.4	111			
Surr: 4-Terphenyl-d14	1.1		1.670		64.4	15	91.7			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the 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